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# Resources for Researchers Web Section Usability Study—Round 2

## FINAL REPORT

Prepared for:

**Office of Communications and Government Relations**

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# INTRODUCTION

The National Institutes of Health (NIH) Roadmap explicitly emphasizes strengthening translational research through building a stronger research infrastructure. The "bench to bedside" approach seeks to improve human health by translating scientific discoveries into practical applications. Discovery begins with basic research and progresses to the patient's bedside. As part of its mission to translate scientific discoveries into practical applications, the National Institute of Allergy and Infectious Diseases (NIAID) supports this research approach through the Resources for Researchers Program. This program offers a comprehensive set of services for researchers, including resources, reagents, animal models, databases, clinical trials networks, technology transfer, as well as research and training opportunities. These services support translational research by providing infrastructure for all stages of research, from basic through clinical research. Such services facilitate pre-clinical and clinical research needed to translate the ideas generated through basic research into safe and effective drugs, vaccines, and diagnostics in order to control and prevent infectious diseases.

The *Resources for Researchers* Web section or portal is a fundamental platform that supports the NIAID Resources for Researchers Program. The *Resources for Researchers* Web section (http://www.niaid.nih.gov/labsandresources/resources/Pages/default.aspx) of the NIAID website was redesigned and launched in 2012 as a result of previous research and usability testing in the first phase of redesign. With the completion of Phase 1, the *Resources for Researchers* portal dramatically changed the way information was organized and presented. Previously, the content was organized by NIAID division; currently, the content is organized by topic or type of research.

The New Media and Web Policy Branch (NMWBP) within the Office of Communications and Government Relations (OCGR) manages and supports the *Resources for Researchers* Web section on the public-facing NIAID website. For the second phase of refining the redesigned *Resources for Researchers* Web section, the NMWPB requested that American Institutes for Research (AIR) facilitate and support two follow-up rounds of Web usability testing to evaluate the success of the Web section redesign. The evaluation effort will determine whether the website content is intuitively organized, whether site visitors can find the information that they seek, and whether the site can accomplish its goals more effectively. Round 1 usability interviews provided feedback on the efficacy of the top-level reorganization and navigation in deeper levels of the *Resources for Researchers* Web portal. Round 2 focuses on the main page format and site navigation, confirming organizational and other changes that were developed from Round 1 results.

## PURPOSE OF THE EVALUATION

The goal of this usability study for Round 2 is to discover how NIAID-funded researchers prefer to find and use the information available and, as applicable, to further improve the Web section's organization, navigation, and content. Based on the results of the first round of usability testing, the NIAID NMWBP developed test pages for participants to explore different options regarding the navigation as well as the organization of the content on the *Resources for Researchers* Web section. The objectives below describe the purpose and aim of the second phase of usability testing:

- Analyze the layout and navigation of two different formats for the Resources for Researchers main page.
- Determine researchers' preferences regarding navigation and organization of content on the Resources for Researchers main page and subpages.
- Assess the navigation needs of the researchers for the sublevel pages in the portal.
- Learn how the portal's organization and navigation at the deeper levels can be improved.

To achieve these objectives, participants were asked to complete several tasks in the *Resources for Researchers* Web section of the NIAID website. These tasks were centered around two critical areas: two layout options for the *Resources for Researchers* main page and three layout options for left navigation menus.

# STUDY DESIGN

This *Resources for Researchers* Web usability study was conducted in two rounds. In the previous round, the usability interviews focused on confirming the efficacy of the top-level reorganization of the *Resources for Researchers* Web section and navigation in deeper levels of the Web portal. The second round, which is the focus of this report, was conducted using newly developed Web pages that the NMWBP created based on participant feedback gathered during Round 1.

Participants completed several tasks during the Round 2 usability interviews on test pages created for the usability study on NIAID's development server. Pages tested included the *Resources for Researchers* main page and two of its subsections: *Biological Materials* and *Translational Research Tools and Services*. Participants reviewed and compared two interactive Web pages of the *Resources for Researchers* main page, one with expandable lists of links, and the other in the current dashboard style. A paper prototype showed three different left navigation menus during the usability interviews. With exception of the navigation options, all the *Resources for Researchers* Web pages were reviewed on the NIAID development server.

# METHOD

## RECRUITMENT

After receiving NIAID's approval and an exemption of review by the AIR Institutional Review Board (IRB), AIR recruited participants using the lists of NIAID grantee researchers that were previously provided for Round 1 of this usability study. The recruitment list included names of researchers that were sent from each of the three NIAID divisions who fund extramural research: the Division of AIDS (DAIDS), the Division of Allergy, Immunology, and Transplantation (DAIT), and the Division of Microbiology and Infectious Diseases (DMID). It also included clinical researchers conducting NIAID-funded clinical trials that AIR identified by searching 2013 and 2012 NIAID press releases.

The results of the Round 1 usability interviews indicated that type of researcher only seemed to affect the preference for particular content; participants' preferences for navigation and organization of the content were similar, regardless of the type of research the participant conducted. This result led the AIR team to determine that it was not essential to have a stratified sample. However, AIR still wanted a diverse group of researchers from each NIAID division and type of researcher to elicit more detailed feedback about the Web portal's content and organization from the different researchers' viewpoints. AIR recruited a diverse group of researchers, based on type of research conducted and NIAID division funding as shown below (Exhibit A).

**Exhibit A. Distribution of NIAID Division Grantees and Type of Researcher**

| Type of Researcher | NIAID Division |
|---|---|
| Clinical/Basic Researcher | DMID |
| Basic Researcher | DMID |
| Translational Researcher | DAIDS/DMID |
| Translational/Basic Researcher | DAIDS |
| Basic Researcher | DAIT/DAIDS |
| Translational/Basic Researcher | DAIT |

## USABILITY INTERVIEW MECHANICS

AIR conducted Web usability interviews with six NIAID-funded extramural researchers. Each participant was interviewed individually, using the approved interview protocol. Interviews were conducted over the telephone and a computer with Internet access, using an online meeting application to monitor participants' navigation through the NIAID portal. With the participants' permission, the interviews were audio and video recorded to ensure note-taking accuracy. The interviews were scheduled to take 60 minutes to complete. Participants received a $75 Visa gift card as an incentive for completing the interview.

During the interview, AIR guided the participants through several tasks on the *Resources for Researchers* portal of the NIAID website. Each task was designed to test recent navigation and organization updates.

The participants were asked several questions about each page's layout, navigation, and content. They were asked to find specific information and encouraged to share their thought process as they navigated the site.

After each interview, two team members transcribed the interviews, using both the audio and video recordings. The notes from the six interviews were analyzed by the two team members and by the interviewer; their analysis directed the presentation of findings of this report.

## PARTICIPANT CHARACTERISTICS

A total of six extramural researchers were interviewed, all of whom were current or past NIAID grantees. All participants shared equivalent education with a Ph.D. or M.D. Exhibit B (below) summarizes participant characteristics as reported when participants were screened prior to selection and from the protocol introductory questions summarized in Exhibit C (next page).

**Exhibit B. Summary of Participant Characteristics**

| Characteristics | Frequency *N* = 6 | Percentage |
|---|---|---|
| **Type of Researcher** | | |
| Basic | 5 | 83% |
| Clinical | 1 | 17% |
| Translational | 3 | 50% |
| **NIAID Division** | | |
| DMID | 3 | 50% |
| DAIT | 2 | 33% |
| DAIDS | 3 | 50% |
| **Length of NIAID funding** | | |
| Less than 5 years | 3 | 50% |
| 6–10 years | 1 | 17% |
| 11–15 years | 0 | 0% |
| More than 15 years | 2 | 33% |

**Exhibit C. Summary of Participant Use of the NIAID Resources for Researchers Web Portal**

| **Has visited the NIAID website** | | |
|---|---|---|
| Yes | 6 | 100% |
| No | 0 | 0% |
| **Has visited *Resources for Researchers* section** | | |
| Yes | 3 | 50% |
| No | 1 | 17% |
| Not sure | 2 | 33% |
| **Frequency of visits to the NIAID website** | | |
| Weekly | 0 | 0% |
| Monthly | 5 | 83% |
| Once every 2 months | 1 | 17% |
| Once in the past 6 months | 0 | 0% |
| Once in the past year | 0 | 0% |
| Never | 0 | 0% |

Before beginning the usability tasks, participants shared their previous experience with the NIAID website. All participants had visited the NIAID website in the past, with five of the six participants visiting monthly. Most participants were unsure whether they had visited the *Resources for Researchers* section of the website in the past but thought the page was familiar. Participants mentioned several different websites they visit to access research resources, such as PubMed, HIV sequence databases, NIH, BEI Resources Repository; they also used Google.

# FINDINGS

This report summarizes, in two parts, the findings from the first round of Web usability interviews conducted with six NIAID-funded researchers. The first part outlines findings that were found to be common themes or observations across tasks. The second part of this report summarizes findings specific to certain tasks or Web pages.

## GENERAL FINDINGS

Before summarizing findings that spanned many tasks, one characteristic of the study participants for both Rounds is that they are very experienced computer users, and skilled in using the Internet to find information relevant to their research. This experience defined the following criteria that would most help them find information during any Web search:

- Quickly identify those subjects that interested them
- Easily navigate to the Web pages

- Swiftly evaluate whether the information is of any value in relationship to their research.

This criteria and experience directed many of their comments as they navigated and reviewed the Web portal's pages.

Overall, Round 2 of the *Resources for Researchers* usability study found the changes made as a result of the Round 1 interviews to be successful. While there are still some enhancements that can be made to the Web portal, the Round 2 participants focused on content, and definitely provided direction as to which main page layout should be used, and navigational needs.

With the exception of one participant, the participants agreed that the NIAID *Resources for Researchers* Web portal to be easy to use. The differing participant found the Web portal to be not easy, but not difficult to use, stating:

> *"I think the complexity that sometimes you would end up on a page that it wasn't clear, it didn't follow a logic order, the fact that I couldn't easily tell where I was in the web page architecture. I couldn't tell where I was sometimes. I would have to use the back button several times. I would get lost."*

All of the participants agreed that it was easy to understand what information and resources were available in NIAID *Resources for Researchers* Web portal, but offered a few caveats.

> *"I found it easy. The problem is, as always, typically at the end you just end up with getting a general bit of information when you were hoping for something more specific. But that is content, not navigation issues."*

> *"I think eventually you will find the information. Once you are on that first page, the landing page, there was a logic in it that you didn't have to think too much to get somewhere. In some cases, they need to be better in explaining some of the menus."*

> *"Mostly easy. There were a few places where I thought things weren't where I was expected based on the headers and the hyperlinks."*

These three comments summarize the remaining challenges to updating the *Resources for Researchers* Web portal: organization, content, and navigation.

## Organization and Content

The way in which the content is organized is very important to the researchers. It was clear that the researchers wanted content organized in a certain hierarchy, with a higher priority given to the actual resources (i.e. available animal models) as opposed to topics such as product development.

In both Rounds of the usability study, the organization of the *Translational Research Tools and Services* section continued to be a topic of concern. As was mentioned in Round 1, translational research is composed of phases, preclinical or basic research, clinical research, then technology development. Selected Round 1 findings related to *Translational Research Tools and Services* and *Partnerships and Technology Development* follow this report.

Participants were confused by the organization of resources in the Preclinical and Clinical categories. Round 2 researchers suggested that vaccines, diagnostics, and therapeutics are research areas that should be subdivided by preclinical or clinical research resources. Regardless of the type of researcher, it was very clear that organization of the subtopics, particularly for Translational Research needed to be driven by the science.

Participants wanted more precision when categorizing topics by "Infectious Diseases" and "HIV-AIDS," since HIV-AIDS is an infectious disease. They suggested labeling in a more common way that they were used to seeing, with these areas divided: "Non-HIV/AIDS Infectious Diseases" and "HIV/AIDS."

Another comment consistent with Round 1 results, is that that researchers felt "Genomics" was improperly organized in the *Translational Research Tools and Services* section.

Participants comments about the content of the *Rabbit Immunology and Infectious Disease Research* and the *Microbiology and Infectious Diseases Resources* pages contrasted with their positive feedback about the content of the *Animal Models of Infectious Diseases Resources* and *Genomic Sequencing Centers* pages, which implies that each Web page in the portal needs to have a clear and easily discernible purpose.

# Navigation

There was significant feedback regarding the left navigation menu. In both rounds, it is clear that the number of left navigation menu links overwhelms the researchers. In this study, using just one pivoting link to return to the main *Resources for Researchers* page was not sufficient; researchers wanted to be able to navigate back to the main page but also navigate back to the page that the participant came from. Four of the participants selected either Option C or a combination of Options B and C from the following alternative left navigation menus. From the participants' comments, there is a need for left navigation options both for navigation and orienting the participants to where they are in the Web portal.

**Exhibit D. Left Navigation Menu Alternatives**

| A | B | C |
|---|---|---|
| **Resources for Researchers**<br>Biological Materials<br>**Model Animals** | **Resources for Researchers**<br>Bioinformatics<br>Biological Materials<br>Translational Research Tools and Services<br>Partnerships and Technology Development | **Resources for Researchers**<br>Biological Materials<br>Cell, Tissue, and Organism Repositories<br>Model Animals<br>Reagents |

***Recommendations***

- Consider reevaluating the organization of the Translational Research subtopics and resources by using the scientific processes of preclinical and clinical research to categorize resources within the research areas of vaccines, diagnostics, and therapeutics. Internal NIAID translational researchers and program officers might be able to provide some insights.

- Consider evaluating content in the *Resources for Researchers* Web portal to ensure that up-to-date and relevant information is presented on the NIAID website.
- Consider using the same link text in the left navigation menu as the link text in the content to ensure consistency.
- Consider using a left navigation menu for all pages in the Web portal to either return to previous pages or to drill down deeper into the subtopic area.

# SPECIFIC FINDINGS

## Task 1: Evaluating the *Resources for Researchers* Main Page

The purpose of Task 1 was to elicit feedback from participants about the organization and navigation options on the *Resources for Researchers* main page. Two different layouts were reviewed: a main page with expandable lists and a main page with a dashboard style. The Expandable Lists layout shows the four main topic areas—Bioinformatics, Biological Materials, Translational Research Tools and Services, and Partnerships and Technology Development—with subtopics listed beneath each main topic as an expandable list of links. The Dashboard layout shows the four main topic areas with related subtopic links listed in four boxes. Throughout the report, these layout options will be referred to as the Expandable Lists page and the Dashboard page, respectively.

Participants were shown the Expandable Lists format first, then the Dashboard format. This was done so the more complex Expandable Lists page would be judged without prejudice by the participants in case they had visited the NIAID Resources for Researchers Web section previously. The following findings are specific to either the Expandable Lists or the Dashboard main page layouts.

### Expandable Lists Main Page

The first impressions of the Expandable Lists main page were quite favorable. Five participants generally liked the structure of the content and indicated that the content would be useful in their work.

> *"These are all things that I work on . . . just from looking at this page I believe that this actually looks good. I'd be interested to look in more detail what's behind all these buttons here."*

> *"I like that it's in somewhat of an outlined format instead of just having section headings when you have to click and go into another page to get to the subtopic headings."*

Almost all of the participants liked the organization of the content on the page, the four main topics showing available subtopics and corresponding links as expandable lists.

It was clear to most of the participants that the four main topics and corresponding pictures listed at the top of the page served as links to the location of the sections on the Web page. There were mixed feelings on whether or not this feature was useful.

> *"I guess that's if I wanted to go straight to those particular items, I could just click on it here. It's not extremely necessary, because I could just scroll down and look at them but it might facilitate the process of going directly to where I want to go."*

> *"If I went to this Web page in a hurry and only saw [the topics] at the top I might not look to the bottom for something else. Seeing the four [topics] across lets me know there is other stuff at the bottom of the page to go look for."*

> *"Not very useful. I mean, actually it wasn't apparent to me immediately that these were the shortcuts that would take me down to each one of these different sections."*

One participant commented that the picture of the mosquito did not seem appropriate to be used for *Biological Materials* since there mosquitos are not a resource that NIAID offers.

It was clear to all of the participants that each of the subtopics in gray bars could be expanded to view the links available. Most of the participants liked the expandable list feature, explaining that it allowed them to see all of the possible content areas to explore on one page.

> *"I like that it starts out as an outline format for all the main topics and then you can go deeper based on your specific interest instead of having a different page for each of these main topics."*

> *"It allows them to have a lot of topics, but efficiently organized into related groups so you don't have to scroll down all the way to see the big subject topics."*

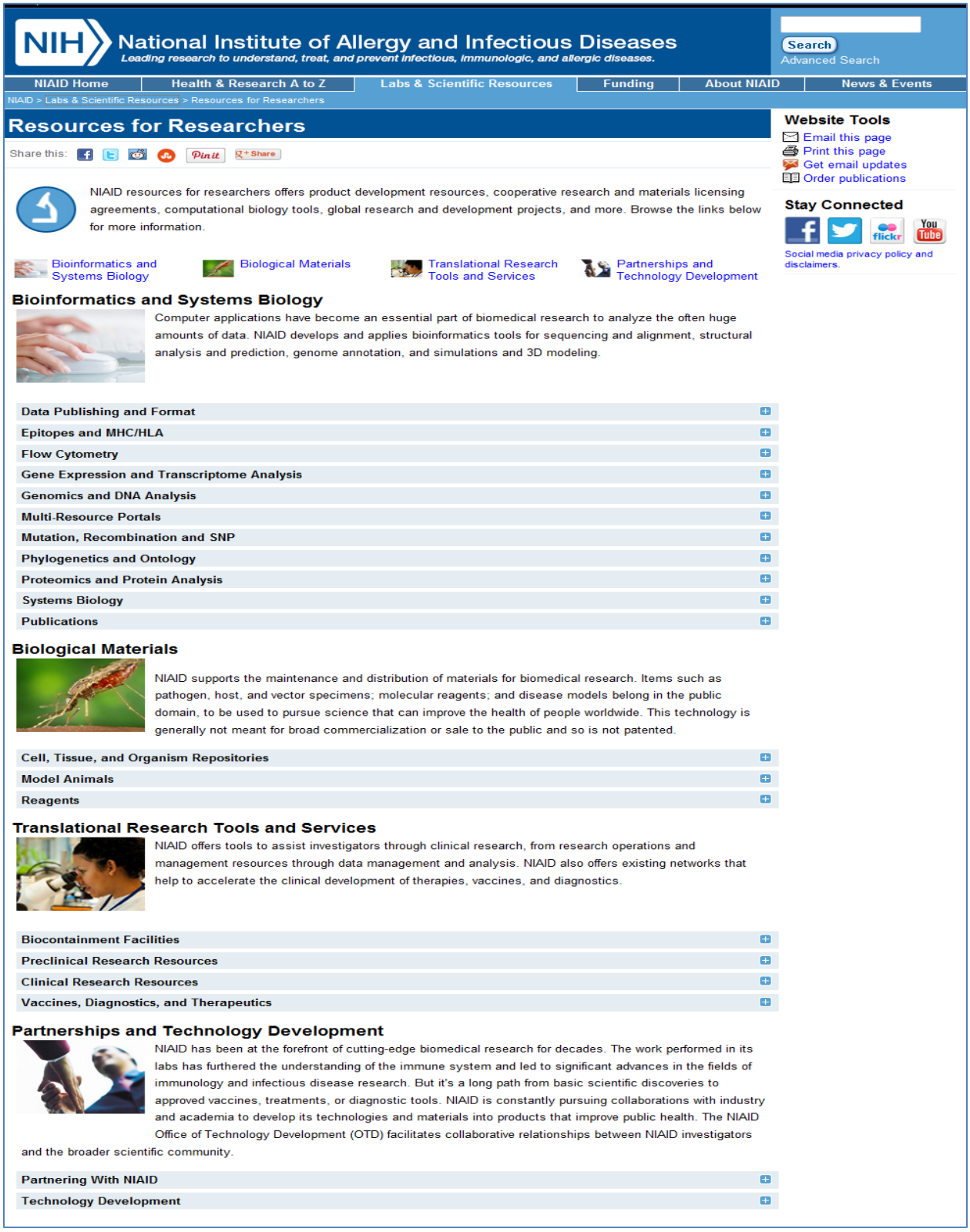
Two participants found it burdensome to have to scroll down the page to see all of the content.

> *"I don't like the layout of this page because I have to scroll down . . . once you don't see the whole page immediately, it gets a little confusing."*

> *"To go to [the] subheadings you have to scroll all the way down. [It] might be more equitable if you could have [4 columns across the top, with each column having the corresponding subtopics under each]"*

There were a few suggestions for improvements. One participant suggested enlarging the size of the plus and minus sign on the gray bars to draw more attention to the fact that they are expandable. Another participant recommended adding an "Expand All" feature. He explained that he uses the Find function [Control+F]. He explained further that this search strategy would not work with this layout unless all of the lists were expanded.

**Exhibit E. *Resources for Researchers* Main Page With Expandable Lists**



## Dashboard Main Page

Most of the participants liked the Dashboard layout of the main page because it allowed them to see what was available in the Web portal at a glance, without scrolling down the page. As one participant states below, it allowed them to identify their area of interest quickly.

> *"I like that you have the four main topics all in equal places on the page where they share it. You can see where what you are interested in and then go on in more detail."*

> *"This is kind of more what I had in mind. I like this more. I like this better because without having to scroll, I can see everything."*

Consistent with their comments from their review of the Expandable Lists layout, the participants thought the four topic areas displayed on the Dashboard page listing subtopics links were valuable resources. When asked if anything was missing, a couple participants indicated that this presentation was quite sufficient.

> *"Those topics are good I believe those are relevant things that are of interest to me…overall the categories here are useful and make biological and scientific sense."*

However, as was mentioned in General Findings, and also other comments on from other Tasks, participants had some confusion about the organization of *Translational Research Tools and Services.*

> *"I was looking for [preclinical toxicity]. I did not find it. It might be a resource that's not offered. That's why I was saying depending upon what I was looking for, if I was looking for vaccines, but within that if I want preclinical toxicity as it relates to vaccines I don't know if it's there, or in Model Animals or in Partnerships."*

Participants made the same assessment for both layouts: that most links provided sufficient information that described the information found on the corresponding pages, although at least one or two links were vague. Two participants found the "Technology Development" link confusing. In Round 1, there were a number of comments made about the *Partnerships and Technology Development* Web section. Selected Round 1 findings related to *Partnerships and Technology Development* and *Translational Research Tools and Services* follow this report.

> *"Technology Development seems a little vague to me. The other ones all seem pretty self-explanatory."*

One participant did express surprise that there was not a strong focus on infectious disease and allergy research resources.

> *"If I wanted to have a genomics or DNA analysis resource, I would never go to NIAID website. I'd go to National Genome Research; they have much better things. So why is there no focus here on infectious disease allergy and immunodeficiencies and stuff like that?"*

**Exhibit F. *Resources for Researchers* Main Page With Dashboard Layout**


## Direct Comparisons of the Expandable Lists and the Dashboard Pages

Four of the six participants preferred the Dashboard main page layout to that of the Expandable Lists. However, the two participants who preferred the Expandable Lists layout noted that whereas the three main topic areas' entire lists of subtopics could be viewed in the Dashboard layout, many of the Bioinformatics subtopics were hidden in that layout. Two common elements—the introductory paragraph and microscope navigational icon—garnered feedback that was not specific to either page layout.

### *Introductory Paragraph*

Participants found the introductory paragraph did not provide any additional information to what they were able to ascertain from the main topic areas and related subtopics. Most of the participants did not think the paragraph adequately communicated the availability of resources; for example, who may use these resources, are the resources discounted, or what relationship NIAID has with the non-NIAID resources.

> *"It's not clear to me, if I have a funded grant, can I contact the NIH and get access to these resources or is access to the resources a competitive process or does NIH have to be specifically interested in your research [for you] to get access?"*

The order in which the available resources were placed in the introductory paragraph did not emphasize what the participants thought was most important.

> *"Why [would] you choose this order? I think the emphasis should be put initially on research, and then the product development and material license agreement. It's almost like they initially focus on the fourth bullet, which is partnership and technology development, and then nothing on the three others."*

### *Microscope Navigation Icon*

Participants expressed a lack of clarity about the function of the icon. The use of the stylized microscope as a navigational element proved to be quite problematic. Half of the participants noticed the icon without it being pointed out, but none of the participants thought that the icon was clickable. A few participants commented that if they hadn't been asked about a "microscope" they wouldn't have recognized that the symbol was a microscope.

> *"No, it would have never occurred to me [to] actually to click on it. . . . There's certain things on websites that look like hyperlinks and others don't, and that didn't look like one to me."*

> *"This illustration [the microscope]—what is it supposed to tell us? When I see it—a microscope—in some way it sends me the message that this is the search feature of the page. With a microscope, you actually get into the details."*

> *"Yeah, it wasn't clear to me that it was clickable. I would have to hover over it with the mouse and see that little hand. So maybe you can just write within that little circle in some way, 'click here' or 'click to search' or something like that."*

### *Other Comparison Findings*

Four participants preferred the Dashboard page style over the Expandable Lists style. When comparing the two page layouts, the overarching consensus was that participants liked being able to quickly ascertain the information of the Web portal on one page without scrolling down the Web page.

> *"The differences here are . . . I didn't know from this page [Expandable Lists page] how many main categories are available at all which requires more scrolling and looking at it. Here [Dashboard page] the four categories are [immediately] obvious and it's easier to get an impression what the main components are."*

> *"Whereas for this one [Dashboard page] they are all there on one page and I can survey that page without . . . having to do extra mouse work."*

The two participants who favored the Expandable Lists page seemed to prefer having access to all the resources at once, without having to go to another the page that listed the resources.

> *"It's faster for me to open this and see I don't have to go back and forth, and I'd already have all the information."*

> *"I can actually explore these different things without leaving the page. I like that feature."*

A couple of the participants acknowledged that the Dashboard page required more clicks to get to the content. However, from the general comments made, it can be inferred that the researchers' need to quickly determine which information is available and decide where to go next superseded the extra click. One participant who preferred the Dashboard page suggested adding either a drop-down menu or a "little plus" (indicating an expandable list) next to each of the four main topics.

> *"If I just want to explore this Web page, I don't want to actually leave this page, I just want to see what is under here and what is under here . . . I'm clicking "View All" and that also takes you to another page. I think . . . a drop-down menu would be better. I don't want to leave this page necessarily to see all the different submenus."*

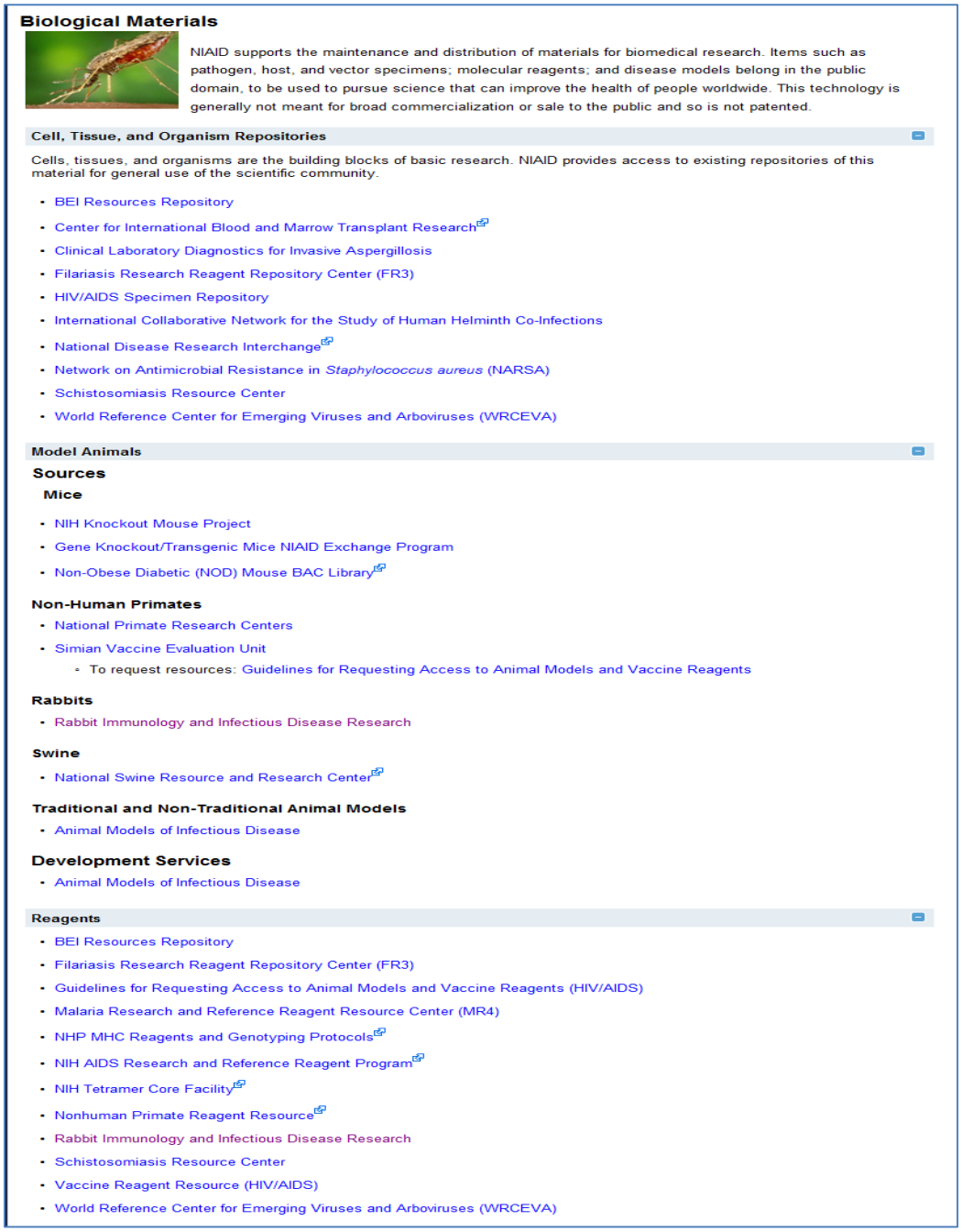
***Recommendations***

- Consider keeping the Dashboard page style of the main page.
- Consider replacing the microscope navigation button with a more generic button, such as a house or an arrow, with text indicating that when clicked, the visitor will return to the *Resources for Researchers* main page.
- Consider rewording the introductory paragraph to first introduce the direct research resources (e.g., Biological Materials) and then introduce the secondary resources (e.g., product development resources).
- Consider changing the *Technology Development* link name to "Technology Transfer" or other more informative label, or add additional subtopic links to make it clear what information is available in that Web section.
- Consider adding an "Expand All" option to any page with expandable lists.
- Consider enlarging the size of the plus and minus sign to make it clearer that the gray bars are expandable lists.

# Task 2: Review of the *Biological Materials* Section

The purpose of Task 2 was to garner feedback regarding the organization of links on the *Biological Materials* section of the *Resources for Researchers* main page using the Expandable Lists layout as the starting point. Participants examined the three sections under *Biological Materials:* Cell, Tissue, and Organism Repositories; Reagents; and Model Animals.

**Exhibit G. Resources for Researchers Main Page: *Biological Materials* Topic Lists Expanded**



Participants reviewed all the links and their organization listed under the three *Biological Materials* subtopics, beginning with: "Cell, Tissue, and Organism Repositories," "Reagents," finishing with "Model Animals."

## Cell, Tissue, and Organism Repositories

In general, the participants found the list of resources to be comprehensive and useful for researchers. There were two resources in particular that half of the participants had trouble understanding. The BEI Resources Repository and the National Disease Research Interchange were not as easy to understand as the other resources.

> *"I have no idea what BEI is. I don't know what it is. I would have to open that up to figure that out."*

> *"The only one that seems not so self-explanatory to me is National Disease Research Interchange. And actually, BEI Resources Repository is less obvious to me."*

Most participants felt the alphabetic organization of resources was sufficient, with the caveat that the list of links was short enough that the alphabetical organization did not hinder reviewing the resource links available. A few recommended that organizing by types of resources would be helpful.

> *"Alphabetically doesn't really help. If it could be broken down by pathogen-specific resources and general resources; that would be helpful."*

## Reagents

When reviewing the Reagents resources, it was clear to the participants that some of the links that appeared in the Cell, Tissue, and Organism Repositories also appeared with the Reagents resources. With the exception of one participant, repetition of resources was strongly endorsed. The general feeling seemed to be that if the resource was applicable in more than one place, it should appear in both places.

> *"I totally don't [mind the repetition]. If you would drill down along these lines, I would rather find something in both places than not [find it]."*

> *"I would repeat them. . . . You want to give the users every opportunity to find that link. . . . I think it should be repeated wherever it appropriately falls."*

Participants made the following suggestions regarding organization of the links:

- Improve the search function: If a participant was searching for reagents (either on Google or within the NIAID website), they would be directed to this page.
- Reorganize the resources by disease topic.

- Reorganize the naming structure of the hyperlinks: The key words related to the disease should appear first, using the NIH AIDS Research and Reference Reagent Program as an example:

  *"Maybe these that start with NIH, put the core facility and then in parenthesis, NIH. For AIDS Research and Reference Reagent Program, [move] "AIDS" so it is the first word in the sentence, because if I look for AIDS reagents, I would think AIDS. I would look [at the top of the list]."*

***Recommendations***

- Consider reorganizing the resources by pathogen specific resources and general resources.
- Consider reorganizing the naming structure of the hyperlinks, so the key words appear first. For example:

  **Current:** NIH AIDS Research and Reference Reagent Program
  **Proposed:** AIDS Research and Reference Reagent Program (NIH)

- Enhance Search Engine Optimization so a Google or an intra-NIAID web site search would direct users to this page.

## Model Animals

Participants liked the use of subheadings throughout the Model Animals resources list. The Traditional and Non-Traditional Animal Models category created confusion for a few participants. Whereas one was unclear whether that was where he would find mosquito resources, the other thought that the heading did not accurately reflect scientific resources.

*"A traditional model would be a mouse, so a non-traditional would be what? I don't know why these [Animal Models of Infectious Disease] are part of mouse. . . . This one [Traditional and Non-Traditional Animal Models] is what really makes no sense."*

***Recommendations***

- Consider moving the Development Services above the Sources so the subhead and link are not lost following the list of Sources links.
- Consider removing the Traditional and Non-Traditional Animal Models subheading.
- Consider reorganizing the resources by pathogen-specific resources and general resources.
- Consider reorganizing the naming structure of the hyperlinks, so the key words appear first. For example:

  **Current:** NIH AIDS Research and Reference Reagent Program

  **Proposed:** AIDS Research and Reference Reagent Program (NIH)

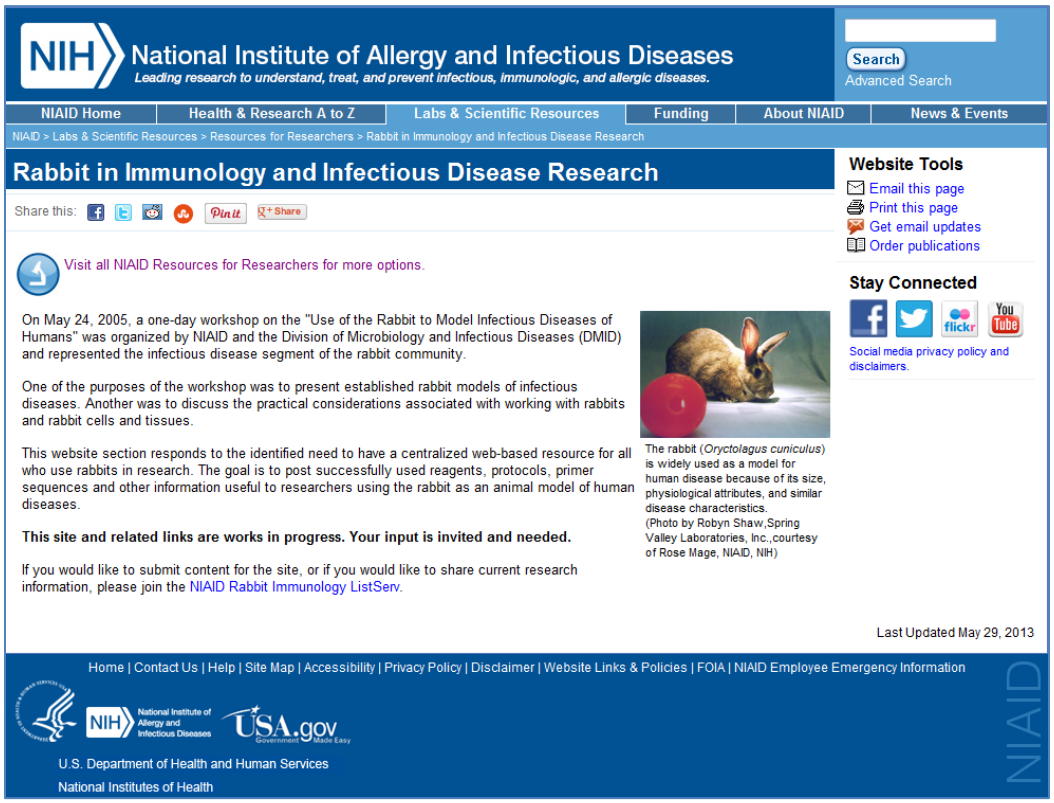
# Task 3: *Rabbit Immunology and Infectious Disease* Page Review

For Task 3, participants reviewed the *Rabbit in Immunology and Infectious Disease Research* page (Exhibit H), focusing on the page content and navigation options.

## Rabbit Immunology and Infectious Disease Research Page

When looking at the expanded *Biological Materials* topic list (Exhibit G, above), all participants correctly identified the location of the *Rabbit in Immunology and Infectious Disease Research* link listed under the *Model Animals* category.

**Exhibit H. Rabbit Immunology and Infectious Disease Research Page**




When reviewing the *Rabbit in Immunology and Infectious Disease Research* page, participants were distracted by the content of the page, which offered only a listserv as a resource. As a result, none of the participants found the page helpful and they were disappointed in the lack of resources. A few suggested that the page should be removed altogether until more resources can be offered to help researchers.

> *"Okay, so there's no repository. So there are basically no resources for that yet. I mean, I can't order my rabbit from this page. . . . I think that's kind of misleading because I want biological materials. I want some rabbits and I go here, and there are no rabbits."*

> *"To some extent, I don't know the value of putting things on your website that are still in progress. If you see that there's not much movement after a year, I think you should remove it because then it's almost like misinformation."*

The main purpose of including this page in the protocol was to test a single pivotal navigational link back to the main *Resources for Researchers* page. When participants were instructed to navigate away from the *Rabbit in Immunology and Infectious Disease Research* page to other pages within the *Resources for Researchers* section, they recognized that they would first have to return to the *Resources for Researchers* main page. Participants used either the link next to the microscope icon or the breadcrumbs at the top of the page.

At this point, participants were shown the potential options for the left navigation menu (Exhibit I) to determine whether they preferred more navigational choices.

**Exhibit I. Left Navigation Menu Alternatives**

| A | B | C |
|---|---|---|
| **Resources for Researchers**<br>Biological Materials<br>Model Animals | **Resources for Researchers**<br>Bioinformatics<br>Biological Materials<br>Translational Research Tools and Services<br>Partnerships and Technology Development | **Resources for Researchers**<br>Biological Materials<br>Cell, Tissue, and Organism Repositories<br>Model Animals<br>Reagents |

Participants' preferences for the left navigation menu varied. Two participants favored option C, two other participants preferred a combination of options B and C, and two participants wanted the left navigation menu to be blank.

### *Option C*

The participants who preferred option C liked being able to see the specific subtopics within the overall major topic area. They wanted a way to easily navigate back to the page that they came from previously.

### *Options B and C*

The participants who preferred this option both stated that they would like option B to be an expandable list that users could click on to see the specific subtopics listed in option C. This way, users would be able to navigate to specific subtopics within each of the four main categories without being overwhelmed by all the subtopics.

### *No Navigation*

The participants who preferred to keep the navigation blank thought that having more links on the left side was distracting and made the page more complex. They believed the links in the left navigation were unnecessary and took attention away from the important content. These participants preferred using the back button or bread crumbs to find the information they were interested in.

Half the participants were fine with taking the extra step of navigating to the *Resources for Researchers* main page to get to the topic they were looking for, whereas the other half stated that they would have preferred a more direct path.

Four of the six participants liked having additional navigation choices in the left menu. These participants all favored option C because they appreciated the convenience of being able to immediately return to the page they were on previously. They also liked being able to explore different subtopics of interest within the overall major topic area.

***Recommendations***

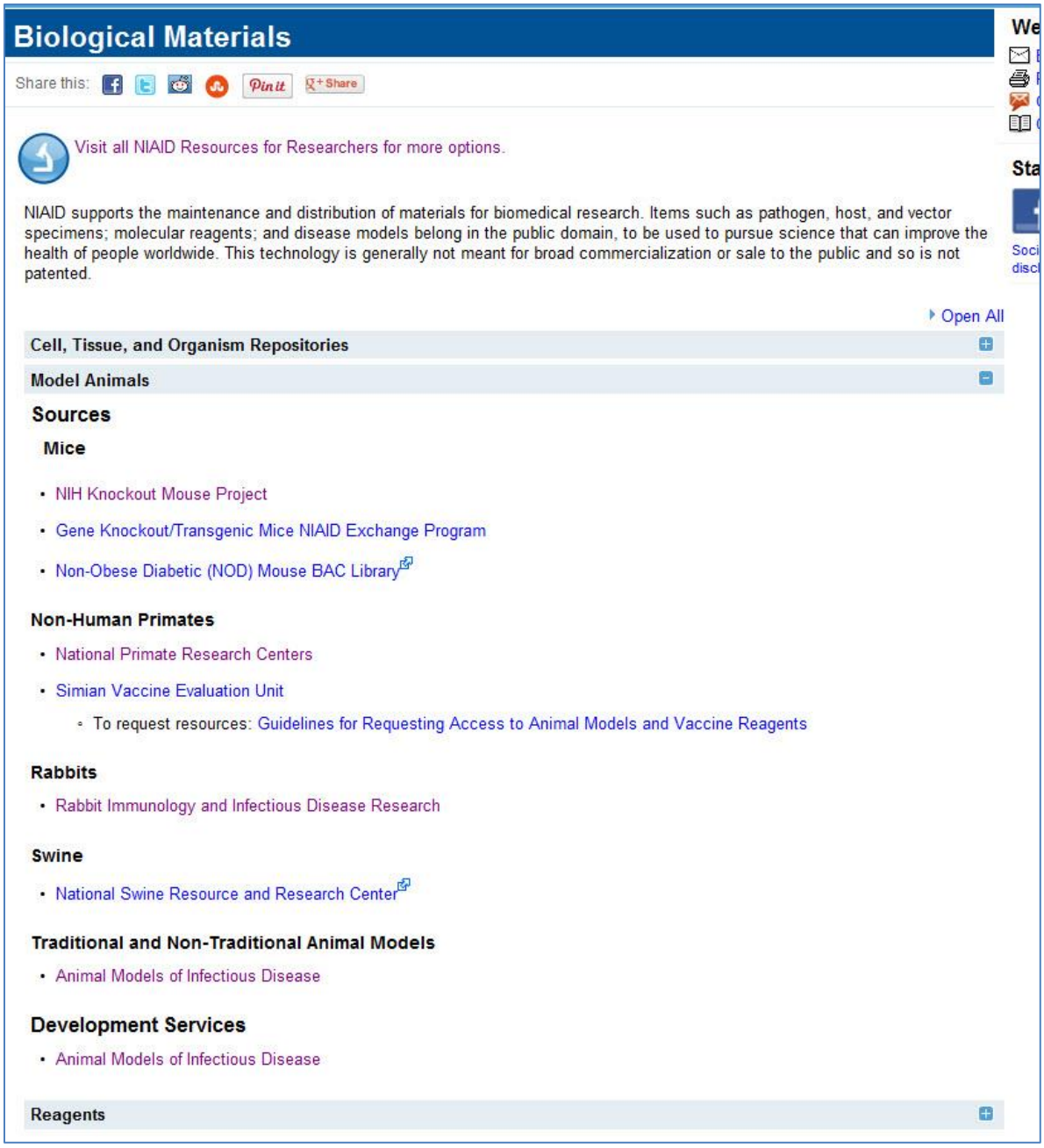
- Consider removing the *Rabbit in Immunology and Infectious Disease Research* page, unless there are rabbit model resources available.
- Consider combining left navigation menu options B and C from Exhibit I so that the four main categories are listed as expandable lists with specific subtopics under each. Although this is the optimal combination, if it is not possible to add expandable lists to the left navigation menu, consider using Option C because most of the participants favored this organization.

# Task 4: *Animal Models for Infectious Disease* Page Review

For Task 4, participants were asked to find and review the *Animal Models for Infectious Disease Research* page, focusing on the content and navigation options, before reviewing the *Microbiology and Infectious Diseases Resources* page.

Starting from the Dashboard main page, most of the participants were able to correctly locate the link to the *Animal Models for Infectious Disease* page (Exhibit K) under the expanded *Model Animals* topic list (Exhibit J) found on the *Biological Materials* page.

**Exhibit J. *Biological Materials* Page With Expanded *Model Animals* Topic List**



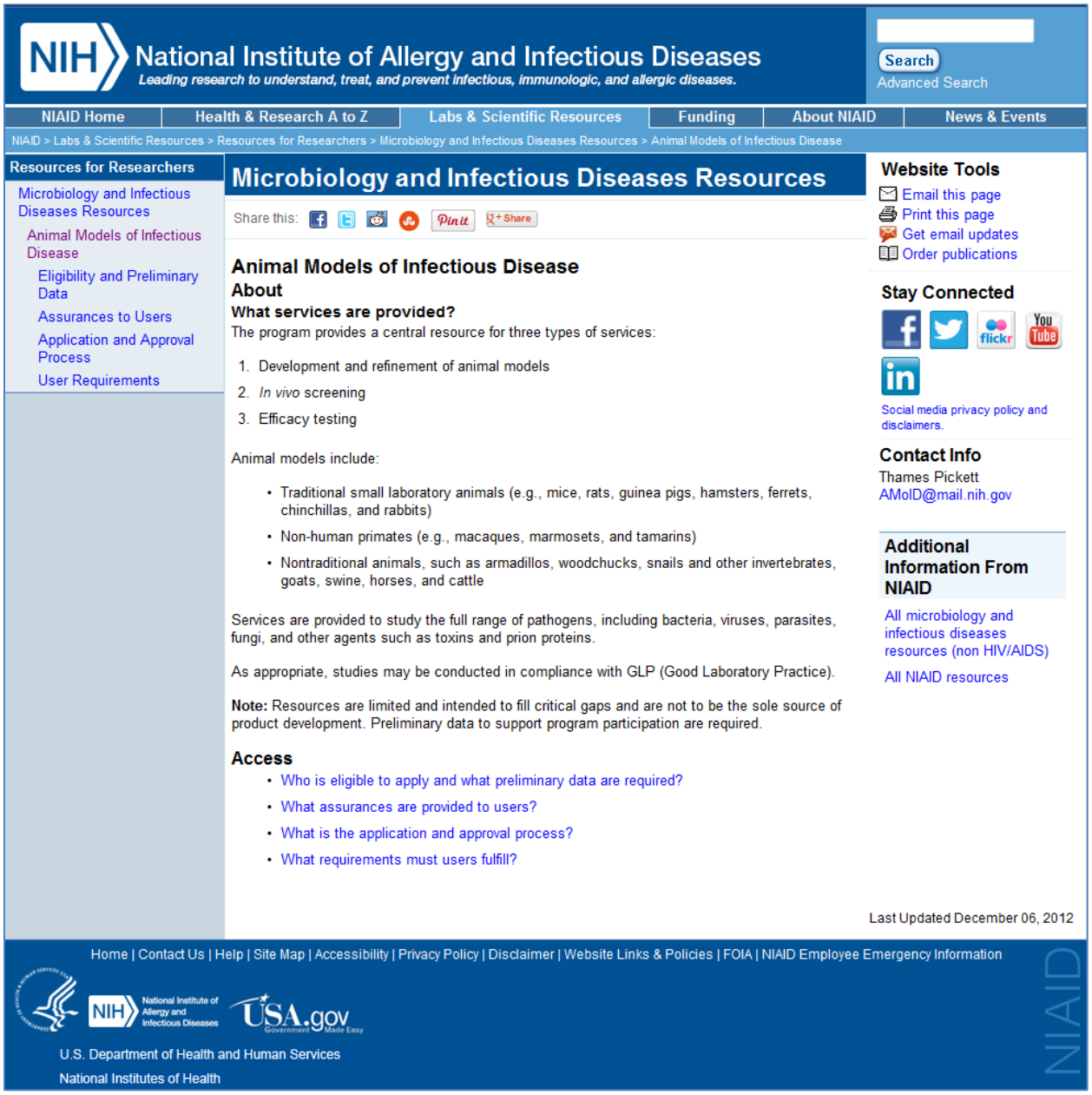
## Animal Models of Infectious Disease Page

Overall, participants liked the content on the *Animal Models of Infectious Disease* page and found the information useful.

> *"If I were in a position that I needed animal models for infectious disease, this sort of information would be helpful."*

> *"I like that it starts with a general list of three bullet points of areas of animal models services and gives you more information as you go down. . . . I like the information that's provided."*

**Exhibit K. Animal Models of Infectious Disease Page**



A few participants suggested that more information should be included about the process for accessing services. One participant recommended listing the contact information for DMID Product Development Specialists on the *Model Animals for Infectious Diseases* page. Another participant suggested clarifying the stages of development for animal models that are available.

> *"Bullet point one says that services provided would include development and refinement of models, but it doesn't jump out like how you would find out which models are established versus which ones are in development versus which ones you would have to request to initiate development."*

When reviewing the links in the left navigation menu, most participants found it beneficial to have the same four links listed in both the left navigation menu and the center of the page, because it provided another option for finding additional information.

> *"I think it's helpful because some people might actually miss [the left navigation links] up here. They're focusing on [the center of the page] and they kind of just read through, so I think it doesn't hurt to have them [in the center of the page] too."*

All the participants had difficulty navigating back to the *Model Animals* list on the *Biological Materials* page. Most of them tried clicking on the previous page listed in the breadcrumbs, which is *Microbiology and Infectious Disease Resources*, and then realized that they were on the wrong page. Eventually, participants understood that they had to go back to the *Resources for Researchers* main page and click on *Model Animals/Organisms* link.

***Recommendations***

- Consider adding links to additional information and/or staff contacts for each of the three types of services listed at the top of the page.
- Consider adding navigation links to the left navigation menu, as shown in Option C or a combination of Options B and C in the Alternate Left Navigation Menus in Exhibit I, Task 3.
- Consider changing the structure of the breadcrumbs so that users can easily return to the previous page they came from. For example, on the *Model Animals of Infectious Disease* page, the breadcrumbs should read "NIAID > Labs and Scientific Resources > Resources for Researchers > Biological Materials."

## Microbiology and Infectious Diseases Resources Page

In the left navigational menu on the *Animal Models of Infectious Disease* page, the link to the *Microbiology and Infectious Diseases Resources* page (Exhibit L) appears for the first time. Before navigating to the *Microbiology and Infectious Diseases Resources* page, participants did not know what to expect because the link did not appear to be related to the *Resources for Researchers* section.

**Exhibit L. Microbiology and Infectious Diseases Resources Page**


Participants were confused by this page for several reasons. They were surprised that they had not seen a link to this page prior to visiting the *Animal Models of Infectious Disease* page. They did not understand the purpose of the page in relation to the overall Web section, although participants understood this page was located in the *Resources for Researchers* section. Also, they were unsure whether these resources appeared elsewhere in the Web section.

> *"When I go to the Resources for Researchers page, it looks to me like it's intended to be a comprehensive page that leads you into any resources that you would want to tap into. Now seeing this page, I would just want to make sure that everything on this list was there."*

Most participants commented that the information seemed to be unrelated to the content they had looked at previously and that the page raised additional questions.

> *"This page here doesn't really fit into what we looked at before. . . . It's hard to make sense of it from a targeted searching approach."*

> *"It isn't obvious to me where this fits into the other Resources for Researchers."*

> *"I would get rid of this page. This is a completely different organization of the whole content. To link it to the other pages [in the Resources for Researchers section] is a little confusing."*

The majority of participants also felt that the content on this page seemed out of place, because most visitors come to the *Resources for Researchers* Web section looking for scientific research resources beyond funding opportunities. Participants thought a more appropriate place for this information would be the *Funding* Web section.

> *"I'm really confused here, because we've been looking at the resources, and up to now, we've been defining resources as reagents, materials, facilities, etc., and now it's funding. That's not really something I expected. Now, we are in a very different chapter of the whole process."*

> *"This stuff here mostly talks about funding, so it's not really related to the resources. From my perspective, this would be more logically positioned somewhere in the funding category."*

Participants were also unsure how the links in the left navigation were related to the main content in the middle of the page, stating that the left navigation menu listed scientific research resources whereas the page content was related to funding opportunities.

> *"[The items in the left navigation menu] are the types of resources I would expect to be in the main part of the page. To me, this page says funding opportunities and product development, so I'd expect those links on the left navigation."*

> *"They are very different. What's on the left is a very comprehensive list of all the different types of resources, and what's in the middle is funding resources."*

Participants commented that the list of links in the left navigation menu was too long, making it difficult to find what they were looking for. They stated they would prefer the list to be simplified to facilitate navigation.

> *"It's too much. All of [the links in the left navigation] should be more systematically organized by scientific categories."*

> *"[The links] are a little bit long. I don't know if it's possible to simplify it a bit or make them smaller."*

> *"[The left navigation menu] is so long the whole amount of structuring is gone. This is not a navigation menu. This is a list of resources."*

### *Recommendations*

- Consider evaluating the purpose of the Microbiology and Infectious Disease Resources page and where it fits within the overall Resources for Researchers Web section. This will help determine whether revisions should be made to reduce confusion or whether the page should be removed altogether. Important questions that should be answered in this evaluation include:
  - Is there a need to have a page that consolidates all DMID resources?
  - Does this page need to be linked more prominently from the main *Resources for Researchers* page?
  - How are the DMID resources used within the main topic areas, specifically *Biological Materials and Translational Research Tools and Services*?
- If it is decided that the Microbiology and Infectious Disease Resources page should remain on the website, consider moving the links in the left navigation menu to the center of the page and organizing them by topic.

# Task 5: *Translational Research Tools and Services* Section Review: *Genomic Sequencing Centers for Infectious Diseases* Page

The purpose of Task 5 was to gather feedback on content and navigation as the participant navigated to the *Genomic Sequencing Centers for Infectious Diseases* page. Starting from the Expandable Lists main page, the participant began with reviewing the *Translational Research Tools and Services* section, looking at the links, organization, and navigation options of the *Vaccines, Diagnostics,* and *Therapeutics* section. After this review, the participant proceeded to the *Genomic Sequencing Centers for Infectious Diseases* page.

However, after the first two interviews, participants were instructed to use the Dashboard style main page because the correct links to pages were only available through that page layout. This minor change did not seem to affect any of the responses.

## Translational Research Tools and Services Page

As was reported in the results from Round 1, the topics and organization of resources in the *Translational Research Tools and Services* section continued to be confusing to participants.

> *"I don't really know what to expect with this [biocontainment facilities] and I don't know what to expect with this [vaccine links]. I mean I would have an idea for vaccines but I don't know why those aren't within the other two, clinical and preclinical, specifically within the context of translational research."*

> *"Well, you mentioned genomics and that could be preclinical or clinical, or it could be related to vaccines. I would have thought of having genomics as a separate bulleted list."*

> *"I don't know why you have these [subtopics links] under vaccines, diagnostics, and therapeutics because they are really generic. They could be used for preclinical research, for clinical research, for vaccines. I mean, they are really generic."*

In Round 1, participants expressed that the term "translational research" and the subtopics listed were too broad or general. The following two quotes are from the Round 1 report.

> *"Translational research is such a broad area—it's not well-defined. I don't know if I would use that as a broad category to navigate. I know that in the NIH, depending on what area you are in, translational research can mean a lot of different things."*

> *"*Basic Research Resources. *I mean, that could mean anything. And then* Clinical and Preclinical Research Resources. *What's different between that and basic research, right? Basic versus preclinical. And then you've got* Vaccines, Diagnostics, and Therapeutics. *You wouldn't know where to look for what you wanted."*

Participants' comments implied that in listing resources, it would be more helpful if the links were organized by specific area of research, vaccines, diagnostics, or therapeutics, instead of by the stages of translational research.

> *"These bullet points are organized strangely. You see preclinical and you see clinical, so to me, those are just different stages of development . . . it's almost like you would want a*

*vaccine section and have preclinical and clinical resources for vaccines and then you'd want a diagnostic section and preclinical and clinical resources for those."*

*"I would expect to see [vaccines, diagnostics, and therapeutics] as subcategories [under the vaccines, diagnostics, and therapeutics header] because there's nothing on these lists that tells me if I'm really interested in diagnostics, which of these things would I want to go to."*

*"I'm not understanding how [the subtopics] relate to being under vaccines, diagnostics, and therapeutics. That's what I'm missing. These all look like interesting things, but all this Omics stuff; I would have thought that would fall under Bioinformatics."*

Participants felt there were some resources missing, such as information on current trials or specific resources, as described in the quotes below.

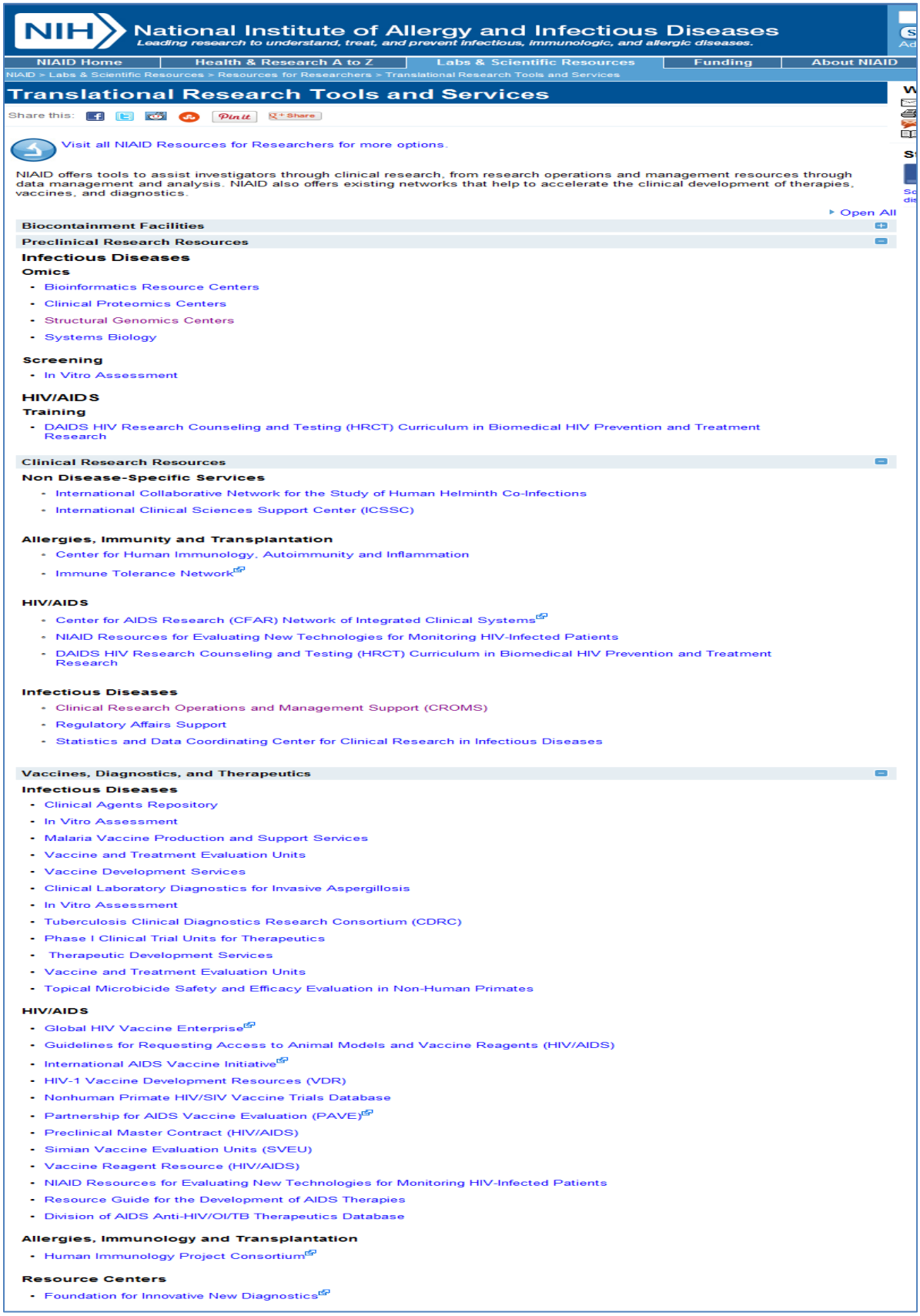
*"Something about clinical trials . . . that's what I would expect in translational research or a list of ongoing trials currently being supported by NIAID."*

*"It doesn't have any information on precise projects. . . . If I wanted to conduct a study in infectious diseases, I might find something here that might help me to do this, but it doesn't have a comprehensive list of ongoing activities, which is something that is helpful to me [that] could be added."*

*"I know there's the hepatitis vaccine evaluation unit around the U.S. I mean, I don't find it. That's surprising; unless it's under clinical research, which I already looked at. So where do you find VEUs [vaccine evaluation units]? NIAID has those vaccine evaluation units across the U.S. How come there aren't none here?"*

Other suggestions made by a couple of participants were that resources should be listed alphabetically, and under Preclinical Research Resources, add "In Vivo Assessment" with "In Vitro Assessment" under the Screening subheading.

**Exhibit M. Translational Research Tools and Services Expandable Lists Main Page**



NIH National Institute of Allergy and Infectious Diseases
*Leading research to understand, treat, and prevent infectious, immunologic, and allergic diseases.*

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NIAID > Labs & Scientific Resources > Resources for Researchers > Translational Research Tools and Services

# Translational Research Tools and Services

Share this:

Visit all NIAID Resources for Researchers for more options.

NIAID offers tools to assist investigators through clinical research, from research operations and management resources through data management and analysis. NIAID also offers existing networks that help to accelerate the clinical development of therapies, vaccines, and diagnostics.

Open All

## Biocontainment Facilities

## Preclinical Research Resources

### Infectious Diseases

#### Omics

- Bioinformatics Resource Centers
- Clinical Proteomics Centers
- Structural Genomics Centers
- Systems Biology

#### Screening

- In Vitro Assessment

### HIV/AIDS

#### Training

- DAIDS HIV Research Counseling and Testing (HRCT) Curriculum in Biomedical HIV Prevention and Treatment Research

## Clinical Research Resources

#### Non Disease-Specific Services

- International Collaborative Network for the Study of Human Helminth Co-Infections
- International Clinical Sciences Support Center (ICSSC)

#### Allergies, Immunity and Transplantation

- Center for Human Immunology, Autoimmunity and Inflammation
- Immune Tolerance Network

#### HIV/AIDS

- Center for AIDS Research (CFAR) Network of Integrated Clinical Systems
- NIAID Resources for Evaluating New Technologies for Monitoring HIV-Infected Patients
- DAIDS HIV Research Counseling and Testing (HRCT) Curriculum in Biomedical HIV Prevention and Treatment Research

#### Infectious Diseases

- Clinical Research Operations and Management Support (CROMS)
- Regulatory Affairs Support
- Statistics and Data Coordinating Center for Clinical Research in Infectious Diseases

## Vaccines, Diagnostics, and Therapeutics

#### Infectious Diseases

- Clinical Agents Repository
- In Vitro Assessment
- Malaria Vaccine Production and Support Services
- Vaccine and Treatment Evaluation Units
- Vaccine Development Services
- Clinical Laboratory Diagnostics for Invasive Aspergillosis
- In Vitro Assessment
- Tuberculosis Clinical Diagnostics Research Consortium (CDRC)
- Phase I Clinical Trial Units for Therapeutics
- Therapeutic Development Services
- Vaccine and Treatment Evaluation Units
- Topical Microbicide Safety and Efficacy Evaluation in Non-Human Primates

#### HIV/AIDS

- Global HIV Vaccine Enterprise
- Guidelines for Requesting Access to Animal Models and Vaccine Reagents (HIV/AIDS)
- International AIDS Vaccine Initiative
- HIV-1 Vaccine Development Resources (VDR)
- Nonhuman Primate HIV/SIV Vaccine Trials Database
- Partnership for AIDS Vaccine Evaluation (PAVE)
- Preclinical Master Contract (HIV/AIDS)
- Simian Vaccine Evaluation Units (SVEU)
- Vaccine Reagent Resource (HIV/AIDS)
- NIAID Resources for Evaluating New Technologies for Monitoring HIV-Infected Patients
- Resource Guide for the Development of AIDS Therapies
- Division of AIDS Anti-HIV/OI/TB Therapeutics Database

#### Allergies, Immunology and Transplantation

- Human Immunology Project Consortium

#### Resource Centers

- Foundation for Innovative New Diagnostics

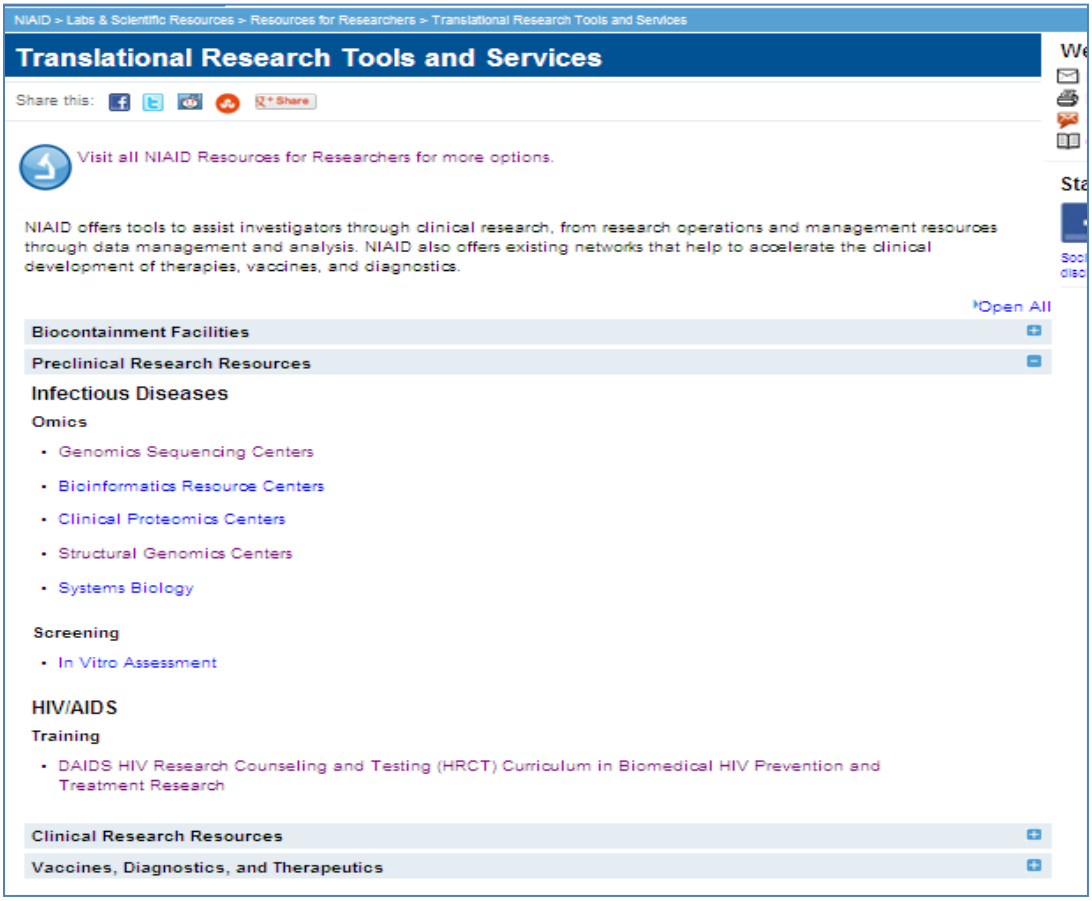
Some participants shared a strong reaction to the organization and naming of the subheadings for "Infectious Diseases" and "HIV/AIDS," which they felt implied that HIV/AIDS is not an infectious disease.

> *"Well apparently HIV is a noninfectious disease which has got to be interesting for infected people to hear . . . HIV/AIDS is not an infectious disease, which is completely wrong. So this should be Non-HIV/AIDS Infectious Diseases and HIV/AIDS."*

> *"Obviously HIV is an infectious disease . . . as researchers, [we] are used to seeing things listed as HIV/AIDS or Non HIV/AIDS."*

**Exhibit N. Translational Research Tools and Services Page With "Vaccines, Diagnostics, and Therapeutics" List Expanded**

**Exhibit O. Translational Research Tools and Services Page With "Preclinical Research Resources" List Expanded**




***Recommendations***

- Consider organizing Vaccines, Diagnostics, and Therapeutics as separate subtopics, instead of Biocontainment Facilities, Preclinical, and Clinical Research Resources.
- Consider organizing Infectious Diseases, Preclinical and Clinical Research Resources as separate categories under each of the Vaccines, Diagnostics, and Therapeutics subtopics.
- Consider moving Biocontainment Facilities to another main topic area, or create a general Clinical Research page listing standards and policies with Biocontainment Facilities listed.
- Consider adding a link to ongoing NIAID clinical trials or Clinical Trials.gov. http://www.clinicaltrials.gov/ct2/home
- Consider changing the headings to read "HIV/AIDS" and "Non-HIV/AIDS Infectious Diseases."
- Consider adding a link to the *Vaccine Evaluation and Treatment Units* page. http://www.niaid.nih.gov/about/organization/dmid/clinical/vteu/Pages/default.aspx
- Consider adding add "In Vivo Assessment" with "In Vitro Assessment" under the Screening subhead under Preclinical Research Resources

## Genomic Sequencing Centers for Infectious Diseases Page

None of the participants was able to intuitively identify the subtopic (Preclinical Research Resources) and find the link to the *Genomics Sequencing Centers* page. After being told that their initial answer was incorrect, most participants reasoned aloud that the link to *Genomics Sequencing Centers* page is nested under Preclinical Research Resources. Two participants originally expected the link to be found on the *Bioinformatics and System Biology* page.

> *"I would think actually up here because here you have systems biology and bioinformatics and when I look here, I see Gene Expression and Transcriptome [Analysis], and Genomics and DNA [Analysis]."*

One of the participants emphasized that this link should be accessible in multiple locations.

> *"They could be under preclinical; they could be [under] clinical research. I just saw them under vaccines, and I mentioned to you that they should be generic. They should be all over . . . It's a resource that you're going to use to do your preclinical work, your clinical work, and doing your discovery work. Genomics is a technology. It should be cross-cutting."*

Participants liked the content and how it was organized on the page.

> *"The content tells you about the centers and access; that seems nice."*

> *"This [content in main body of page] makes sense to me. It's good to have a list of institutions that are involved and then these sorts of activities . . . information on how to use existing resources, and also to find ways how to publish data. And then the funding. This is all pretty good here."*

> *"This page looks pretty good. When I glanced through it, it looks like it would answer all the questions and there would be obvious paths to take, depending on what type of sequencing one was interested in."*

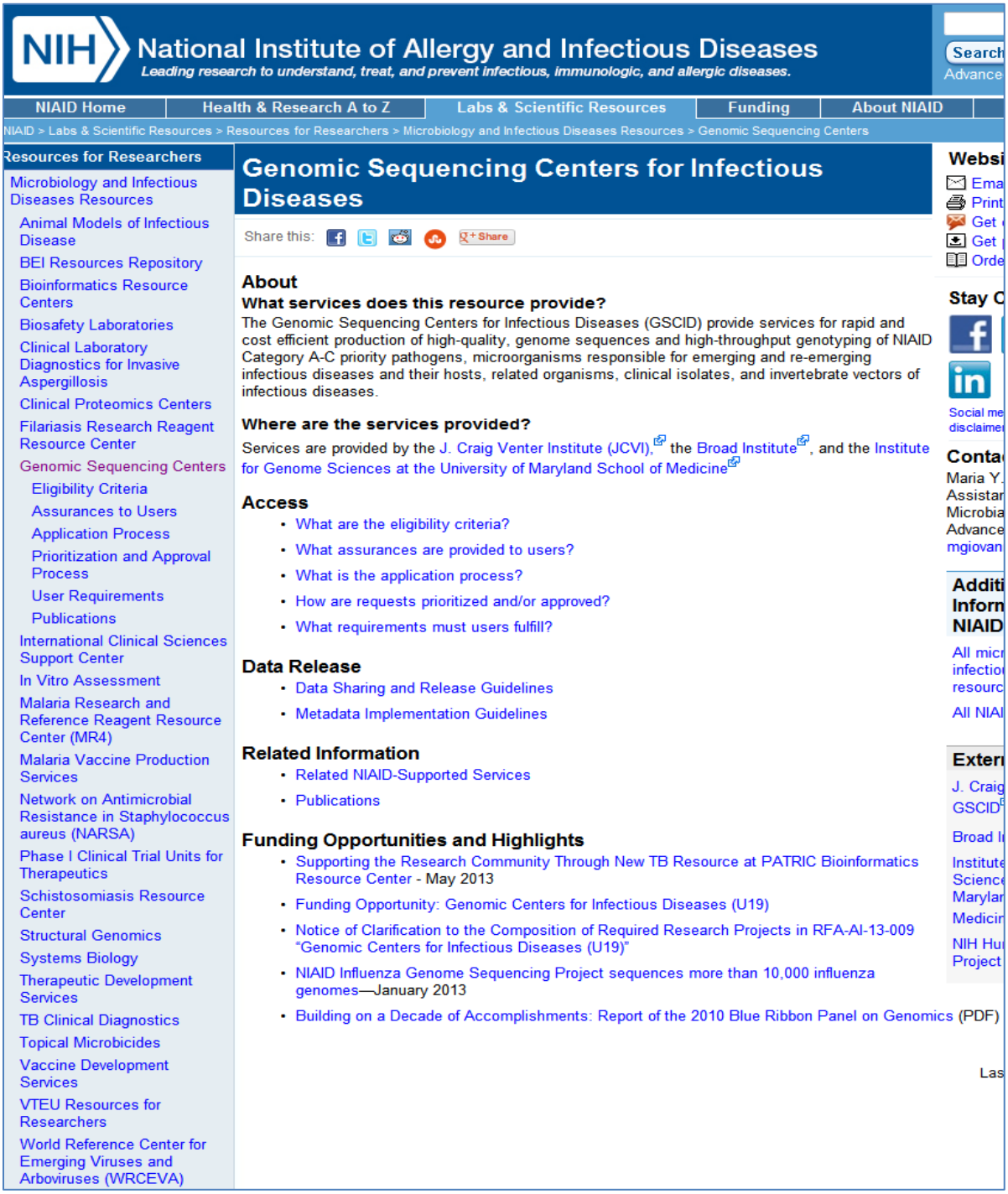
However, half the participants were overwhelmed by the number of links listed in the left navigation menu, echoing the feelings stated about the left navigation for the *Microbiology and Infectious Diseases Resources* page. But surprisingly, the participants did not mind the links that appeared in the content also appearing in the left navigation menu.

> *"I just think there's too much stuff here [left navigation menu] but that's just my personal opinion."*

> *"I still don't understand why sometimes when you go to a new page you have a long laundry list of groups on the left-hand column... It's confusing to me. It makes the Genomic Sequencing Center to be a high level item because of the huge [left navigation menu], but [the page] comes out several clicks in."*

When asked if they knew where this page was located in the NIAID website, all of the participants recognized that they were in the *Resources for Researchers* section. Navigating back to the *Translational Research Tools and Services* or main *Resources for Researchers* page was problematic; all the participants stated they would have to use the back button or bread crumbs.

**Exhibit P. Genomic Sequencing Centers for Infectious Diseases Page**



### *Recommendations*

- Consider adding a link to the Genomics Sequencing Centers in multiple places, such as Clinical Research; Vaccines, Therapeutics and Diagnostics; and Bioinformatics and Systems Biology.
- Consider using simpler left navigation menu, as shown in Option C or a combination of Options B and C in the Alternate Left Navigation Menus in Exhibit I, Task 3.

# Task 6: *Translational Research Tools and Services* Section Review: *DMID Clinical Research Policies, Guidance, and Tools* Page

For Task 6, participants reviewed the *Translational Research Tools and Services* page, beginning from the Dashboard main page. Participants identified organization and navigation issues along the way, and finished this task reviewing the *DMID Clinical Research Policies, Guidance and Tools* page.

## Translational Research Tools and Services Section

**Exhibit Q. *Resources for Researchers* Main Page With Dashboard**


## *Microbiology and Infectious Diseases Clinical Research Policies, Guidance, and Tools* Page

On the *Translational Research Tools and Services* page, participants clicked on the "Clinical Research Resources" expandable list in an effort to find the *Microbiology and Infectious Diseases Clinical Research Policies, Guidance, and Tools* link. However, half of the participants were unable to find this link. One of the participants stated that he only found the link because he was told the name of the link to look for, implying that if he were looking for this type of content on his own, it would have been more of a struggle to find the information.

> *"No, it's not that clear. Especially if I scroll and this one isn't visible anymore . . . it wasn't clear to me."*

Once participants arrived on the *Microbiology and Infectious Diseases Clinical Research Policies, Guidance, and Tools* page, they all liked the content on the page and how it was organized.

> *"It's a massive amount of information here again but it looks like it's all really related to this. The title is good at summarizing these things pretty well I would say. If I were interested in policies, guidance, and tools, all these things would be helpful."*

> *"They're in alphabetic order, with a little description here and the link there, so that's good."*

Almost all of the participants appreciated links from the page content repeated in the left-hand navigation menu. This is consistent with the finding for the *Animal Models for Infectious Disease Research* page.

> *"If I had already been here and I just want to quickly find [something, it's] easy to scan the left-hand side. If I was first reading [this content], I'd just read the center."*

> *"Yeah, I can see they are redundant. Whether I go and I click on the title in the left or in the middle, I will get more information. . . . Yeah, that's fair."*

**Exhibit R. Microbiology and Infectious Diseases Clinical Research Policies, Guidance, and Tools Page**


One participant noted that the text for the "Agreements" link in the left-hand navigation menu did not match the link text of "Agreements for Clinical Research" listed in the page's content.

> *"Yeah, in most cases, it's identical. I see that's good. I don't see why Agreements for Clinical Research couldn't be spelled out [in the left-hand navigation] too."*

It was clear to all participants that they were on a subpage of the *Resources for Researchers* section. While it was clear, a participant noticed it was a little harder to tell due to an inconsistency in the pages.

> *"Now you've left out the things that would have told me. I guess [it's] still Resources for Researchers but this is inconsistent. Previously there was something always up here [title above left-hand navigation menu]."*

Without any navigation links or the use of the back button, most participants would use breadcrumbs to return to either the *Preclinical and Clinical Research Resources* page or the *Resources for Researchers* page.

***Recommendations***

- Consider adding navigation links to the left navigation menu, as shown in Option C or a combination of Options B and C in the Alternate Left Navigation Menus in Exhibit I, Task 3.
- Consider shortening the name of the page title and link text of Microbiology and Infectious Diseases Clinical Research Policies, Guidance, and Tools.
- Consider using the same text for links, regardless of link location (page content or left navigation menu. Also, consider using the same text for the page title as the link text.

# SUMMARY OF ROUND 2 RECOMMENDATIONS

## GENERAL FINDINGS

- Consider reevaluating the organization of the Translational Research subtopics and resources by using the scientific processes of preclinical and clinical research to categorize resources within the research areas of vaccines, diagnostics, and therapeutics. Internal NIAID translational researchers and program officers might be able to provide some insights.
- Consider evaluating content in the *Resources for Researchers* Web portal to ensure that up-to-date and relevant information is presented on the NIAID website.
- Consider using the same link text in the left navigation menu as the link text in the content to ensure consistency.
- Consider using a left navigation menu for all pages in the Web portal to either return to previous pages or to drill down deeper into the subtopic area.

## SPECIFIC FINDINGS

### Task 1: Evaluating the *Resources for Researchers* Main Page

- Consider keeping the Dashboard page style for the main page.
- Consider replacing the microscope navigation button with a more generic button, such as a house or an arrow, with text indicating that when clicked, the visitor will return to the *Resources for Researchers* main page. Also, consider changing the circle to a square or other shape that is more recognizable as a button.
- Consider rewording the introductory paragraph to introduce first the direct research resources (e.g., Biological Materials) and then introduce the secondary resources (e.g., product development resources).
- Consider changing the *Technology Development* link name to ”Technology Transfer” or other more informative label, or add additional subtopic links to make it clear what information is available in that Web section.
- Consider adding an “Expand All” option to any page with expandable lists.
- Consider enlarging the size of the plus and minus sign to make it clearer that the gray bars are expandable lists.

### Task 2: Review of the *Biological Materials* Section

#### Reagents

- Consider reorganizing the resources by pathogen specific resources and general resources.
- Consider reorganizing the naming structure of the hyperlinks, so the key words appear first. For example:

  **Current:** NIH AIDS Research and Reference Reagent Program
  **Proposed:** AIDS Research and Reference Reagent Program (NIH)

- Enhance Search Engine Optimization so a Google or an intra-NIAID web site search would direct users to this page.

### Model Animals

- Consider moving the Development Services above the Sources so the subhead and link are not lost following the list of Sources links.
- Consider removing the Traditional and Non-Traditional Animal Models subheading.

## Task 3: Rabbit Immunology and Infectious Disease Page Review

- Consider removing the *Rabbit in Immunology and Infectious Disease Research* page, unless there are rabbit model resources available.
- Consider combining left navigation menu options B and C shown below so that the four main categories are listed as expandable lists with specific subtopics under each. While this is the optimal combination, if it is not possible to add expandable lists to the left navigation menu, consider using Option C, as most of the participants favored this organization.

| A | B | C |
|---|---|---|
| **Resources for Researchers**<br>Biological Materials<br>**Model Animals** | **Resources for Researchers**<br>Bioinformatics<br>Biological Materials<br>Translational Research Tools and Services<br>Partnerships and Technology Development | **Resources for Researchers**<br>Biological Materials<br>Cell, Tissue, and Organism Repositories<br>Model Animals<br>Reagents |

## Task 4: Animal Models for Infectious Disease Page Review

### Animal Models of Infectious Disease Page

- Consider adding links to additional information and/or staff contacts for each of the three types of services listed at the top of the page.
- Consider adding navigation links to the left navigation menu, as shown in Option C or a combination of Options B and C in the Alternate Left Navigation Menus in Exhibit I, Task 3.
- Consider changing the structure of the breadcrumbs so that users can easily return to the previous page. For example, on the Model Animals of Infectious Disease page, the breadcrumbs should read "NIAID > Labs and Scientific Resources > Resources for Researchers > Biological Materials."

### Microbiology and Infectious Diseases Resources Page

- Consider evaluating the purpose of the *Microbiology and Infectious Disease Resources* page and where it fits within the overall *Resources for Researchers* web section. This will help determine whether revisions should be made to reduce confusion or whether the page should be removed altogether. Important questions that should be answered in this evaluation include:
    - Is there a need to have a page that consolidates all DMID resources?
    - Does this page need to be linked to more prominently from the main *Resources for Researchers* page?
    - How are the DMID resources used within the main topic areas, specifically *Biological Materials* and *Translational Research Tools and Services*?
- If it is decided that the *Microbiology and Infectious Disease Resources* page should remain on the website, consider moving the links in the left navigation menu to the center of the page and organizing them by topic.

## Task 5: Translational Research Tools and Services Section Review: Genomic Sequencing Centers for Infectious Diseases

### Translational Research Tools and Services Page

- Consider organizing Vaccines, Diagnostics, and Therapeutics as separate subtopics, instead of Biocontainment Facilities, Preclinical, and Clinical Research Resources.
- Consider organizing Infectious Diseases, Preclinical and Clinical Research Resources as separate categories under each of the Vaccines, Diagnostics, and Therapeutics subtopics.
- Consider moving Biocontainment Facilities to another main topic area, or create a general Clinical Research page listing standards and policies with Biocontainment Facilities listed.
- Consider adding a link to ongoing clinical trials.
- Consider changing the headings to read "HIV/AIDS" and "Non-HIV/AIDS Infectious Diseases."
- Consider adding a link to the *Vaccine Evaluation and Treatment Units* page. http://www.niaid.nih.gov/about/organization/dmid/clinical/vteu/Pages/default.aspx
- Consider adding add "In Vivo Assessment" with "In Vitro Assessment" under the Screening subhead under Preclinical Research Resources.

### Genomic Sequencing Centers for Infectious Diseases

- Consider adding a link to the Genomics Sequencing Centers in multiple places, such as Clinical Research; Vaccines, Therapeutics and Diagnostics; and Bioinformatics and Systems Biology.
- Consider using simpler left navigation menu, as shown in Option C or a combination of Options B and C in the Alternate Left Navigation Menus in Exhibit I, Task 3..

## Task 6: *Translational Research Tools and Services* Section Review: *Microbiology and Infectious Diseases Clinical Research Policies, Guidance, and Tools* Page

- Consider adding navigation links to the left navigation menu, as shown in Option C or a combination of Options B and C in the Alternate Left Navigation Menus in Exhibit I, Task 3.
- Consider shortening the name of the page title and link text of *Microbiology and Infectious Diseases Clinical Research Policies, Guidance, and Tools*.
- Consider using the same text for links, regardless of link location (page content or left navigation menu. Also, consider using the same text for the page title as the link text.

# SUMMARY OF SELECTED ROUND 1 RECOMMENDATIONS

## SPECIFIC FINDINGS

## Translational Research Tools and Services

- Consider adding a link to *Genomics Sequencing Centers* in both the *Basic and Omics Research Resources* and *Bioinformatics* topic areas and pages.
- Consider categorizing links into more specific topic areas, rather than by type of research (basic, translational, clinical, etc.)

### Basic and Omics Research Resources

- Consider adding a link to the *Microbial Sequencing and Omics (Non HIV/AIDS)* page to both the *Bioinformatics* and *Biological Materials and Reagents* topic boxes and/or pages and eliminate this page.
- Consider adding descriptions of each of these links to clarify what users will find on those pages.

### Clinical and Preclinical Research Resources (Preclinical and Clinical)

- Consider organizing the expandable lists of *Preclinical and Clinical Research Resources* into categories, i.e., health/disease topics, services or resources, policies, and so forth.

### Vaccines, Diagnostics, and Therapeutics (Vaccines)

- Consider working with NIAID stakeholders and internal resources to review the categorization of resources under vaccines, diagnostics, and therapeutics.
- Consider organizing the links under *Vaccines, Diagnostics, and Therapeutics* into at least two categories, HIV/AIDS-related research, and other diseases.
- Consider combining all of the links under *Vaccines, Diagnostics, and Therapeutics* into a single list without duplication.
- Consider adding categories, such as Resource Centers, and Clinical Resources.
- Consider identifying government or nongovernment resources, possibly creating a new category for nongovernment resources only.
- Consider organizing HIV-related links in a separate category from links related to other diseases.
- Consider alphabetizing lists by disease topic rather than the first word in the name.

# Partnerships and Technology Development

- Consider moving licensing and collaboration to this page, based on participant comments made when reviewing the *Partnership and Technology Development* page.
- Consider clarifying the types of licensing and collaboration opportunities NIAID is offering: support to researchers bringing opportunities to NIAID to patent or move forward in development, and/or opportunities that can be licensed and developed from NIAID.

## Licensing and Collaboration Opportunities

- Consider adding an introductory paragraph describing the content and the opportunities available.
- Consider indicating the status of the intellectual property listed by adding a PCT number or submission date next to each of the links.
- Consider taking "Collaboration Opportunities" out of the title.

# APPENDIX A:

# NIAID RESOURCES FOR RESEARCHERS WEB USABILITY STUDY—ROUND 2

## INTERVIEW PROTOCOL

# NIAID RESOURCES FOR RESEARCHERS USABILITY STUDY

# INTERVIEW PROTOCOL—ROUND 2

## Testing Materials

Remote Testing

- Computer and phone for moderator
- Computer and phone for participant
- Interviewer clock
- Digital audio recorder and microphone
- GoToMeeting subscription
- Copy of the testing protocol for moderator
- Conference call-in number

**IMPORTANT**

- Set up interview sessions on GoToMeeting and invite participant.
- Set up a browser with two tabs opened to each of the different versions NIAID *Resources for Researchers* main page and minimize or maximize as needed throughout the interview.
- Open a third tab in the browser showing the *Translational Research Tools and Services* page.

## Testing Goals

The *Resources for Researchers* Web section or portal of the National Institute of Allergy and Infectious Diseases (NIAID) website was redesigned and launched as a result of previous research and usability testing. With the completion of Phase 1, the *Resources for Researchers* portal dramatically changed the way information is organized and presented. The *Resources for Researchers* Web section content was previously organized by NIAID division and the redesign changed the content organization to a topic-based structure. The NIAID Web Team received Evaluation Set-Aside funds to conduct a second phase of usability testing to further improve the Web section's organization, navigation, and content of the *Resources for Researchers* Web portal. In Round 1 of the Phase 2, the usability study was focused on discovering how grantees prefer to find and use the information available. The Round 1 study was also successful in providing insight on the following:

- Researchers prefer resources to be grouped by type of research or by disease.
- Researchers want a flatter, less hierarchical structure to the portal's organization, and simpler and less complex navigation at the deeper levels.
- Researchers, regardless of the type of research they conduct, use the portal the same way. It is only the stage of their research which would drive their need for specific types of scientific resources.

The goal of Round 2 is to test the layout and navigation of two different formats for the Resources for Researchers main page, and navigation needs of the sublevel pages in the portal. During the usability test, participants will be asked to complete several tasks in the *Resources for Researchers* Web section. Pages to be tested include the Resources for Researchers main page and two of its subsections: *Biological Materials* and *Translational Research Tools and Services*. The two layouts of the *Resources for Researchers* main page—expandable lists of links and the modified dashboard style—will be viewed on NIAID's internal test server. An electronic prototype showing 3 different left navigation menus will also be used during the usability interviews. The other Web pages reviewed during the usability interviews will be accessible on the live NIAID website.

## Timing — 62 Minutes Total

| Approximate Time | Topic | Elapsed Time |
|---|---|---|
| 5 | Background/Introduction | 5 |
| 10 | Task 1 | 15 |
| 7 | Task 2 | 22 |
| 12 | Task 3 | 34 |
| 10 | Task 4 | 44 |
| 7 | Task 5 | 51 |
| 7 | Task 6 | 58 |
| 5 | Summary/Closing | 1:03 |

# Key Questions and Probes for the Interviewer

During the interview, the interviewer will encourage the participants to give detailed information. The following questions and probes will be used to elicit additional details from participants.

Think-aloud reminders

- **Remember to tell me your thoughts and reactions as you're looking at the website.**
- **Can you tell me what you're thinking about now?**

Track where and what participants are looking at

- **What do you see first?**
- **Can you show me which part you were looking at when you had that reaction?**
- **Where are your eyes going?**
- **What are you looking at now? What do you think about that?**

To elicit further information

- **Tell me more about…**
- **How so?**
- **In what way?**
- **Tell me more about that.**
- **Remember, there are no "right" or "wrong" answers. I just want to know your honest opinion.**

# Background

- Thank you for agreeing to this interview. My name is [NAME] and I'll be talking with you today. I work for a company called the **American Institutes for Research (AIR)**, which is an independent nonprofit research organization.
- The National Institute of Allergy and Infectious Diseases (NIAID) has asked AIR to conduct usability interviews with researchers to review the *Resources for Researchers* section of its website.
- I will guide you through our session by asking you to complete some tasks on the site. I'll also ask you about your experience as you go through the website. We would like to know what's clear and what's unclear, as well as what you like and don't like.
- You may ask me questions while you use the website. Sometimes I won't be able to answer because I'd like you to give us your unbiased feedback. I don't want you to feel frustrated, so if you ever feel like you need a break or you are done, just let me know and we can stop.
- Any questions?

## Ground Rules

- Today's interview session will take approximately **60 minutes**. We haven't scheduled any formal breaks, but feel free to let me know if you would like to pause for a few minutes or if you need to stop.
- Everything you tell me will be **confidential**. To protect your privacy, we won't connect your name with anything that you say. We will summarize comments from all the participants in a report without identifying anyone.
- Please give us your **honest feedback**. Remember that we're not testing you—we're testing the website. There are no "right" and "wrong" answers. If something about the site is unclear or confusing to you, it's may be confusing to other people too. I did not develop the website, so please don't worry about offending me.
- I would like to **record our session** today to make sure I capture all of your feedback. The recording will be used to capture your thoughts accurately. As I mentioned before, neither your name nor your identity will be associated with your comments. Please try to **speak in a voice at least as loud as the one I'm using** now so that we can make sure your voice is picked up by the recording device.
- We have a lot to talk about today, so there may be times when I need to move the discussion along. Please understand that **when I ask that we move to a new topic, I don't mean to be rude**.
- Do you have any questions before we continue? [ANSWER ANY QUESTIONS, AND THEN PROCEED.] Is it okay if I begin recording now?

## Think Aloud

As you review the website today, I'm going to ask that you think aloud so that I can follow along and understand your thought process as you navigate the website.

# Introduction

**Before we begin some of the tasks, I have a few questions about your previous experience on the NIAID website.**

1. **Have you ever visited the National Institute of Allergy and Infectious Diseases website?**
   a. **If YES, how often have you visited the website:**
      - ☐ **Weekly**
      - ☐ **Monthly**
      - ☐ **Once in the past 6 months**
      - ☐ **Once in the past year**
2. **Have you ever visited the NIAID *Resources for Researchers* section of this website before?**
3. **What other websites do you go to for similar information?**

# Task 1. Evaluating the *Resources for Researchers* Main Page

**This task asks participants to review the *Resources for Researchers* main page, focusing on the content, language, and navigation options.**

**[NOTE: INTERVIEWER SHOULD HAVE 1 OF EACH *RESOURCES FOR RESEARCHERS* MAIN PAGE PROTOTYPES OPEN IN SEPARATE BROWSER WINDOWS AND MINIMIZED THROUGHOUT THE ENTIRE INTERVIEW.]**

**#1—MAIN PAGE WITH EXPANDABLE LISTS**

http://webedits.niaid.nih.gov/labsandresources/resources/Pages/default2.aspx#

**#2—MAIN PAGE, DASHBOARD STYLE**

http://webedits.niaid.nih.gov/labsandresources/resources/Pages/default3.aspx#

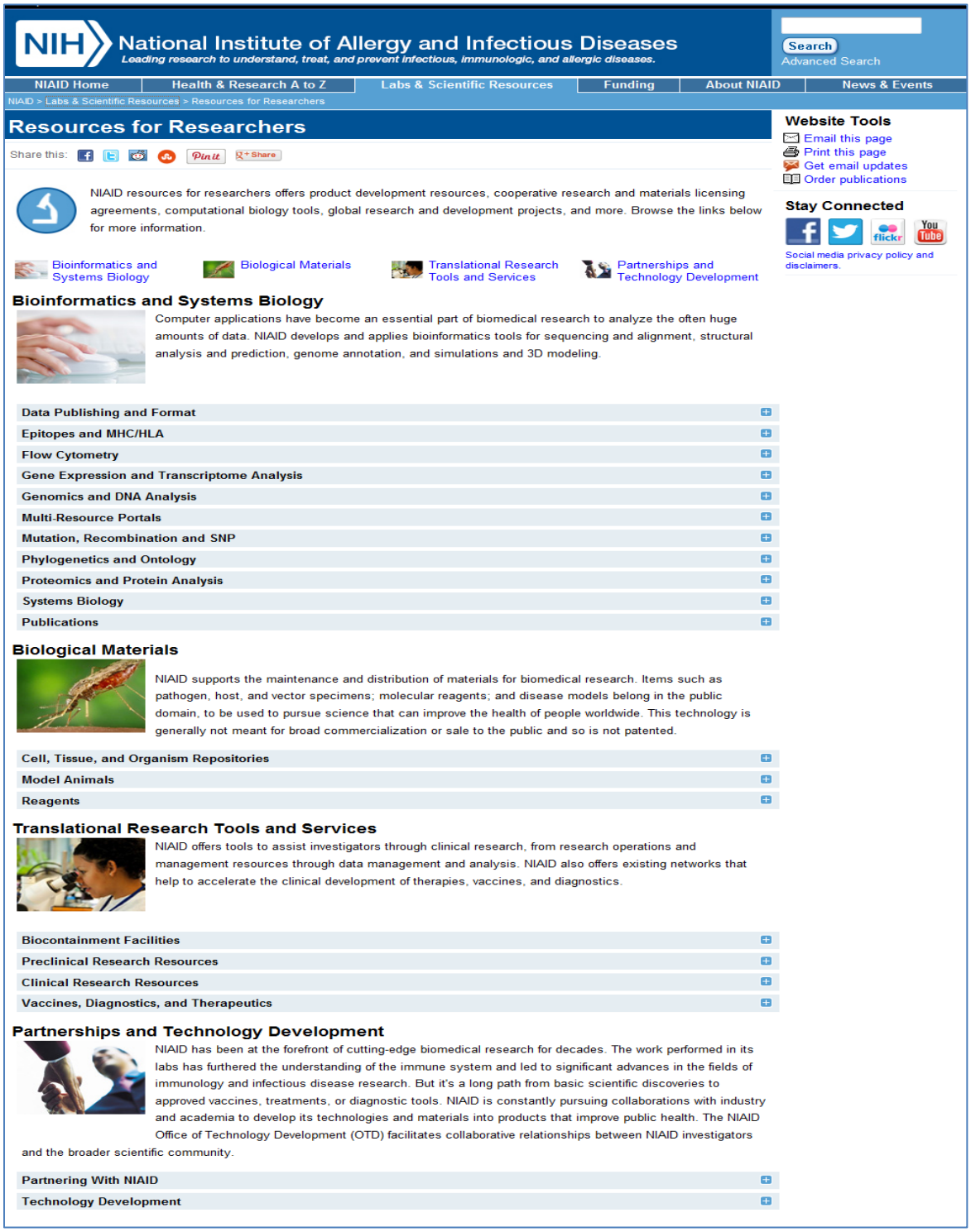
**For this first task, we are going to be looking at 2 different versions of the main page of the *Resources for Researchers* Web section. We will look at one version, then the next, and if you would like, I can show you both side by side.**

http://webedits.niaid.nih.gov/labsandresources/resources/Pages/default2.aspx#

**This is the NIAID *Resources for Researchers* main page. Take a minute to look it over. Focus on the content, language, and navigation options.**

# Task 1. Evaluating the *Resources for Researchers* Main Page *(continued)* Exhibit 1. *Resources for Researchers* Main Page with Expandable Lists

**Exhibit 1. *Resources for Researchers* Main Page with Expandable Lists**



4. **Is this what you expected to find on this page?**
5. **What do you like about this page? What do you dislike about this page?**
6. **What do you think about the organization of the content on this page?**
7. **What do you think will happen if you click on one of the topics listed under *Translational Research Tools and Services*? Is it clear that these are expandable lists?**
8. **Tell me what you like or dislike about being able to select and expand these topic lists.**
9. **Please go back up to the top of the page. What do you think of the 4 pictures and the topic areas listed across the page after the introductory paragraph?**
10. **Is there anything you would change on this page? Is there anything missing—or something you would like to see added?**

**Now we are going to look at the other version, Option B, of the *Resources for Researchers* main page.**

http://webedits.niaid.nih.gov/labsandresources/resources/Pages/default3.aspx#

# Task 1. Evaluating the *Resources for Researchers* Main Page *(continued)*

**Exhibit 2. *Resources for Researchers* Main Page with Dashboard Layout**


**This is the other version, Option B, of the NIAID *Resources for Researchers* main page. We call this the Dashboard version. Take a minute to look it over. Please focus on the organization of the content, and navigation options.**

11. **Is this what you expected to find on this page?**

12. **What do you think about the organization of the content on this page?**

13. **What do you like about this page as the format for the *Resources for Researchers* main page?**

14. **Please look at the introductory paragraph for a moment. Tell me what you think about what it says. Does it give you an idea of what to expect in this section?**

## Task 1. Evaluating the *Resources for Researchers* Main Page *(continued)*

15. **What do you think of the circle with the stylized microscope? Do you think this has a specific purpose?** [STATE FOR THE RECORDING IF THE PARTICIPANT NOTICED THE CIRCLE WITH THE STYLIZED MICROSCOPE.]
    a. [IF YES, ASK: ] **Please describe what purpose or meaning it has to you.**
    b. [IF NO, ASK: ] **Why not? What do you think could be done to make the purpose clearer?**
    c. **Do you think the circle is clickable?**
16. **What do you think of the four topic areas shown on this page?**
    a. **What you think the organization of the links under the *Biological Materials*?**
    b. **And Translational Research Tools and Services?**
    c. **Are there any subtopics missing from these main topics?**
17. **Do the links under each topic provide you with enough detail so that you know what you will find before going to those pages? Tell me more about them. Are there any links that don't? Tell me more about those.**
18. **Is there anything you would change, add or remove from this page? Now I would like you to look at both of these pages side-by-side and compare the two.**

**Let's look at the main page with the expandable lists.** [PLACE SCREEN SHOT ON LEFT.]

19. **What do you like about this page in comparison to the other page?**
20. **What do you dislike about this page in comparison to the other page?**
21. **Are there any changes or additions you think could be made to this page?**

**Now, let's look at the main page with the dashboard of topics.** [PLACE SCREEN SHOT ON RIGHT.]

22. **What do you like about this page in comparison to the other page?**
23. **What do you dislike about this page in comparison to the other page?**
24. **Are there any changes or additions you think could be made to this page?**
    a. **Which main page format do you prefer—dashboard or the expandable lists? Why?**

# Task 2. Review of the *Biological Materials* Section

***This task asks participants to find and review the Biological Materials section focusing on the organization of links listed under Model Animals*.**

[OPEN THE BROWSER WITH THE MAIN PAGE WITH EXPANDABLE LISTS FOR THIS TASK.

http://webedits.niaid.nih.gov/labsandresources/resources/Pages/default2.aspx#]

**I would like you to go down to the *Biological Materials* section of the page. Please click on the *Cell, Tissue, and Organism Repositories* link to expand the list of links beneath the topic.**

**25. *Cell, Tissue, and Organism Repositories*:**

- **a. What do you think about the organization of these links?**
- **b. Are there any changes or additions you think should be made to this list?**
- **c. Is the alphabetical organization of these links helpful?**
- **d. Do the links provide you with enough detail so that you know what information you will find before going to those pages? What links are not as detailed?**

[LEAVE THE LIST EXPANDED AND MOVE ONTO *REAGENTS*.]

**Please click on the *Reagents* link to expand the list of links for this topic.**

**26. *Reagents:***

- **a. What do you think about the organization of these links?**
- **b. Are there any links here that are repeated in the *Cell, Tissue, and Organism Repositories links*? Do you like or dislike the repetition of these links under different topics? Why?**
- **c. Are there any changes or additions you think should be made to this list?**

[THE PARTICIPANTS' MAY COLLAPSE THE EXPANDED LISTS AND MOVE ONTO *MODEL ANIMALS*.]

**Please click on the *Model Animals* link to expand the list of links for this topic.**

**27. *Model Animals*:**

- **a. What do you think about how these links are categorized?**
- **b. Do the links provide you with enough detail so that you know what information you will find before going to those pages? What links are not as detailed?**
- **c. Are there any changes or additions you think should be made to this list?**

# Task 2. Review of the *Biological Materials* Section (continued)

**Exhibit 3. *Resources for Researchers* Main Page—*Biological Materials* Topic Lists Expanded**

## Biological Materials

NIAID supports the maintenance and distribution of materials for biomedical research. Items such as pathogen, host, and vector specimens; molecular reagents; and disease models belong in the public domain, to be used to pursue science that can improve the health of people worldwide. This technology is generally not meant for broad commercialization or sale to the public and so is not patented.

### Cell, Tissue, and Organism Repositories

Cells, tissues, and organisms are the building blocks of basic research. NIAID provides access to existing repositories of this material for general use of the scientific community.

- BEI Resources Repository
- Center for International Blood and Marrow Transplant Research
- Clinical Laboratory Diagnostics for Invasive Aspergillosis
- Filariasis Research Reagent Repository Center (FR3)
- HIV/AIDS Specimen Repository
- International Collaborative Network for the Study of Human Helminth Co-Infections
- National Disease Research Interchange
- Network on Antimicrobial Resistance in *Staphylococcus aureus* (NARSA)
- Schistosomiasis Resource Center
- World Reference Center for Emerging Viruses and Arboviruses (WRCEVA)

### Model Animals

#### Sources

**Mice**

- NIH Knockout Mouse Project
- Gene Knockout/Transgenic Mice NIAID Exchange Program
- Non-Obese Diabetic (NOD) Mouse BAC Library

**Non-Human Primates**

- National Primate Research Centers
- Simian Vaccine Evaluation Unit
  - To request resources: Guidelines for Requesting Access to Animal Models and Vaccine Reagents

**Rabbits**

- Rabbit Immunology and Infectious Disease Research

**Swine**

- National Swine Resource and Research Center

**Traditional and Non-Traditional Animal Models**

- Animal Models of Infectious Disease

#### Development Services

- Animal Models of Infectious Disease

### Reagents

- BEI Resources Repository
- Filariasis Research Reagent Repository Center (FR3)
- Guidelines for Requesting Access to Animal Models and Vaccine Reagents (HIV/AIDS)
- Malaria Research and Reference Reagent Resource Center (MR4)
- NHP MHC Reagents and Genotyping Protocols
- NIH AIDS Research and Reference Reagent Program
- NIH Tetramer Core Facility
- Nonhuman Primate Reagent Resource
- Rabbit Immunology and Infectious Disease Research
- Schistosomiasis Resource Center
- Vaccine Reagent Resource (HIV/AIDS)
- World Reference Center for Emerging Viruses and Arboviruses (WRCEVA)

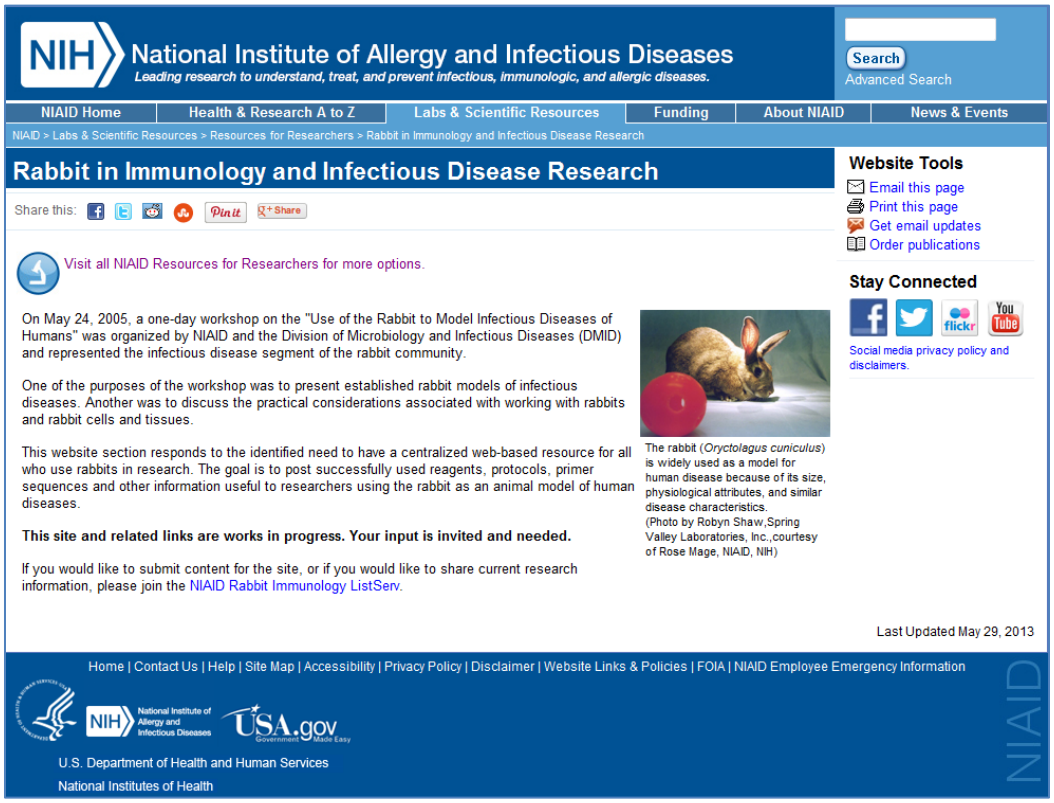
**For our next task, let's say you need to find information about a rabbit model for an immunology research project?**

# Task 3. *Rabbit Immunology and Infectious Disease* Page Review

***This task asks participants to find and review the* Rabbit Immunology and Infectious Disease Research *page focusing on the navigation options.***

[HAVE THE PARTICIPANT SELECT LINK TO THE *RABBIT IMMUNOLOGY AND INFECTIOUS DISEASE* RESEARCH PAGE.]
http://webedits.niaid.nih.gov/LabsAndResources/resources/ri/Pages/default2.aspx#

**Exhibit 4. Rabbit Immunology and Infectious Disease Research Page**




**28. Is this what you expected to find on this page?**

**29. What do you like about this page? What do you dislike about this page?**

**30. What do you think about the organization of the content on this page?**

**31. How would you get back to main *Resources for Researchers* page without using the back button?**

## Task 3. *Rabbit Immunology and Infectious Disease* Page Review *(continued)*

**32. What do you think about the button with the microscope? What do you think its purpose is?**

- **a. Does the hyperlinked text next to the button provide you with enough detail so that you know what information you will find if you clicked on it?**
- **b. Is it clear that you can click on the button to go somewhere else in the *Resources for Researchers Web section*?**

**33. What if you wanted to go to other pages, such *Reagents* or *Translational Research Tools and Services,* how would you go to those pages without using the back button or search function?**

- **a. Do you want additional links to other areas of the website? Please describe why you do or don't.**

**34. I am going to show you some sample navigation options. Please tell me which one you like and why.**

- **a. Can you tell me what you didn't like about the other two options?**

| Left Navigation Menu Alternatives | | |
|---|---|---|
| **A** | **B** | **C** |
| **Resources for Researchers**<br>Biological Materials<br>**Model Animals** | **Resources for Researchers**<br>Bioinformatics<br>Biological Materials<br>Translational Research Tools and Services<br>Partnerships and Technology Development | **Resources for Researchers**<br>Biological Materials<br>Cell, Tissue, and Organism Repositories<br>Model Animals<br>Reagents |

**35. Let's say you wanted to go to the *Animal Models of Infectious Disease* also listed under *Biological Materials*, which left navigation menu would you prefer to help you navigate back to *Model Animals*?**

- **a. The *Resources for Researchers* main page, which one would you prefer?** [IF PARTICIPANT GIVES DIFFERENT ANSWER, ASK:] **Why didn't you select your first choice again?**
- **b. Or do you like having only one link, such as the button, to get back to the main page?**

[HAVE THE PARTICIPANT RETURN TO THE *RESOURCES FOR RESEARCHERS* MAIN PAGE WITH THE DASHBOARD.]

http://webedits.niaid.nih.gov/labsandresources/resources/Pages/default3.aspx#

# Task 4. *Animal Models for Infectious Disease* Page Review

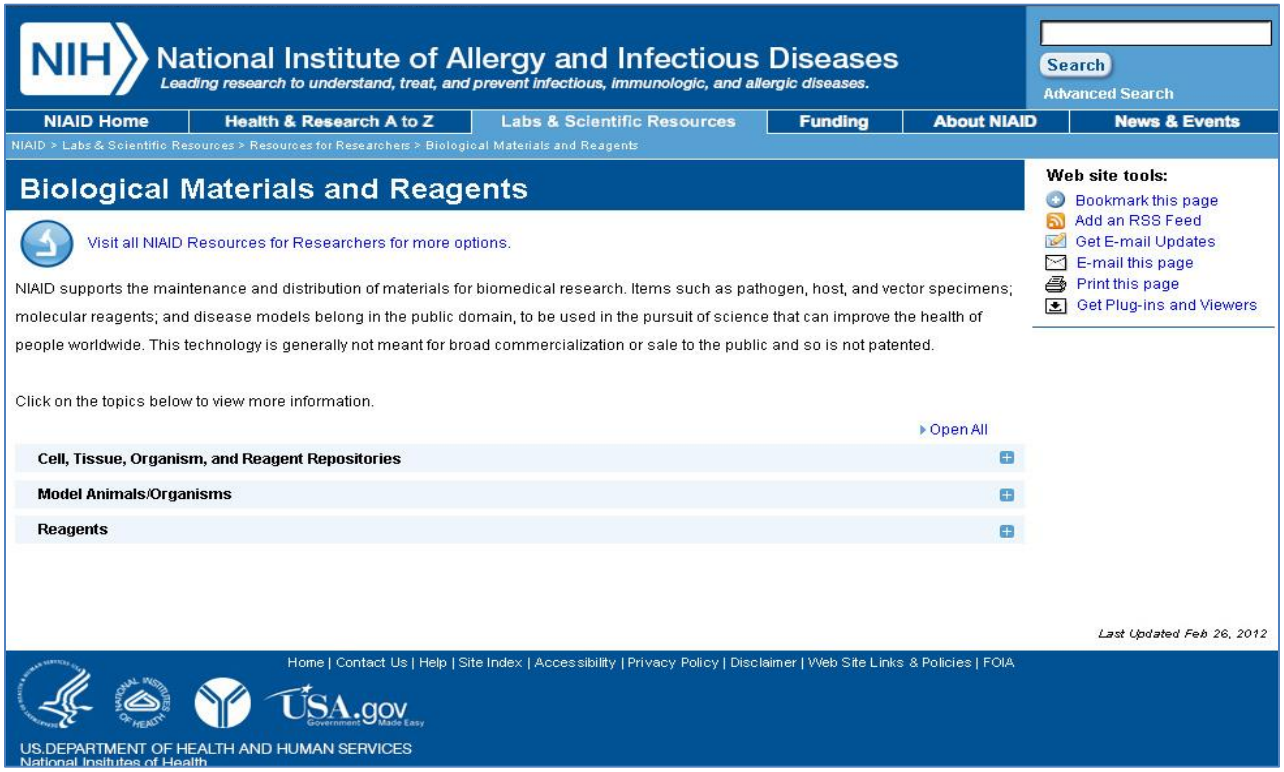
***This task asks participants to find and review the* Animal Models for Infectious Disease Research *page focusing on the content and navigation options, before reviewing the* Microbiology and Infectious Diseases Resources *page.***

**Exhibit 5. *Resources for Researchers* Main Page with Dashboard**


**Please click on the *Model Animals* link in the *Biological Materials* box.**

## Task 4. *Animal Models for Infectious Disease* Page Review *(continued)*

**Exhibit 6. Biological Materials Page**

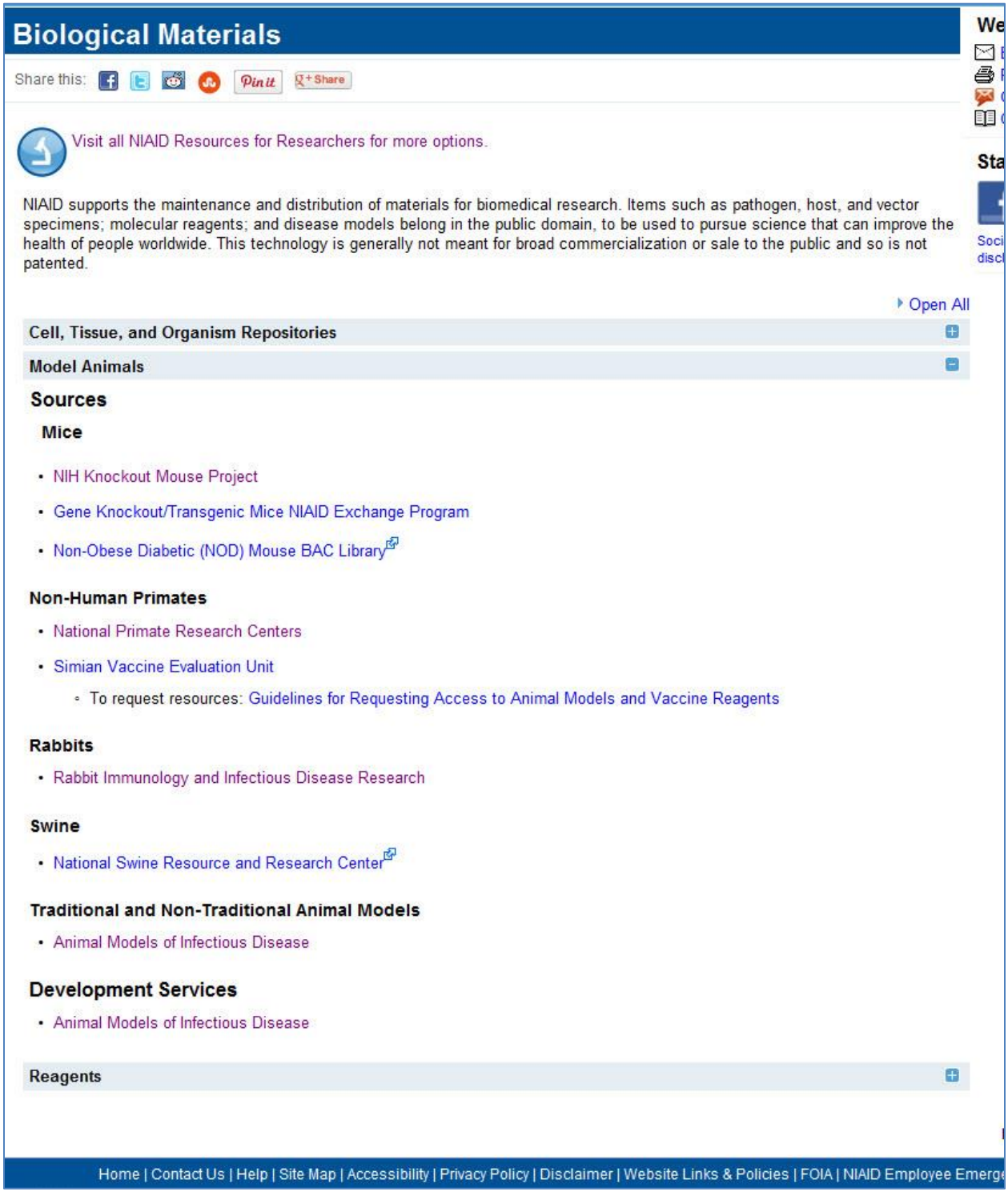



**36. Tell me what you think of this page.**

**Please expand the *Model Animals* list.**

## Task 4. *Animal Models for Infectious Disease* Page Review *(continued)*

**Exhibit 7. *Biological Materials* Page with Expanded *Model Animals* Topic List**



Biological Materials

Share this:

Visit all NIAID Resources for Researchers for more options.

NIAID supports the maintenance and distribution of materials for biomedical research. Items such as pathogen, host, and vector specimens; molecular reagents; and disease models belong in the public domain, to be used to pursue science that can improve the health of people worldwide. This technology is generally not meant for broad commercialization or sale to the public and so is not patented.

Open All

Cell, Tissue, and Organism Repositories

Model Animals

Sources

Mice

- NIH Knockout Mouse Project
- Gene Knockout/Transgenic Mice NIAID Exchange Program
- Non-Obese Diabetic (NOD) Mouse BAC Library

Non-Human Primates

- National Primate Research Centers
- Simian Vaccine Evaluation Unit
  - To request resources: Guidelines for Requesting Access to Animal Models and Vaccine Reagents

Rabbits

- Rabbit Immunology and Infectious Disease Research

Swine

- National Swine Resource and Research Center

Traditional and Non-Traditional Animal Models

- Animal Models of Infectious Disease

Development Services

- Animal Models of Infectious Disease

Reagents

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**Please find the link to the *Animal Models of Infectious Disease* page.**

**37. Before we go to that page, what do you think about how the links are categorized under the *Model Animals* topic?**

## Task 4. *Animal Models for Infectious Disease* Page Review *(continued)*

**Please click on the link to the *Animal Models of Infectious Disease* page.**

http://webedits.niaid.nih.gov/labsandresources/resources/dmid/animalmodels/Pages/default.aspx#

**Exhibit 8. Animal Models of Infectious Disease Page**


**38. How does this page compare with what you expected to find?**

**39. What do you think about the list of items on the left navigation menu? Do you think the links listed in the center portion of the page should be listed in the left navigation menu? Why or why not?**

## Task 4. *Animal Models for Infectious Disease* Page Review *(continued)*

40. **How would you navigate back to the *Model Animals* page without using the back button?**
41. **How would you go back to the main *Resources for Researchers* page without using the back button?**
42. **Is there anything you would change or add to this page?**

**Before we go back to the main *Resources for Researchers* page, I would like you to look at the *Microbiology and Infectious Diseases Resources* page.**

43. **What information would you expect to find on the *Microbiology and Infectious Diseases Resources* page?**

http://webedits.niaid.nih.gov/labsandresources/resources/dmid/Pages/default.aspx#

## Task 4. *Animal Models for Infectious Disease* Page Review *(continued)*

**Exhibit 9. Microbiology and Infectious Diseases Resources Page**


**44. How does this page compare to your expectations?**

**45. What do you think about the information on this page and how it is organized?**

**46. What do you think about the left navigation menu? How are the links related to the content on this page?**

**47. Which links provide you with enough detail so that you know what information you will find before going to those pages? Are there any links that are not as detailed?**

## Task 4. *Animal Models for Infectious Disease* Page Review *(continued)*

48. **From what you can see on this page, in what section of the NIAID website do you think this information is located?** [PROBE MORE IF PARTICIPANT DOES NOT NOTICE *Microbiology and Infectious Diseases Resources* IN THE LEFT NAVIGATION MENU.]

49. **Do you think a link to this page, *Microbiology and Infectious Diseases Resources*, should appear on any pages you've previously seen? If so, which one?** [PROMPT THE PARTICIPANT TO SWITCH TO THE BROWSER TABS SHOWING THE *Biological Materials* and *Resources for Researchers* MAIN PAGE WITH EXPANDABLE LISTS.]

50. **Is there anything you would change or add to this page?**

**For our next task, we are going to start from the main *Resources for Researchers* page.** [HAVE THE PARTICIPANT NAVIGATE BACK TO THE DASHBOARD MAIN PAGE, BUT IF IT IS NOT THE DASHBOARD PAGE, PLEASE MAXIMIZE THE BROWSER WITH THIS FORMAT (SEE INSTRUCTIONS AT BEGINNING OF PROTOCOL).] **Please go ahead and navigate back to the main page.**

# Task 5. *Translational Research Tools and Services* Section Review: *Genomic Sequencing Centers for Infectious Diseases*

***This task asks participants to review the*** **Translational Research Tools and Services** ***section looking at the links, organization and navigation options of the*** **Vaccines, Diagnostics, and Therapeutics** ***links, before reviewing the*** **Genomic Sequencing Centers for Infectious Diseases** ***page.***

**51. I would like you to look at the *Translational Research Tools and Services* section on this page. Tell me what you think about the topics you see listed there.**

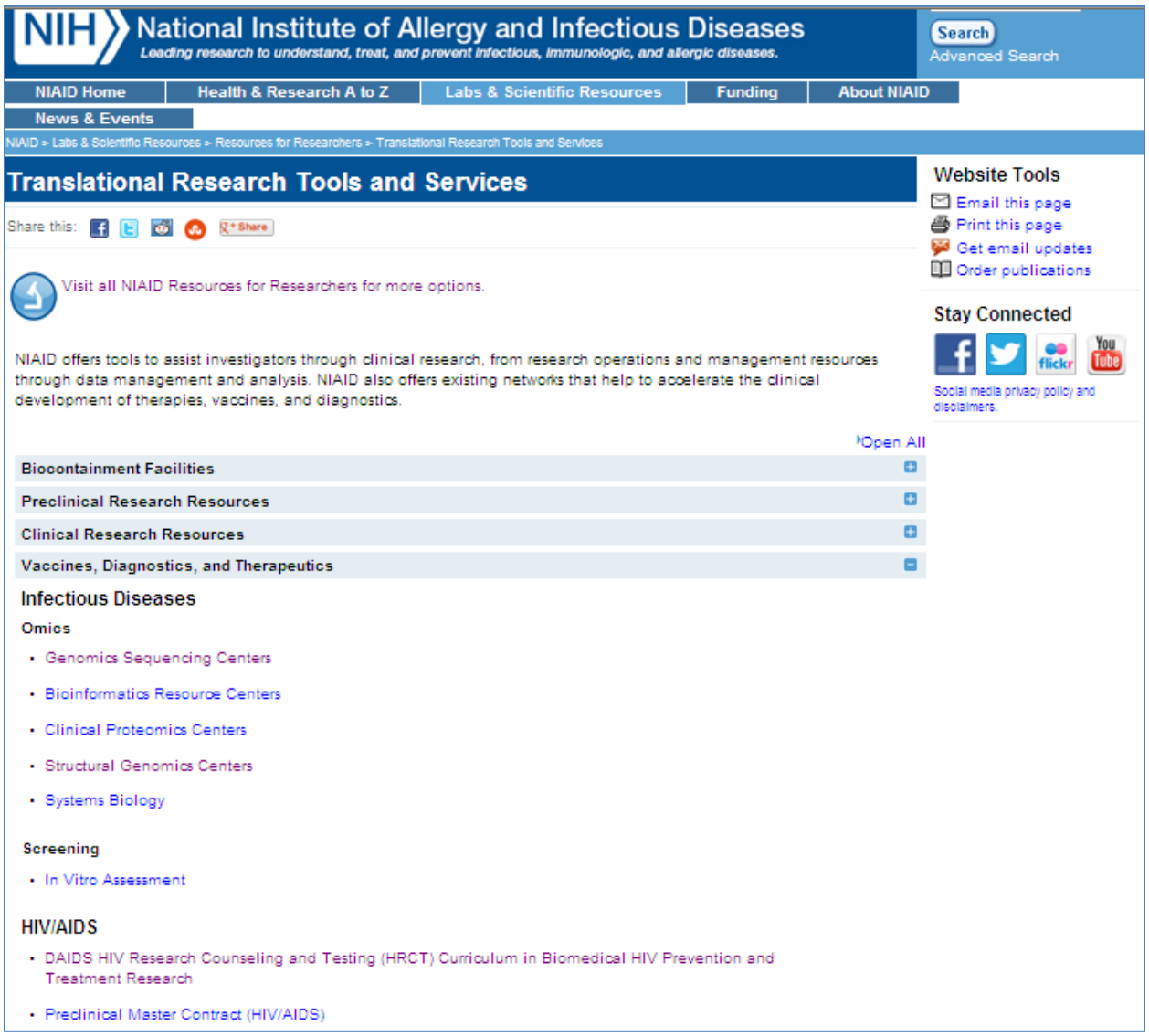
**Exhibit 10. *Resources for Researchers* Dashboard Main Page**


**52. Are there any topics you would add or change for *Translational Research Tools and Services*?**

## Task 5. *Translational Research Tools and Services* Section Review: *Genomic Sequencing Centers for Infectious Diseases (continued)*

**53. What kind of links/topics you expect to find listed under *Vaccines, Diagnostics, and Therapeutics*?** [INSTRUCT THE PARTICIPANT TO EXPAND THE *VACCINES, DIAGNOSTICS, AND THERAPEUTICS* LIST.]

**Exhibit 11. Translational Research Tools and Services Page with Vaccines List Expanded**




**54. Let's look at the links under *Vaccines*. Please take a moment to review and tell me if this is what you expected to find under *Vaccines*? Why or Why not?**

**a. What do you think about how these links are organized? Why or why not?**

## Task 5. *Translational Research Tools and Services* Section Review: *Genomic Sequencing Centers for Infectious Diseases* *(continued)*

**55. Please collapse the *Vaccines* link list and expand the *Diagnostics* list. Tell me if these links are what you expected to find?**

   **a. What do you think about how these links are organized? Why or why not?**

**56. Please collapse the *Diagnostics* link list and expand the *Therapeutics* list. Are these links are what you expected to find?**

   **a. What do you think about how these links are organized? Why or why not?**

**57. Is there anything that you would add, change, or remove from the *Vaccines, Diagnostics, and Therapeutics* section?**

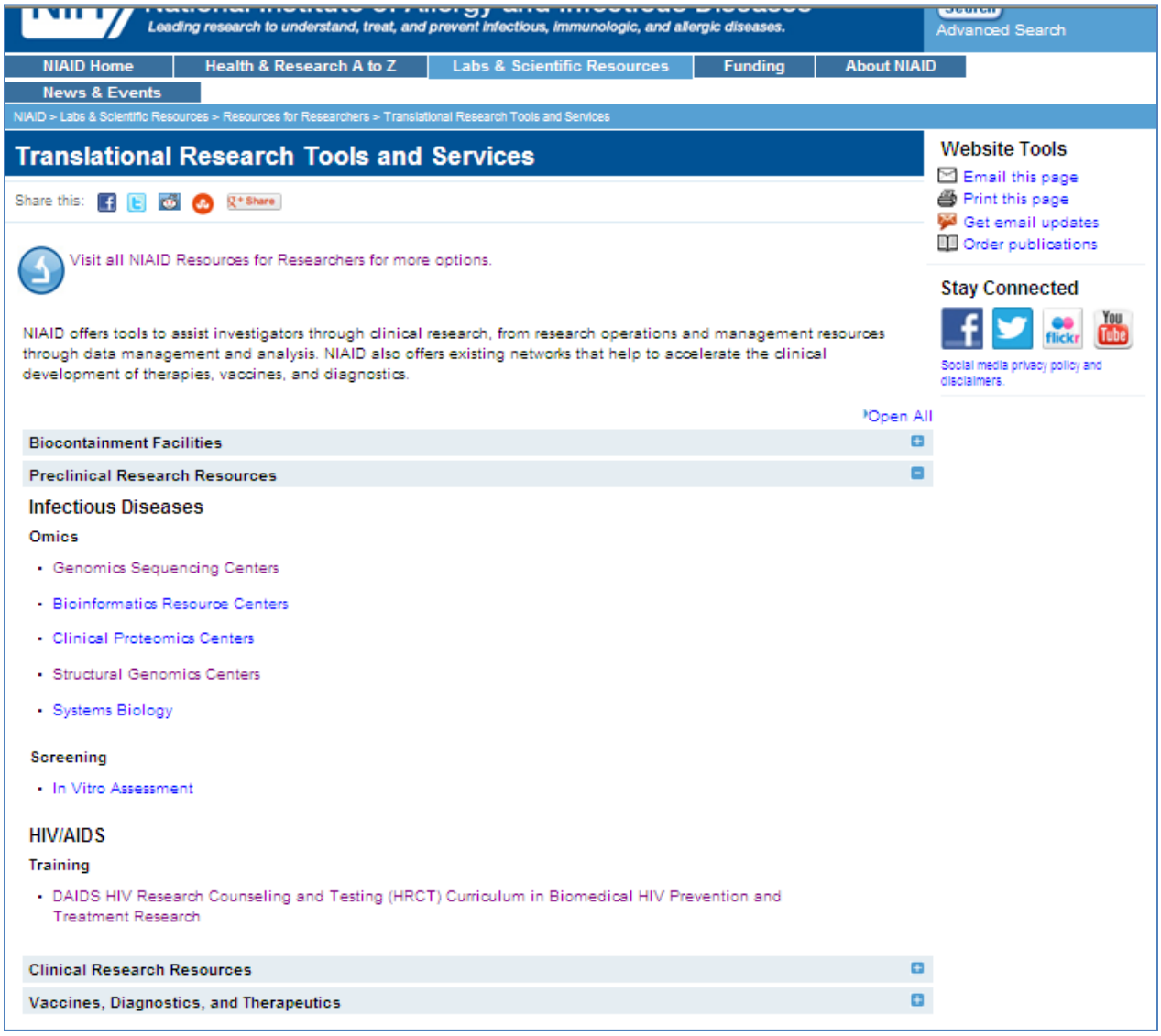
**58. What link would you click on under *Translational Research Tools and Services* to find more information about *Genomic Sequencing Centers for Infectious Diseases*?** [IF THE PARTICIPANT HAS DIFFICULTY DECIDING WHERE TO FIND THE LINK, ASK:] **Can you tell me your thought process as you decide which link you would click on?**

**59. Is there anything you would change or add to the *Translational Research Tools and Services* section?**

**Let's look at the *Preclinical Research Resources*. Please click on that topic.**

## Task 5. *Translational Research Tools and Services* Section Review: *Genomic Sequencing Centers for Infectious Diseases (continued)*

**Exhibit 12. Translational Research Tools and Services Page With the Preclinical Research Resources List Expanded**




**Please expand the *Preclinical Research* list.**

**60. What do you think about the topics listed under *Preclinical Research Resources* and how they are organized?**

**Please click on the Genomic Sequencing Centers link.**

**61. Is this what you expected to find on this page? What do you think about how the information is organized?**

## Task 5. *Translational Research Tools and Services* Section Review: *Genomic Sequencing Centers for Infectious Diseases* *(continued)*

**62. What do you think about the links in the left navigation menu? How are these links related to the information in the main section of this page (*Genomic Sequencing Centers for Infectious Diseases*)?**

**63. From what you can see on this page, in what section of the NIAID website do you think this information is located?** [PROBE MORE IF PARTICIPANT DOES NOT NOTICE *Microbiology and Infectious Diseases Resources* IN THE LEFT NAVIGATION MENU.]

**64. Is there anything that you would add, change, or remove from this page?**

**65. How would you navigate back to the *Preclinical and Clinical Research Resources* page without using the back button?**

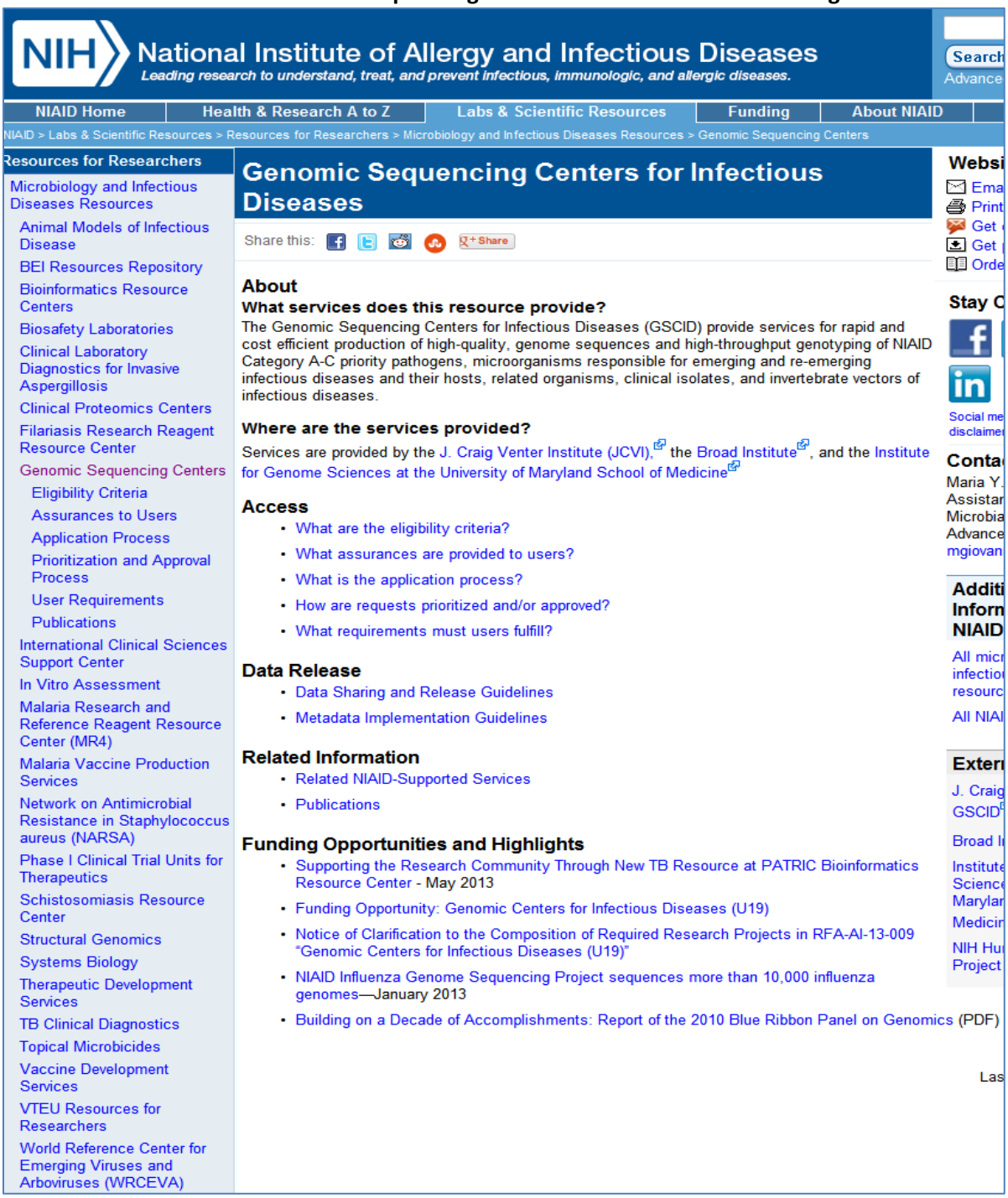
**66. How would you navigate back to the *Resources for Researchers* main page without using the back button?**

[INSTRUCT PARTICIPANT TO CLICK ON *RESOURCES FOR RESEARCHERS* IN THE LEFT NAVIGATION MENU. RETURN TO THE *RESOURCES FOR RESEARCHERS* EXANDABLE LISTS MAIN PAGE.]

http://webedits.niaid.nih.gov/labsandresources/resources/Pages/default2.aspx#

## Task 5. *Translational Research Tools and Services* Section Review: *Genomic Sequencing Centers for Infectious Diseases* *(continued)*

**Exhibit 14. Genomic Sequencing Centers for Infectious Diseases Page**



# Task 6. *Translational Research Tools and Services* Section Review: *DMID Clinical Research Policies, Guidance, and Tools*

***This task asks participants to review the* Translational Research Tools and Services *section looking at the links, organization and navigation options, before reviewing the* DMID Clinical Research Policies, Guidance, and Tools *page.***

**Please switch tabs to the *Resources for Researchers* main page with expandable lists.**

**67. I would like you to look at the *Translational Research Tools and Services* section again. This last task is to find more information about the Microbiology and Infectious Diseases (MID) clinical research policies, guidance and tools. Tell me which link you would select to find the *MID Clinical Research Policies* page.**

**Exhibit 15. *Resources for Researchers* Main Page with Expandable Lists**

## Task 6. *Translational Research Tools and Services* Section Review: *MID Clinical Research Policies, Guidance, and Tools* *(continued)*

[IF THE PARTICIPANT CHOOSES *VACCINES, DIAGNOSTICS, AND THERAPEUTICS* OR *BIOCONTAINMENT FACILITIES*, ASK:] **Please tell me your thought process for choosing** (INSERT THE PARTICIPANT'S CHOICE)**. The page we are looking for is under *Clinical Research Resources.* Please click on that link.**

**Exhibit 16. Microbiology and Infectious Diseases Clinical Research Policies, Guidance, and Tools Page**


**68. Is this what you expected to find on this page?**

**69. What do you think about the information on this page and how it is organized?**

## Task 6. Translational Research Tools and Services Section Review: MID Clinical Research Policies, Guidance, and Tools *(continued)*

70. **What do you think about the links in the left navigation menu? How are these links related to the information in the main section of this page?**

71. **From what you can see on this page, in what section of the NIAID website do you think this information is located?** [PROBE MORE IF PARTICIPANT DOES NOT NOTICE *Microbiology and Infectious Diseases Resources* IN THE LEFT NAVIGATION MENU.]

72. **Is there anything that you would add, change, or remove from this page?**

73. **How would you navigate back to the *Preclinical and Clinical Research Resources* page without using the back button?**

74. **How would you navigate back to the *Resources for Researchers* main page without using the back button?**

**This concludes all the tasks for this usability study. I have a couple of summary questions I would like to ask you, and then I would like to confirm your contact information so we can send you your $75 Visa gift card for participating.**

# Summary

[SUMMARIZE THE MAJOR RECOMMENDATIONS AND THEMES THE PARTICIPANT BROUGHT UP DURING THE INTERVIEW. THEN ASK THE PARTICIPANT TO ANSWER THE FOLLOWING QUESTIONS.]

**75. Overall, was it easy or hard to use the *Resources for Researchers* section of the site?**

**76. Did you find it easy or difficult to understand what information and resources are available in the *Resources for Researchers* section of the site?**

**77. After navigating through different sections of the *Resources for Researchers Web section,* do you prefer the dashboard style of the *Resources for Researchers* main page to the main page format with expandable topic links listed under each of the NIAID Research areas?**

**78. Earlier you looked at some sample navigation menu options as you reviewed different pages.**[DISPLAY DIFFERENT OPTIONS SO PARTICIPANT WILL HAVE SOMETHING TO REFERENCE]. **Please tell me which one you liked and why.**

**a. Can you tell me what you didn't like about the other three options?**

| Left Navigation Menu Alternatives | | |
|---|---|---|
| **A** | **B** | **C** |
| **Resources for Researchers**<br>Biological Materials<br>**Model Animals** | **Resources for Researchers**<br>Bioinformatics<br>Biological Materials<br>Translational Research Tools and Services<br>Partnerships and Technology Development | **Resources for Researchers**<br>Biological Materials<br>Cell, Tissue, and Organism Repositories<br>Model Animals<br>Reagents |

**KEY:** [A] Main page of website or Web section

[B] Major topic area

[C] Page currently viewing or subtopic

[D] Other subtopics listed under major topic area or subtopic. **Bold** indicates the page currently viewing.

**79. Is there any information or types of information missing from the site? Is there any information you would like to see added?**

# Thanks and Closing

**Thank you for participating in our interview today. We have completed all of the tasks and questions. The information you have provided will be very useful in further updating and revising the website so that it fits your needs as a researcher.**

**We are going to stop recording now. Please remain on the line for another minute so we can collect the information we need to send you a $75 Visa gift card.**

[STOP RECORDING HERE]

**To send your gift card, we need your mailing address. We will not share this information with anyone, and it will not be used in the usability report. It will be used only to send you the gift card. What address would you like the card mailed to?**

**NAME:** _____

**ADDRESS:** _____

**CITY:** _____ **STATE:** _____ **ZIP CODE:** _____

**EMAIL:** _____