



DRAFT Usability Evaluation of NIH's Health Information Page

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Table of Contents

EXECUTIVE SUMMARY	1
INTRODUCTION	3
Methodology	3
Participants and health topics.....	3
Participant browser preferences	4
Web sites used by participants	4
Objectives and outcomes	5
FINDINGS AND RECOMMENDATIONS	7
Key questions and overarching concerns.....	7
Navigation.....	7
Credibility	9
Findings for the Home Page (as a Whole)	9
Awareness and audience	9
Labeling	9
Recommendation 1	10
Recommendation 2	10
Recommendation 3	10
Layout	11
Findings for Most Requested Topics	11
Recommendation 4	12
Recommendation 5	12
Findings for Search	12
Recommendation 6	13
Recommendation 7	13
Findings for Find.....	13
Recommendation 8	14
Findings for Content	15
Reading content	15
Recommendation 9	16
Recommendation 10	17
Topic landing pages	17
Recommendation 11	17
Recommendation 12	18
External content	18
Recommendation 13	18

Executive Summary

UserWorks, Inc., under the National Institutes of Health (NIH) contract for RPTOP #158, conducted a 16-person usability study with representative users of NIH's Health Information Page. Through the present usability study, OLIB wanted to determine if the site effectively meets its mission of information dissemination, if users are satisfied, and if users consider the content credible and useful.

OLIB outlined several areas of concern centering on communication, satisfaction, navigation, and external issues. These issues were addressed in the study through a combination of pre and post-test questionnaires, along with probing questions asked at appropriate junctures during the individual sessions.

Because of limitations regarding imposing paperwork burdens on participants, only nine of the sixteen participants were asked to complete an intake questionnaire and post-test questionnaire. These nine participants were from the health consumer group. The remaining participants, including the health professionals, were asked the post-test questions verbally at the beginning and at the end of their session; the questions helped to ascertain their areas of interest regarding the health topics and to obtain their overall comments at the conclusion of the study. This final report also discusses findings from the previous usability study of the NIH home page (conducted in February 2000 under subcontract to Quantum Research Corporation, a division of Macro International), where appropriate.

Participants were asked their preference for Internet Explorer or Netscape and were given the option to utilize either browser. Almost every participant expressed a preference for Internet Explorer; three participants indicated they had version 6.x installed, and one indicated version 5.x. Operating systems were roughly evenly split between Windows 98, Windows 2000, and Windows XP.

From our sample of 16 participants, the most popularly cited web sites used to locate health information included using search engines in general, but there was specific mention of Google (3), Yahoo (2), and Medline; the most frequently cited government web sites included NIH (3), CDC, and the Department of Veterans Affairs. WebMD (3) and Johns Hopkins (2) were also mentioned. Participants generally could not recall specific aspects they preferred on web sites, except for a couple of participants who mentioned the spell checker feature on search engine sites. One participant, however, said that the information provided through the Health Information Page web site compared favorably to WebMD, concluding that it was "more in-depth and not as basic as WebMD."

For the first two tasks, participants were asked to find information pertaining to a health topic of interest to them. They were not prompted to use a particular navigation feature (Browse, Most Requested Topic, Search, Find) in these initial two tasks. In actual use of the web site, the navigation feature chosen as the "first click" in the first task was also

selected as the “first click” for the second task. Search was by far the most frequent “first click.”

There was a 92% success rate in completion of tasks. Of 77 tasks attempted by 16 participants, only six failed to be completed either due to time constraints or because participants were facing difficulty. The first two tasks were based on topics of interest to participants and had slightly lower success rates; however, the overall architecture of the Health Information Page was consistently successful in helping participants get to the information they were seeking.

There were, however, two related issues that emerged from this present study which continue to beleaguer participants. Regardless of how participants navigate to the topic landing pages, **the agency/bureaucratic organization of information confuses participants.** This is a **persistent** problem from the previous usability study, as participants did not comprehend that the various NIH institutes are the structure by which available disease information is presented. Also, **“Resources” in the left navigation is not helpful** since it does not readily correspond to any page heading or link to any obvious anchor point. This is also a **persistent** problem.

As suggested by many participants, information is more useful if it is organized by subtopic, rather than by the producing or sponsoring institute or center. Participants implied they would prefer to see information about basic facts (fact sheets), patient advocacy, causes, treatment, and symptoms. The related links were seen as useful, as were the links to search Medline and Clinical Trials. Institutes and centers can still be referenced, but could be treated as information “sponsors,” e.g., NIMH and others, that would allow users to search for more detailed information as needed.

Overall, participants were enthusiastic about the site and the information it provided. Some asked if it was a live site, what the URL was, and could they go back and use the site later. Several remarked that they liked the site’s simple layout, that it didn’t distract them from finding information.

Participants thought that the information on the site was very trustworthy; the average of nine ratings on the post-test questionnaire for finding information on the site was 6.0, on a scale of one to seven, with one being “extremely low” credibility and seven being “extremely high” credibility. As a result, participants agreed that they would use the site again in the future (6.0) and recommend the site to others (5.7).

Introduction

UserWorks, Inc., under the National Institutes of Health (NIH) contract for RPTOP #158, conducted a 16-person usability study with representative users of NIH's Health Information Page. Through the present usability study, OLIB wants to determine if the site effectively meets its mission of information dissemination, if users are satisfied, and if users consider the content credible and useful.

Methodology

Sixteen participants were recruited for this present study; the participant interviews were conducted at UserWorks' facilities in Silver Spring, Maryland, in November 2003. All participants were asked to read and sign the video consent form that was discussed at the time of recruitment. At the time of select individuals' sessions, UserWorks asked participants to complete a brief questionnaire that informed the development of the initial two tasks the participant would complete.

Because of limitations regarding imposing paperwork burdens on participants, only nine of the sixteen participants were asked to complete an intake questionnaire and post-test questionnaire. These nine participants were from the health consumer group. The remaining participants, including the health professionals, were asked the questions verbally at the beginning and at the end of their session; the questions helped to ascertain their areas of interest regarding the health topics and to obtain their overall comments at the conclusion of the study. Participants were asked their preference for Internet Explorer or Netscape and were given the option to utilize either browser.

Using the moderator's guide, the study administrator interviewed each participant individually in a single session lasting approximately 90 minutes; each participant completed assigned tasks on the Health Information Page. After each task, participants verbally evaluated the site for ease of navigation; if the task was completed, participants were also asked to rate their satisfaction with the information found, and the understandability of content for that task. Finally, select participants were asked to complete a post-test questionnaire asking them questions about their overall satisfaction with the site.

Participants and health topics

Sixteen participants took part in the usability study. The participant groups consisted of the following:

- Six health professionals, including a nurse practitioner, a public health worker, a health writer, a health educator, and two health researchers
- Ten health consumers, including two caretakers, three with a family history or concern for a health condition, and five with a health condition

All participants were asked about their interest in the spectrum of health conditions; for purposes of the usability study, the following health topics were discussed in detail:

- Arrhythmia – 4 participants
- Asthma – 2 participants
- Back pain – 1 participant
- Deep vein thrombosis – 3 participants
- Diabetes – 3 participants
- Learning disabilities – 1 participant
- Sickle cell anemia – 1 participant
- Sleep apnea – 1 participant
- Weight loss/dieting – 1 participant

Participant browser preferences

One of the “Key Questions” from the test plan addresses the browsers/platforms that the target audiences are using to view the Health Information Page. While a study of web logs will reveal a more comprehensive answer, our sample of 16 participants can provide some insight.

Almost every participant said they used Internet Explorer, except one participant who uses their AOL (Netscape) browser. One participant also indicated that he used an Internet Explorer browser on a Macintosh.

When asked about which version they had installed, three participants indicated they had version 6.x installed, and one indicated version 5.x. Operating systems were roughly evenly split between Windows 98, Windows 2000, and Windows XP.

Web sites used by participants

Another “Key Question” asked about web sites target audiences frequent and the features participants preferred. From our sample of 16 participants, the most popularly cited web sites include the following.

- Sites to conduct searches (search engines in general) (5), but specific mention of Google (3), Yahoo (2), and Medline
- Government web sites including NIH (3), CDC, and the Department of Veterans Affairs
- Commercial sites, such as WebMD (3) and pharmaceutical manufacturers’ sites
- University-affiliated sites, such as Johns Hopkins (2), GWU, and Yale Medical School web site
- Other specialized websites, such as CareFirst’s breast cancer awareness site and Medscape’s cardiology page

When probed about features of other web sites they liked, participants generally could not recall specific aspects they preferred, except for a couple of participants who mentioned the spell checker feature on search engine sites. Applicability of this suggestion is discussed further in the “Findings for Search” section. One participant, however, said that the information provided through the NIH Health Information Page web site compared favorably to WebMD, concluding that it the Health Information Page web site was “more in-depth and not as basic as WebMD.”

Objectives and outcomes

OLIB outlined several areas of concern (see “Key questions and overarching concerns” below) that focus on communication, satisfaction, navigation, and external issues. These issues were addressed in the study through a combination of pre and post-test questionnaires, along with probing questions asked at appropriate junctures during the individual sessions.

To obtain qualitative data, UserWorks encouraged participants to identify positive and negative aspects of the Health Information Page, including features such as appearance, layout, navigation, special features, speed, intuitiveness, users’ preferences and practices, ease of use, loading time, and aesthetics. Participants also commented on the overall appearance of the pages, including layout, font style, and size.

Usability outcome measures were derived from data collected during the study and are based on observation of task performance and post-session analysis of the data. Outcome measures include the following:

- Success or lack of success in finding the desired information
- Types of errors or inappropriate choices made
- Common themes (positive and negative) found in comments made about the interface and content
- Results from questionnaires completed by participants

Usability issues were compiled and are discussed in the “Findings and Recommendations” section.

For purposes of this study, the usability issues (findings) are rated according to a severity scale. The ranking includes the following:

- **High** severity problems – prevent task completion or cause loss of data
- **Medium** severity problems – do not prevent task completion but slow performance or cause frustration
- **Low** severity problems – issues that cause momentary confusion, are a nuisance, or matters of opinion or individual preference

This final report also includes references to the previous usability study of the NIH home page (conducted in February 2000 under subcontract to Quantum Research Corporation,

a division of Macro International), where appropriate. It should be noted that the previous usability study included tasks, such as finding a summer job or a lecture at NIH, that were not part of the present study. Thus, only selected problems are discussed in this present study. These problems previously identified are classified two ways.

- **Persistent** problems are those that continued to cause difficulty
- **Debatable** problems were identified in the last round but not in this round; these are problems we would have expected to see arise again but did not

In addition, where appropriate, findings and recommendations from the October 2003 heuristic usability review/competitive analysis are discussed in this present study.

The recommendations that follow address, as appropriate, the information architecture of the site, labeling of links and menu items, screen layout and messaging, search results presentation, and user feedback on the presentation of available content.

Findings and Recommendations

The previous NIH usability study, mentioned earlier, pointed out some of the problems that we observed. We discuss those problems in relation to problems we identified and note whether the problems are persistent or new to this present study.

Key questions and overarching concerns

Navigation

There was a 92% success rate in completion of tasks. Of 77 tasks attempted by 16 participants, only six failed to be completed either due to time constraints or because participants were facing difficulty. The first two tasks were based on topics of interest to participants and had slightly lower success rates; however, the overall architecture of the Health Information Page was consistently successful in helping participants get to the information they were seeking.

The organization of the main navigation features seemed to work for most participants, with two participants commenting straight away that they liked that Search was available in a convenient, obvious spot on the page. Overall, participants thought that finding information on the site was relatively easy; the average of nine ratings on the post-test questionnaire for finding information on the site was 5.6, on a scale of one to seven, with one being “difficult” and seven being “easy.” When asked at the end of each task how helpful the site was in getting them to the information they were seeking, participants’ ratings closely corresponded to the post-test questionnaire; on the same seven-point scale, participants rated how easy it was to find information as 5.9.

The first two tasks were designed to discover participants’ preferences in navigating the site using the four main options presented to them. Based on interest relative to the health topics designated for this study, participants were asked to use any of the main navigation features (Browse, Most Requested Topic [MRT], Search, or Find). Popularity of these options as a “first click” is charted below.

Task #1 first click:

- 3 chose Browse first
- 3 chose MRT first
- 8 chose Search first
- 2 chose to Find by category first

Task #2 first click:

- 5 chose Browse
- None chose MRT
- 9 chose Search
- 2 chose Find by category

Generally speaking, the navigation feature chosen as the “first click” in the first task was also selected as the “first click” for the second task, as well. There was an exception, however, in the case of three participants who initially chose MRT in the first task but then each chose another option (Find, Browse, Search). One participant who clicked on Find first then chose Browse as the first click in the second task.

The reasons that participants gave for their selection of a “first click” varied. MRT was selected out of curiosity or because participants deemed it a quick route to detailed information. Browse was often selected because participants were already familiar with the concept of finding information alphabetically. Find was chosen because it too was deemed to have detailed information, and one healthcare professional likened Find to the *Merck Manual* <<http://www.merck.com/mrkshared/mmanual/sections.jsp>>. The popularity of Search is partially due to participants’ familiarity with or preference for searching and Search’s central placement on the page (as viewed on an 800x600 monitor). Search proved frustrating for several users, however, because some results were not retrieved as expected, namely “full-text” results with highlighted text (in the manner of Google) and queries using selected abbreviations (such as “DVT”) failed while others did not (such as “ADD”).

In the remaining tasks, participants were asked to attempt to use a different option in order to obtain their opinions about those navigation features. Those opinions are discussed in detail in the following sections.

With regard to the right-side navigation (On This Page) on the home page, one participant summed up participants’ overall comments by saying that he looked for goal-based navigation, such as “Look up drug information,” instead of “Drug Information.” Similarly, viewing information on the topic landing pages by bureaucratic organization isn’t as important as being able to scan information by topic.

One of the key questions asks, “Does the current architecture resolve the navigational problems reported in the pilot usability study?” A related question asks, “Are there any navigational ‘hang-ups’ in the processes that must be performed using the new page? In what specific ways does the interface design aid or hamper task flow?” The previous usability study identified a medium-severity problem where participants had difficulty returning home from a web site outside the National Institute of Health web site, e.g., returning home from Medline and from the National Cancer Institute web site. With regard to the present study, this problem is **persistent**; several users encountered problems using the Home button when asked to return to the starting page (Health Information Page [HIP]). Participants’ expectations for the Home button to return to HIP were not met.

Short of opening a new browser window every time an NIH institution’s fact sheet is selected, there does not seem to be an easy resolution. As discussed later, awareness by many participants of the fact that NIH is comprised of various institutions is secondary to their desire to obtain needed information; that the information comes from NCI or NIMH is less important. If users are told that they are being taken to an external site in the new window, they may be more annoyed by a new window opening than by the helpful message it contains. It is more likely that the slight inconvenience of using the browser’s Back button to return to the HIP can be tolerated than the added inconvenience of launching multiple new windows. Workable alternatives to alert users that they are going

off site is to indicate so with an interim page or dialog box, or to include a button for the Health Information Page in a consistent location on every page.

Credibility

Overall, participants thought that the information on the site was very trustworthy; the average of nine ratings on the post-test questionnaire for finding information on the site was 6.0, on a scale of one to seven, with one being “extremely low” credibility and seven being “extremely high” credibility. As a result, participants agreed that they would use the site again in the future (6.0) and recommend the site to others (5.7).

When participants were asked about how they judged the information on a web site to be trustworthy or not, they said they usually relied on gut instinct. When encountering a site for the first time, they assessed its credibility by comparing it to what they already thought they knew, but they rarely checked the site against other sites. Overall, branding, such as a recognizable name like Yale, and a trustworthy appearance were most commonly cited as a means for judging credibility. With regard to HIP, participants said that the while the page could include additional images of people, the “information is on target, credible, and useful.”

Findings for the Home Page (as a Whole)

Awareness and audience

One Key Question asks if users are aware of NIH’s research mission. Awareness of NIH, its purpose, affiliation within the Federal government, and institutes and centers remains limited. Because of the prominent logo, participants could easily identify who sponsored the Health Information Page site, but knew little of the sponsor and less of the institutes and centers. When asked about the intended audience and information available on the site, another Key Question, participants were generally very accurate about pointing out that the general public was the intended audience and that information about seemingly any major health issue could be located. Few participants from the general public, however, were confident in their knowledge and familiarity with NIH. Health professionals generally understood the research nature of NIH and that the HIP provided health information.

Labeling

Overall, participants appreciated the effort to use terms that the general public could understand. A couple of participants felt the information was initially intended for technically minded health professionals, but then indicated that the site was easy to use with information they (health consumers) could understand and use. A **persistent** problem dealt with the labeling of some links on the home page, such as the list of Special Programs.

A couple of participants wondered why **the links in Special Programs were separated rather than integrated** into the demographic or common conditions area of Find. (**Low** severity)

Recommendation 1

While the information in Special Programs is integrated at lower levels on the topic landing pages, the nature of the links is more cross-disciplinary, and thus more difficult to fit neatly into one category in the Find area. Alternatively, Other Health Agencies and Special Programs could be combined into Related Links, which is a label that is more familiar. Healthfinder could be included in this grouping, as well.

Call the NIH and Contact information under On This Page confused participants. Several participants remarked that they thought the information was redundant; they also wondered why contact information would be listed twice. (**Low** severity)

Recommendation 2

Combine both links to “Contact Us.”

Medline, Library References, Clinical Studies, and Drug Information can be repurposed. Medline and Clinical Trials by themselves on the home page were not meaningful to many participants from the general public; however, when a search query did not yield desired results, the link to search the database and/or the clinical trials database was very desirable. (**Medium** severity)

Recommendation 3

Some of these resources could be well served with their own respective landing pages. For example, combine drug related information, such as the drug information database, CEDAR, and IBIDS into an integrated section called Drug Information under Health and Wellness in the Find feature. Rename Procedures to Symptoms and Treatment and include expanded sections that allow users to find clinical trials information and resources on tests (“procedures” was too medical, as was “manifestations”). The databases in Library References can also be linked to in the search results page in the “Look up [X]” section, in addition to being included in a section to Find Articles.

Health consumer participants said that, usually, if they were not sure about a link, they probably wouldn’t use it. The most frequently mentioned included links for Medline Plus on the home page, the institute acronyms on the topic landing pages, and the advanced search options after a query had been conducted. Participants very rarely made the connection between the acronyms on the left side of the topic landing pages and the names of the institutes and centers in the main content area. In addition, if a PDF version

were the only link offered, participants would probably download it but not really understand what the PDF abbreviation meant. Other issues with labeling were technical terms for resources; for example, one participant said he didn't care what Medline is, and that he just wanted to get information from it (referring to a link at the bottom of a search results page).

Layout

One participant noticed that information below the fold seemed to be more technical and that healthcare professionals probably would make use of those resources more than those above the fold. There was no strong, overwhelming call for a section dedicated to health professionals from the health professionals. If there were an intention, however, to develop a subsection for health professionals, key phrases (such as Medline) would allow medical and professional users to home in on those items when needed. Several health professionals indicated, though, that they already use those features through other means. It was interesting to note that one participant wondered why there was no section for kids, i.e., KidsHealth.nih.gov.

Findings for Browse

The Browse section was not problematic for most participants. Participants were accurate in ascertaining its purpose and how it functions. Participants suggested including more see also references for acronyms, e.g., “DVT *see* Deep Vein Thrombosis.”

The spacing of topics (an alphabetical list of five items separated by white space from another list of five items) was initially cited as odd, but participants noted that the layout did make it easy to scan. Participants suggested keeping like words together, for example all words that begin with DA would be listed together so that no topics beginning with DE spanned any of those sets.

Findings for Most Requested Topics

While Search was the most popular first click, Most Requested Topics seemed to be the biggest disappointment, functionally speaking. Participants were somewhat frustrated with the prospect of not being able to quickly skim but rather having to read each health topic. Listing the topics alphabetically (also suggested in the heuristic review) was a frequent suggestion. One participant noted that if she didn't see her topic listed in the first “screen” (first seven lines displayed), then she would bypass that option. When asked to use MRT in subsequent tasks, however, participants liked that it was able to efficiently direct them to the topic landing page.

Participants could not quickly scan Most Requested Topics. They could not grasp the seemingly arbitrary order of the topics in the combo box. A couple of participants wondered if the order of topics was based on popularity. (**Medium** severity)

Recommendation 4

As mentioned in the heuristic usability review, organize the Most Requested Topics in alphabetical order.

Regarding labeling, one participant commented that he didn't know what "Colorectal Cancer" was and asked if it was colon cancer. If that was the case, he suggested using the simpler term, "Colon Cancer." Another participant suggested that Most Requested Topics should be renamed if the listing of topics were to be kept in non-alphabetical order. This participant suggested renaming it to "This Week's Hot Topics," for example if the list were updated weekly.

Some participants selected a topic from MRT and hit Enter with no result. Several more participants tried to double click on the topic with no result. One participant suggested adding the "go" button to the right so it would be more obvious; another suggested that the double-click option be "activated."

Participants wanted to double click on a topic to select it. Several participants wanted to be able to double click on the MRT topic of interest, thinking the double click would work. In addition, one participant said he **didn't notice the "Go" button** and that it should be located to the right of the combo box and that the double click action should also be enabled. (**Medium** severity)

Recommendation 5

Consider reformatting the combo box as a dropdown list; this will forestall the tendency to double-click a topic if coding for the double-click action it is not feasible. This reformatting also allows for the "Go" button to be in closer proximity, i.e., to the right, of the dropdown box.

Findings for Search

A problem identified in the earlier usability study, that is, being able to correctly spell the name of a disease in order to obtain good search results, seems to have been effectively addressed. Spelling help was used in a couple of cases and was seen as a useful tool. One problematic term, "arrhythmia," caused some spelling headaches for one impatient participant, but the spell checker feature was noticed and was used. One person described the Google "did you mean" feature but said the feature provided on the HIP site was fine.

Several participants had complaints about the search results, including saying the results were insufficient, too general, and/or did not really allow (extensive) searching on acronyms (e.g., DVT). When receiving too many search results, participants would refine search using additional terms, try again with new terms, or indicate that they would go elsewhere at that point.

Few would scan the content of the “overwhelming” results, but those who did suggested that the **search results page needs to be organized to permit scanning**. Most pages have left navigation that indicates what’s on the page. Search results, especially on long pages, do not contain this. (**Low** severity.)

Recommendation 6

Include left navigation On This Page to list the major sections from the resulting search, e.g., Categories, Health Topics, Publications, and Look Up This Topic.

One participant was surprised that **a search on ADD resulted in only one hit**; this particular participant was used to seeing more extensive search results like Google. Further, the participant who searched on the string “add” (with quotes) couldn’t understand why a search with quotes didn’t work. At this point, the participant noticed that there are probably predefined topics and suggested expanding topics in the database or allowing sitewide searching. (**Medium** severity)

Recommendation 7

If the database cannot be expanded to include a sitewide search, consider adding more acronyms to the existing database to improve search results. Consider using these acronyms to expand the Browse and Find sections, as well.

Whether effective feedback is provided users who fail to find (search effectively for) information is **debatable**. Several participants wanted to be able to use an advanced search feature or utilize advance search tools, e.g., wildcards, quotes, and Boolean operators within their search query, not knowing the option was available AFTER conducting a query. A few noticed the “match” dropdown but did not use it until probed about it. While the participants used these advanced search features, the automatic “ORing” of their query did not produce the expected or desired results. In a related vein, when participants’ searches yielded few or no results, some noticed the Medline and Clinical Trials options to find their topic at the bottom of the page. They explored those links and commented that the information displayed there was just what they were looking for. These options are seen as useful, especially when results from the Search database are limited.

Some participants eventually realized, and stated so verbally, that simpler searches, sometimes one-word queries, were more effective than more detailed searches with more terms (e.g., deep vein thrombosis cancer), which ended up with a larger set of search results than expected or desired. While it is probably not feasible to implement, one participant suggested option via using radio buttons to allow the option to search the health topics database only or to conduct a sitewide search of NIH’s resources.

Findings for Find

The effort to use Find was often mentioned by participants as a reason not to use it, i.e., the cognitive effort to deduce the most appropriate category/topic. A couple of participants noted that they liked the way topics are organized under Find, but then they said that would use Search before they would use Find. When asked to explain this interesting statement, one participant said she probably would not use Find because “the other ways are so much easier to use. I’d have to stop and think if asthma could be under ‘Lungs and Breathing.’ Search is a lot easier.”

A participant stated that, “the correlations between my topic and the categories are harder to make.” For example, participants were asked about where they might click for information about lung cancer. Most stated the expected Cancers or Lungs and Breathing links. Cancer was more popular since participants said it would be easier to find lung cancer in the Cancer section rather than all the other ailments that don’t relate to lung cancer under Lungs and Breathing. When asked where information about “hot flashes” might be located, participants suggested Women’s Health, Endocrine System (Hormones), Pregnancy and Reproduction, and Symptoms and Manifestations. The first two are the best choices, but the variety of responses shows that some topics are not easily categorized, which ultimately lead to the variety of possibilities participants identified.

In using the categories via Find (and also in Browse), participants remarked that they liked the “see also” references. It was interesting to note that if the participants were guided to a related topic, some would scroll down to the related topic to click on its title rather than click on the hotlinked topic; when asked about this, a couple of participants indicated that they thought it would take them further down the page to the topic and then they would have to click on that topic to get to the topic landing page.

When asked which, if any, topics were missing, participants suggested these to add to Common Conditions/Diseases:

- Diabetes
- Eating Disorders
- HIV/AIDS
- STDs

... and potentially any topic that is listed under Most Requested Topics since it could be considered a “common” condition if so many people request information about the health topic. One participant was particularly enthusiastic about the organization of topics under Find, and suggested that a listing of symptoms and related topics, i.e., expand on topics for cryptic terms such as “manifestations,” might also be due an expansion.

Revisit the labeling of Common Conditions/Diseases and Procedures.
(Medium severity)

Recommendation 8

Participants consistently stated that they wanted to see more “common conditions” listed and that the topics listed under Procedures were not meaningful to them. Consider adding Diabetes, Sexually Transmitted Diseases, and HIV/AIDS (perhaps co-located with Infections) in Common Conditions/Diseases. Also, consider breaking out Procedures from Therapies, and just using the term Symptoms or finding a synonym for Manifestations, such as Warning Signs.

Findings for Content

Overall, participants thought that the information on the site was relatively easy to understand; the average of nine ratings on the post-test questionnaire for understanding information on the site was 6.3, on a scale of one to seven, with one being “difficult to understand” and seven being “easy to understand.” Font attributes (size, style, color) were rated highly (6.2), as was the level of appropriateness of the information for the general public (6.1). A couple of participants were not fond of the lack of images, but others liked the uncluttered look of the home page. Participants did suggest including images both to illustrate points and to provide visual interest on the page.

A key question asked about participants’ overall satisfaction with the content. Broadly speaking, participants seemed satisfied with the level of detail provided about the diseases and conditions; the average of nine ratings on the post-test questionnaire for finding information on the site was 4.3, on a scale of one to seven, with one being “too little detail” and seven being “too much detail.” (Note that in this case, “neutral” can be seen as satisfied since the average indicates that there was not too much detail, nor that detail was lacking.) The ratings ranged from 3 to 6, with three ratings each of 4 and 5. When asked at the end of each task about their satisfaction with the information provided (asked only if they had completed the task), participants’ ratings, on the same scale, averaged 5.9. In addition, at the end of each completed task, participants were asked to rate the understandability of the information; on a scale of one to seven, participants rated the information provided 6.6 (on the average).

With regard to the health topics of interest, one participant commented that sickle cell anemia lacked detailed information, as did the topic landing pages for arrhythmia and specific learning disabilities. A couple of participants said the information was a good starting point, but they didn’t initially see that they were provided with the level of detail they wanted. For example, one participant was looking for information about how pesticides affect asthma. If more detailed information is indeed available from a particular institute, users could be made aware of this fact at this point in their exploration. As discussed in more detail later, links to institutes within NIH would be most useful if offered as contacts “for further information” and presented immediately following the set of links on a health topic provided by that institute. (Such links are currently provided prior to the list of publications published by a given institute, where they tend to be overlooked.).

Reading content

Overall, participants seemed satisfied with way disease and condition information was presented to facilitate scanning; the average of nine ratings on the post-test questionnaire for finding information on the site was 5.9, on a scale of one to seven, with one being “difficult” to scan and seven being “easy” to scan. It was difficult to obtain specific recommendations from participants about missing information that should be included on the topic landing pages; most said that they would just do a search in their favorite search engine or perhaps search the site to see if they could find what they were looking for.

In actuality, however, participants missed segments of content in the process of scanning links. If they tended to find information above the fold, then they tended not to scroll below the fold to look for more information. This tendency is **persistent**, as it was evident in the first usability study where participants were not able to locate information that was present on the bottom of the HIP.

In the topic landing pages, for example, those who did scroll down often said that **the information was overwhelming**. They had to spend time to read everything on the page to find what they wanted. (**Medium** severity)

Recommendation 9

Organize information by common categories, e.g., Fact Sheets, Treatment, How to Prevent [X], so that users can quickly scan information. Organization by institution was not helpful to participants. (There is further discussion about this in “Topic landing pages.”)

Participants were asked about their preferences for reading content online or printing instead. Likelihood to print out or read online depended on the participant’s ultimate purpose for the information. Usually, it would be printed out and read if the participant felt the information was:

- Important
- Too long to read on screen (ranging from a couple of screens to several pages of text)
- Necessary to read now, but no time to read on screen

A few participants noted that they would also bookmark the page, read it online and take notes, email the link to a friend, or cut and paste relevant sections to save or email. As far as format goes, participants just wanted to be able to scan information easily and quickly. Several noted that the PDF format (while not calling it “PDF format” specifically) was not easy to scan online, especially because of the columns in which fact sheets tended to be published.

It is hard to read PDFs online and few participants knew what PDF meant; even fewer preferred information in that format. In addition, PDFs may not be selected because some users have slow connections; participant wants option to have other formats available. (**Medium** severity)

Recommendation 10

Locate alternative formats, especially scannable HTML versions, which are meant to be read online. If this is not possible, consider asking NIH institutes and centers to identify documents targeted for conversion to non-PDF formats and list those as they become available.

Participants reacted positively to checklists, especially when they mistakenly believed it to be “interactive,” even noting that they would like to see more interactive features, such as a form that determines their risk for gestational diabetes. Participants rated very highly content that provided tables of contents, navigation within documents, and how-to information.

Topic landing pages

These topic landing pages successfully, in part, address an earlier identified need for participants to be able to locate information in the manner and on the topic they expected, regardless of who produces the information or where it’s located. However, because participants are not familiar with NIH, let alone its bureaucratic organization, the way information is organized by institute and center on the topic landing pages is not useful. Further, the acronyms in the left navigation have no meaning to most participants.

The agency/bureaucratic organization of information confuses participants.

This is a **persistent** problem, as participants did not comprehend that the various NIH institutes are the structure by which available disease information is presented. (**High** severity)

Recommendation 11

As suggested by many participants, information is more useful if it is organized by subtopic, rather than by the producing or sponsoring institute or center. Participants said they’d like to see more information up front that talked about basic facts (fact sheets), patient advocacy, causes, treatment, and symptoms. The related links were seen as useful, as were the links to search Medline and Clinical Trials. Institutes and centers can still be referenced, but could be treated as information “sponsors,” e.g., NIMH and others, that would allow users to search for more detailed information.

As suggested in the heuristic review and supported in the present usability study, the acronyms in the left navigation on the topic landing pages were not understood. Probing with a couple of participants led to guesses that the abbreviations probably related to the different institutions and centers listed to the right.

“Resources” in the left navigation is not helpful since it does not readily correspond to any page heading or link to any obvious anchor point. This is also a **persistent** problem. (**High** severity.)

Recommendation 12

Organizing the information by some other means, such as What is X, How is X Treated, etc. since those topics seem to correspond to the types of questions that participants had. In particular, participants reacted favorably to the organization information on NHLBI DCI site. Having the institution listed first makes users just overlook the information because they're focused on the topic rather than who produced it.

External content

One participant explained that he liked how main words and phrases are bulleted, in bold or otherwise highlighted (linked) so that he doesn't have to read a lot. This participant explained that he liked being able to find information quickly. This corresponds to Nielsen's findings that users prefer to hunt for information (skim, scan, select) before taking the time to read something in depth. This "information scent" indicates whether users feel they are getting closer to the desired information or if they feel frustrated because links (labels, implied information) do not meet expectations. Pogo-sticking behavior (randomly clicking links) indicates that labels and information are not meeting users' expectations. A few users encountered this problem in searching for a way back to the HIP starting page and when exploring some sections of the Find categories.

In linking to external pages, one participant was not sure why the layout changed when he linked to an institute's fact sheet. Other participants were unfazed and said they noticed the change in layout since they realized they were being linked to external sites. Upon further investigation, participants did not realize these sites were in fact institutes and centers affiliated with NIH. If the goal of the site is to get users to information, then the site is succeeding. If the goal is to also educate users to the fact that these institutes and centers are part of NIH, then this is not being conveyed. To paraphrase one participant, the participants don't care who has the information, they just want to answer their health questions.

Several participants indicated surprise at seeing information on an interim page for "Controlling Your Asthma," which implied one would have to pay to view the information. This was not surprising, conceptually speaking, since some commercial web sites do require registration and payment, but the cost information caught their attention before the fact that seeing the publication online was free, as was ordering a copy of the publication.


A link to an asthma brochure surprised some participants who expected to read the document directly. On the interim page for "Facts About Controlling Your Asthma" <http://www.nhlbi.nih.gov/health/public/lung/asthma/asth_fs.htm> with a screen setting at 800x600, it is not apparent until a user scrolls down that the brochure is available in PDF. (Low severity)

Recommendation 13

Where possible, link directly to the PDF version (provide file size) and/or link to other alternatives for users not familiar or desiring to see PDFs. (The use of HTML alternatives would also address one participant's concern about downloading potential viruses from unknown web sites.)

Participants seemed split in their preference for seeing the interim page; several wanted it to link directly to the document while others were confused by the misperception of having to pay for information (probing revealed a need for more careful reading). Others wanted to be able to see information in non-PDF formats; some indicated they didn't know what PDFs were.

On a couple of occasions, participants were looking for information about learning disabilities and the link to the publication showed a page saying the publication wasn't available. It was helpful that it wasn't just a 404 error, but if a database is maintained manually, the link should be regularly checked using LinkBot or a similar tool.



Usability Study of the NIH Calendar of Events Web Site

Final Report

February 28, 2003

Cynthia Mariel, Beth Archibald, Dick Horst





Study objective

- To assess the NIH online calendar by conducting usability testing sessions with users or likely users of the online calendar while focusing on 4 key issues:
 - Users' level of satisfaction.
 - Ease of navigating the site
 - Impact of page load times.
 - Users' suggestions for improvement.



Methodology

- UserWorks' staff, while working out of the OLIB office at NIH, conducted individual test sessions lasting approximately 1 hour each with:
 - 12 participants who were Browsers of the calendar
 - 12 participants who were Enterers of information to the calendar.
- For both groups, the test session consisted of:
 - Initial interview about their experience with the calendar
 - Observation of the user as he/she performed typical tasks with the calendar, "thinking aloud"
 - Post-test user satisfaction questionnaire
 - Debriefing interview

Report on Browsing the Calendar

View by:



- Day
- Week
- Month
- Year

Options:

- Search
- Add
- Modify
- FAQ
- Deadlines
- Email list
- Feedback

Quick find:

Find


 NIH Calendar of Events (Yellow Sheet)  [NIH Home Page](#)

Welcome!

View events by day, week, month, or year. Simply click on the buttons in the top left corner. Events are free and open to the public.

Want to add your event to the calendar? Click the "Add" button to the left to submit your information. [View deadline dates](#) to submit your event for the printed "Yellow Sheet" flyer.

Sign language interpretation is available upon request. Please contact the person or office sponsoring the event you plan to attend. To arrange sign language interpretation for an event go to <http://dss.ors.od.nih.gov/interpreting/>

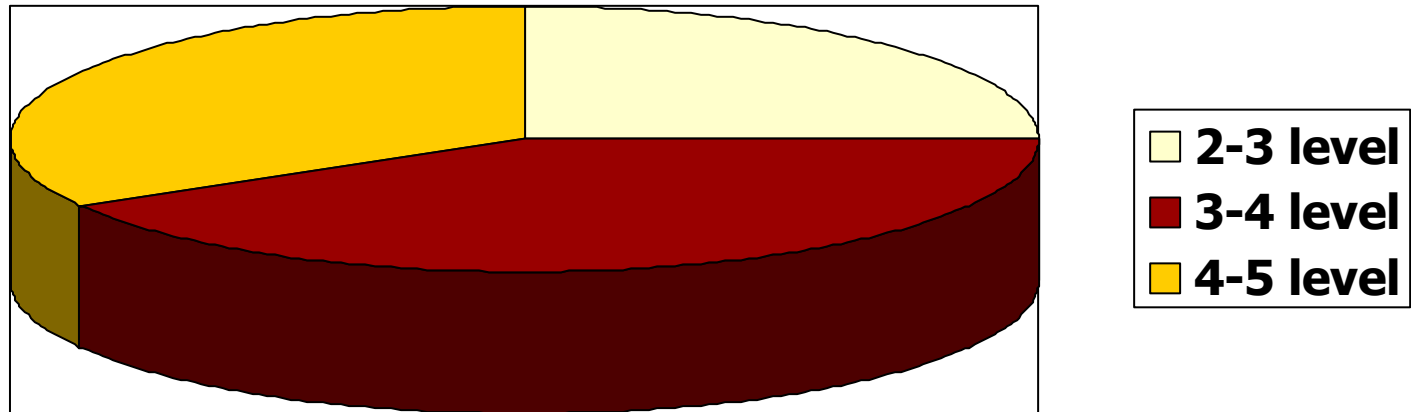
 For a printable version of this page, check the boxes for the events you want displayed. Then click [Printable version](#) | [Check all boxes](#) | [Uncheck all boxes](#)



Browsers' role at NIH

- Participants fit the Browser screener profile if they used the online calendar for the purpose of perusing it for events of interest.
- The 12 Browsers worked in the following capacities at NIH:
 - 3 were scientists.
 - 2 were psychologists.
 - 2 were science writers/editors.
 - 1 was a deputy director.
 - 2 were program staff (specialist & analyst; the specialist attended events related to her PhD studies).
 - 2 were administrative support staff.

Browsers' computer competence



Computer competence rating for all Browsers
5-point rating scale: 1 = low and 5 = high

UserWorks made a subjective assessment of Browsers' level of computer competence at the end of each session.

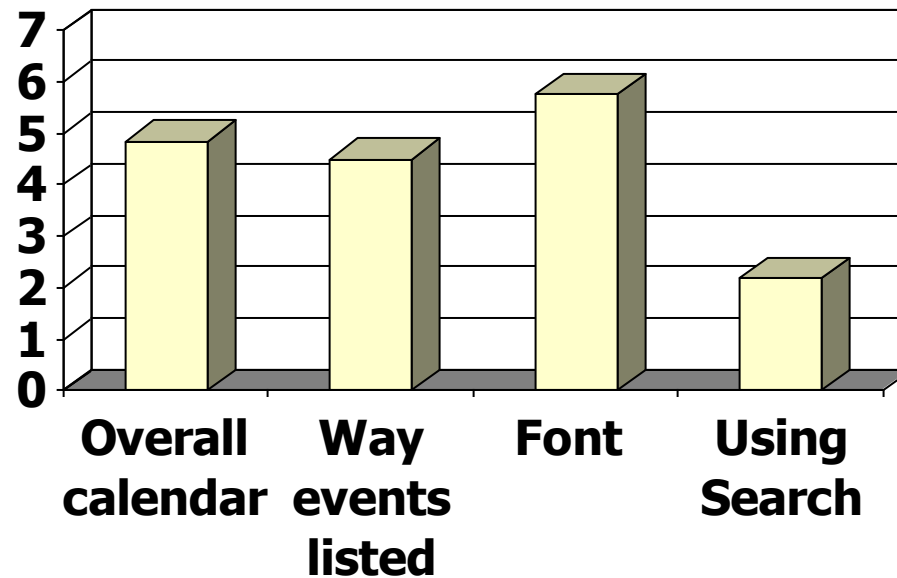
NIH event calendar usage by Browsers

- NIH event calendar regularly used:
 - Online calendar only (3 of 12)
 - Print and online calendars (3 of 12)
 - Print calendar only (3 of 12)
 - E-mail calendar only (3 of 12)
- Of the 6 of 12 Browsers who regularly use the online calendar.
 - 3 use the online calendar 1-3 times/week.
 - 3 use the online calendar 1-3 times/month.

Post-test questions assessing ease of using the calendar

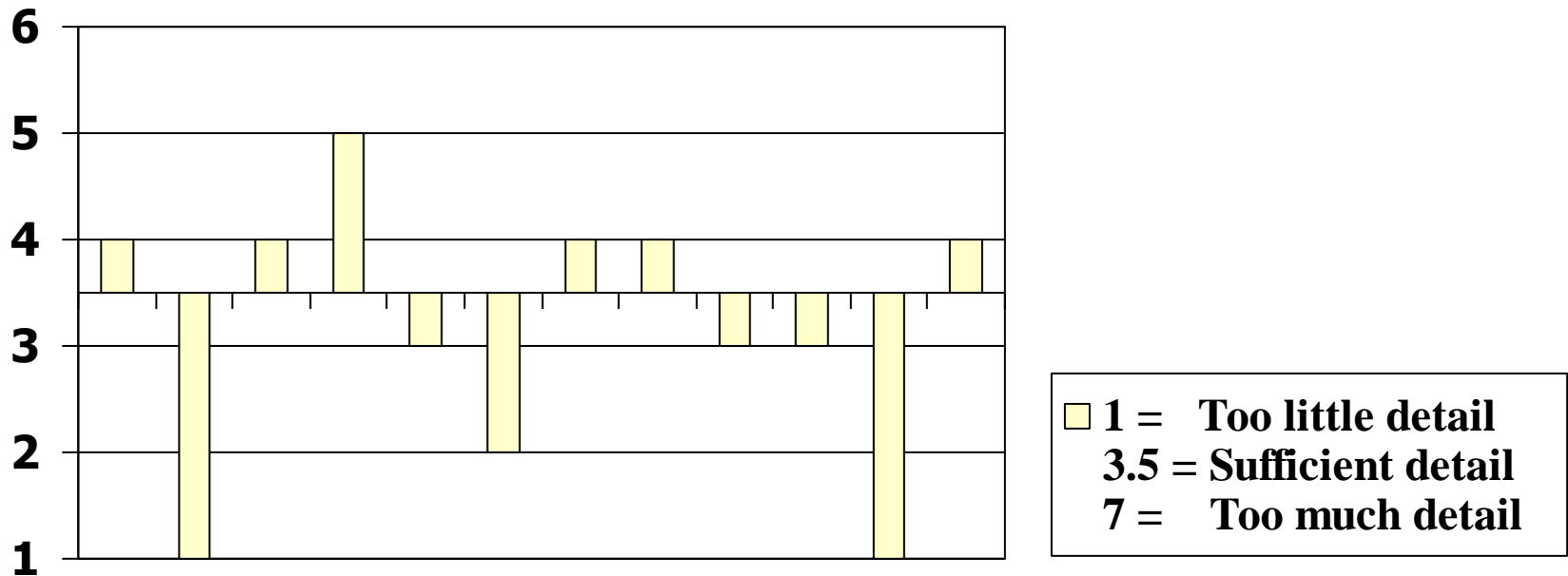
- Overall, the online calendar made finding information about events....
- The way announcements for events were listed on the main page of the calendar made finding events....
- The size, style, and color of the font (lettering) on the site made using the calendar....
- Using the Search on the calendar made finding events on the calendar....

Post-test average ratings: Ease/difficulty using calendar



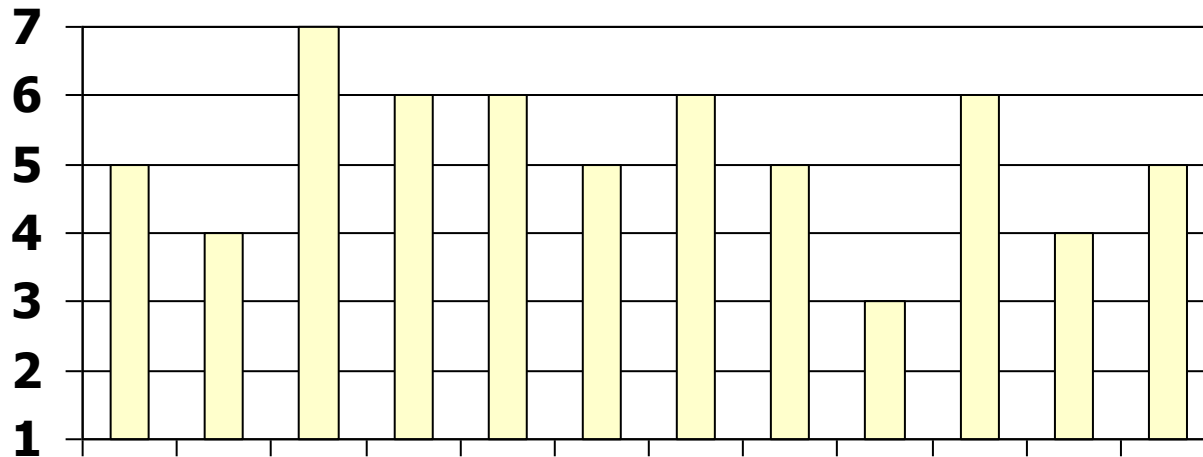
■ 7-point rating scale: 1 = Difficult 7 = Easy
Ratings averaged across all Browsers.

Post-test rating by Browsers: Satisfaction with event details



Satisfaction ratings for 12 Browsers
Average rating across all Browsers = 3.17

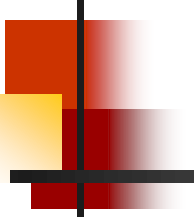
Post-test rating by Browsers: Satisfaction w/ page load time



7-point rating scale:
1 = Disagree strongly 7 = Agree strongly
Average rating across all Browsers = 5.17

Post-test: Aspects of online calendar particularly liked

- Flexibility to look through current, future, and past events.
- Link to Event Details.
- Quick Find.
- Resource of compiled NIH event information
- Workable links.
- Link to CIT.
- Designating events as Broadcast, Major, and/or CME events.



Post-test comments: Aspects of calendar particularly liked

- “[I like] that all this information is compiled in one place.”
- “[I like ability] to scan through upcoming events.”
- “[I like] relatively compact listing and ability to pull up more information.”
- “Having the calendar online is so much easier to [use] then having to look through the sheets sent around.”

Post-test: Aspects of calendar particularly disliked



- Search function
 - Noted by 7 of 11 participants who used Search.
 - Of the 4 of 11 who did not indicate Search, 2 mentioned Advance Search as the aspect they particularly disliked.
- Inactive printer icon displayed on screen.
- Instructions for using calendar.

Categories of usability problems

- Problems with the online calendar that create the most serious barriers to user performance and satisfaction.
 - Information architecture
 - Knowledge of the calendar's distribution and workings
 - Layout and design
 - Need for enhanced features

(These categories will be addressed separately in the following slides)



Findings and Recommendations



1. Information architecture

- Finding specific events of interest was difficult due to:
 - Categorizing all events as either NIH Science or Other Events.
 - Display of events.
 - Options on navigation bar are limited to view by chronology.
 - View by Day, Week, Month, or Year subdivides announcements list into NIH Science events and Other Events.
 - Arrangement of event announcement information diminishes ability to scan and understand information.
 - Search function.



Categorizing events

- Currently, events listed on the calendar are categorized into two groups—NIH Science and Other Events.
- Browsers did not always know, perceive, or understand:
 - All events on the calendar are categorized as either NIH Science or Other Events.
 - List of event announcements is divided into two chronological lists—one for NIH Science and one for Other Events.
 - Why some science events are listed in the Other Events section.

Task: Find class on Web resources at NIH

- From reading task participants knew:
 - Brief description of class.
 - Class is scheduled for a Tuesday afternoon. Browsers need to determine if class takes place this Tuesday or next Tuesday.

Task: Find class on Web resources at NIH

- Of the 12 of 12 Browsers attempting this task:
 - 10 of 12 found the event.
 - 5 of the 10 had difficulty, and 2 of the 5 required prompting.
 - 2 of 12 failed to complete the task.

Found in Other Events

View by:

[Day](#)

[Week](#)

[Month](#)

[Year](#)

Options:

[Search](#)

[Add](#)

[Modify](#)

[FAQ](#)

[Deadlines](#)

[Email list](#)

[Feedback](#)

Quick find:

[Find](#)

- ☒ 4:00 pm [NIH Structural Biology Interest Group: New Methods Yield New Insights into the Remarkable Conservation of Actin Sequence and Structure ; Edward Egelman Biochemistry and Molecular Genetics, University of Virginia; Building 50, Main Auditorium](#)

Other Events

 Time Event Information

Tuesday, November 19, 2002

- ☒ 11:30 am [PKD1/2 Complex Directly Regulates JAK-STAT Pathway to Control Cell Growth; Anil Bhunia, Ph.D. Johns Hopkins University School of Medicine; USUHS, Building A, Lecture Room A](#)
- ☒ 11:45 am [Noontime Christian Fellowship; Reverend Jay Jennette; Building 21, 237](#)
- ☒  12:30 pm [NIH Competitive Sourcing Program \(A-76\) Information Meeting; Building 45 \(Natcher Building\), Auditorium](#)
- ☒ 1:30 pm [Introduction to NIH Information Resources on the Web; Dennis Rodrigues Chief, On-line Information Branch, Office of Communication and Public Liaison; Building 12A, B51](#)

 For a printer-friendly page, check the boxes next to the events you want to view. Then click [Printable version](#) | [Check all boxes](#) | [Uncheck all boxes](#)

Task: Find class on Web resources at NIH

- Of the 10 who found the event:
 - 9 of 10 found the event by viewing events for the current day or by using View by Day.
 - In addition, nearly all found the event by scrolling the list rather than purposefully seeking out the Other Events section.

Task: Find class on Web resources at NIH

- The most significant barriers to finding this event resulted when Browsers:
 - Did not see the Other Events section in the list of event announcements, even when familiar with the Other section of the calendar list.
 - Did not realize the list of event announcements was divided into two sections—NIH Science and Other Events.

Task: Find class about Web resources at NIH

- Comments made during and after attempting task:
 - “I’m not used to looking for stuff under Other.”
 - “Took longer than what I would have liked to spend.”
 - “When you View by Month, it doesn’t show all the Other Events...This is crazy.” [Misperception]
 - “Other [Events] didn’t catch my attention...I didn’t see the [Other] bar [on the screen]. I was focusing more on the date.”
 - “It seems kind of dumb not to have [all] things [events] in chronological order.”

Viewing events only by chronology

- View options on navigation bar are limited to viewing events by day, week, month, or year.
- Browsers wanted to view events by areas of professional interest to increase their awareness of events of interest and to save time by deleting from view events of no interest.

Subdivision of announcement list

- Scrolling down the calendar to review events for a single day was relatively simple because:
 - The list of events was short.
 - NIH Science events and Other Events were clustered close together. As a result, the subdivision announcement list was not as problematic as viewing events during a larger time range.

Viewing a single day: Easier to notice subdivision of list

View by:

- Day
- Week
- Month
- Year

Options:

- Search
- Add
- Modify
- FAQ
- Deadlines
- Email list
- Feedback

Quick find:

Icon key:

- Major Event
- Media Event
- Broadcast
- CME Credit

For a printer-friendly page, check the boxes next to the events you want to view.
Then click [Printable version](#) | [Check all boxes](#) | [Uncheck all boxes](#)

October 25, 2002

NIH Science

	Time	Event Information
Friday, October 25, 2002		
<input checked="" type="checkbox"/>	9:00 am	Effects of Osmotic Stress on Cells in vivo and in Tissue Culture; Dr. Zheng Zhang NHLBI, Lab of Kidney and Electrolyte Metabolism; Building 10 (Clinical Center), 7S235
<input checked="" type="checkbox"/>	10:30 am	Membrane Fusion Mechanism: New Insights from Theory and Simulation; Kirill Katsov Ph.D. Department of Physics University of Washington; Building 10 (Clinical Center), 10S237
<input checked="" type="checkbox"/>	1:00 pm	Structural Analysis Quick Start; Dr. Medha Bhagwat NCBI; Building 12A, B51
<input checked="" type="checkbox"/>	1:00 pm	Therapeutic Induction of Fetal Hemoglobin: New Insights and New Mechanisms; George F. Atweh, M.D./Professor of Medicine Mount Sinai School of Medicine; Building 10 (Clinical Center), 9S235 (Burim Room)
<input checked="" type="checkbox"/>	2:00 pm	Affymetrix GeneChip User Group Meeting; Building 45 (Natcher Building), Balcony B

Other Events

	Time	Event Information
Friday, October 25, 2002		
<input checked="" type="checkbox"/>	9:00 am	Introduction to Programming; Patricia Ashburn Division of Customer Support, CIT; Fernwood Building, Lower Level Classroom

Subdivision of announcement list



- Scrolling down the calendar to review events when viewing by week, month, or year was difficult.
 - NIH Science and Other Events announcements for the same day at opposite ends of a very long page. As a result, the Other Events section was not found.
 - When looking for a specific event on the View by Month or Year display, the long list of events overwhelmed Browsers. As a result, they abandoned the path.

View by Month: Difficult to notice subdivision of list

NIH Calendar of Events (Yellow Sheet) - Microsoft Internet Explorer

Address: http://calendar.nih.gov/cgi-bin/calendar

View by:

- Day
- Week
- Month
- Year

Options:

- Search
- Add
- Modify
- FAQ
- Deadlines
- Email list
- Feedback

Quick find:

Find

Icon key:

- Major Event
- Media Event
- Broadcast
- CME CME Credit

Friday, October 4, 2002

<input checked="" type="checkbox"/>	10/3 - 10/4	8:30 am	Hereditary Dysautonomias: Current Knowledge and Collaborations for the Future; Doubletree Hotel, Plaza I - Ballroom
<input checked="" type="checkbox"/>	10/4	9:00 am	The Diagnostic Potential of the Human Plasma Proteome; N. Leigh Anderson, Ph.D. Founder and CEO Plasma Proteome Institute; Building 50, 1st Floor Conference Room
<input checked="" type="checkbox"/>	10/4	11:00 am	Neuro Chemical Mechanisms of Alcohol Consumption; Dr. Rueben A. Gonzales, Ph.D. Professor of Pharmacology University of Texas at Austin; Flow Building, Conference Room 51
<input checked="" type="checkbox"/>	10/4	11:00 am	New Approaches to Studying Host Cell Invasion by the Opportunistic Pathogen Toxoplasma gondii; Dr. Gary Ward University of Vermont, NCI at Frederick, Building 430, Conference room
<input checked="" type="checkbox"/>	10/4	12:00 pm	Transcriptional Regulation of Myeloid Differentiation and Leukemogenesis; Dr. Alan Friedman Associate Professor of Oncology & Pediatrics Johns Hopkins University, NCI at Frederick, Building 426, Conference Room
<input checked="" type="checkbox"/>	10/4	1:00 pm	The Anopheles & Plasmodium Genomes: Completing the Malaria Triad; Building 10 (Clinical Center), Lipsett Amphitheatre
<input checked="" type="checkbox"/>	10/4	2:00 pm	Ligands for Imaging A-Beta Plaques in Alzheimer's Disease; Hank F. Kung University of Pennsylvania; Building 10 (Clinical Center), 1C520
<input checked="" type="checkbox"/>	10/4	2:15 pm	Role of PTHRP in Malignancy and in Normal Skeletal Development; Dr. David Goltzman Chairman, Dept. of Medicine McGill University; Building 10 (Clinical Center), 9C235 (Bunim Room)

Monday, October 7, 2002

[Anthrax Toxin: Structure, Activity, and New Inhibitors; R. John Collier, Ph.D.](#)



Recommendations: Viewing

- Add option to View by Topic to the navigation bar.
 - This option would allow users to regularly view events on the calendar by the selected topics.
 - Events not related to the selected topics would not appear on the calendar with the possible exception of some key events identified by OLIB.
 - Allow users to select 3-4 default topics.



Recommendations: Viewing

- On the View by Topic page:
 - Provide a list of key topic headings relevant to event listings and the target audience such as NIH institutes, research groups, lecture series, etc. (similar to the list appearing on the Advanced Search page).
 - Allow users to select 3-4 default topics.
 - Include a Customization option so users can further customize the display. This option would present as a default the customized view of the calendar.
 - Those who enter events will need to identify key topics for each event.



Recommendations: Viewing

- Change default for viewing list of event announcements to that of combining NIH Science and Other Events.
- On navigation bar add an option to view event list subdivided into NIH Science events and Other Events.
- Include explanation of NIH Science events and of Other Events as a hyperlink on option to view subdivided list.

Arrangement of announcement information

- Ability to quickly and effectively scan the event announcements list was compromised because the information was not arranged in a hierarchical manner.
 - Various types of information appearing in the event announcement, such as title, speaker, time, and location, ran together.
 - All information contained in an event announcement appeared as one long hyperlink.

Announcement information difficult to scan and perceive

View by:

- Day
- Week
- Month
- Year

Options:

- Search
- Add
- Modify
- FAQ
- Deadlines
- E-mail list
- Feedback

Quick find:

Find

Icon key:

- Major Event
- Media Event
- Broadcast
- CME Credit

Wednesday, October 23, 2002

- | | | | |
|-------------------------------------|--|----------|--|
| <input checked="" type="checkbox"/> | | 9:00 am | <u>Scientific Workshop: Menopausal Hormone Therapy ; Elias A. Zerhouni, M.D. Director, NIH; Tommy G. Thompson (Invited) Secretary U.S. Dept. of Health and Human Services; Vivian W. Pinn, M.D. Associate Director for Research on Women's Health Director, Office of Research on Women's Health, NIH; Many Additional Speakers; Building 45 (Natcher Building), Conference Center</u> |
| <input checked="" type="checkbox"/> | | 10:30 am | <u>Dynamics of Saccharide Coated Carboxy-myoglobin; Lorenze Cordone Professor Dept. Sci. Physics & Astronomy, University of Palermo ; Building 5, 127</u> |
| <input checked="" type="checkbox"/> | | 10:30 am | <u>Mechanics of DNA Packing in Viruses; Robert Phillips, Ph.D. Professor, Engineering and Applied Science California Institute of Technology; Building 50, 1327</u> |
| <input checked="" type="checkbox"/> | | 11:00 am | <u>Movie Smoking as a Causal Influence on Teen Smoking; Dr. James Sargent, M.D. Professor Pediatrics and Adolescent Medicine Department of PediatricsDartmouth-Hitchcock Medical Center; Executive Plaza North, Conference Room G</u> |
| <input checked="" type="checkbox"/> | | 12:00 pm | <u>1)Molecular Mechanisms and Treatment of Renal Sodium Retention in Nephrotic Syndrome-Dr. Georges Deschenes, NHLBI 2) Blood Collection and Transfusion: The Disaster Response-Dr. Harvey Klein, CC; Building 10 (Clinical Center), Lipsett Amphitheater</u> |
| <input checked="" type="checkbox"/> | | 12:00 pm | <u>Extracardiac Cells and the Role of Connexins in Cardiovascular Development; Dr. Cecilia Lo Chief, Laboratory of Developmental Biology, NHLBI NIH, Building 6B, 429</u> |
| <input checked="" type="checkbox"/> | | 2:00 pm | <u>1)EGF Receptor Circuit Operation: A Paradigm from Quantitative Cell Biology 2)The Robustness of Evolved Genetic Networks Would Be Astonishing Were It Not Essential 3) The Cell Cycle: Spatial and Temporal Control of a Multicomponent Genetic Network ; Douglas A. Lauffenburger, Ph.D. Professor and Co-Director, Biological Engineering Division MIT; Garrett M. Odell, Ph.D. Professor, Department of Zoology University of Washington; Lucille Shapiro, Ph.D. Ludwig Professor of Cancer Research Stanford University School of Medicine; Building 10 (Clinical Center), Masur Auditorium</u> |
| | | | <u>Genetic and Family Influence on Substance Dependence and Antisocial Behavior In</u> |



Event announcements

- 6 browsers indicated that the event announcements were not easy to read.
 - “I got lost in those titles...It’s busy because there’s such a long list of presenters...It doesn’t draw my eyes to any one thing.”
 - “It’s big. Many lines. Messy.”
 - “[All the underlining] is a little bit much.”
 - “Difficult to read. A lot of blue writing.”



Recommendations: Event list

- To improve scanning and understanding of announcement information display information in a hierarchical arrangement.
 - List event information for each announcement on separate lines in the following format:
 - Title
 - Sponsor/Series
 - Speaker
 - Location
 - Hyperlink only the title line for each announcement.



Recommendations: Event list

- Add day of week to the date at the top of the list.
- Increase the visibility of the NIH Science banner and the Other Events banner on the subdivided events list:
 - Use of color, font, and size to increase visibility. Choose a banner color that compliments, but stands apart from other colors used on the page.
 - Add a very brief description to NIH Science and to Other Events banners that explains meaning of respective heading and where on list related events appear.



Search function

- Keyword searches using the Search function did not allow for “fuzzy searching”; therefore search, did not produce the sought after results.



Search function

- Used by many Browsers when attempting the following tasks:
 - Finding hormone treatment workshop.
 - Finding Shannon lecture.
- Browsers assessed the Search function as the most problematic feature of the online calendar.



Task: Find workshop on hormone treatment for women

- From reading task, participants knew:
 - Brief description of event.
 - Event had taken place sometime in October 2002; therefore, event already had passed.

Task: Find workshop on hormone treatment for women

- Browsers first attempted the task using any method to find the event.
- Browsers later were asked to repeat the task using the Search function to find the event.
- 2 of 11 Browsers used the Search function during their first attempt of the task; therefore, they did not repeat task.



Task: Find workshop on hormone treatment for women—Search only

- In total, Browsers used the Search function 10 times to attempt this task whether assigned to use Search or elected to use Search.
 - 8 of 10 attempts to use the Search function failed.

Task: Find Shannon lecture scheduled for November 2002

- From reading task, participants knew:
 - Event is a James A. Shannon Lecture.
 - Lecture will occur/occurred in November 2002.
 - Lecture takes place in Masur Auditorium.
 - Event offers continuing medical education credit (CME).

Task: Find Shannon lecture scheduled for November 2002

- 8 of 12 Browsers attempted the task.
 - 3 successfully completed the task.
 - 1 found event after using 1 path (Search by Event Type with CME Credit Event selected).
 - 1 found event after using 2 paths (View by Month and Quick Find).
 - 1 found event after using 4 paths (CME Search, Search/Event Title, View by Month, Quick Find).
 - 5 failed to find the event.



Search function—Problems

- The Search button was not readily apparent on the navigation bar.
- Browsers had difficulty successfully finding events while using the Search function.
- Search parameters are not saved after using the Back button or Modify Search button to return from the main Search page. “It undid all my stuff.”
- Similar key words inserted into Search and Quick Find sometimes produced different results.

Search button buried

View by:

- Day
- Week
- Month
- Year

Options:

- Search**
- Add
- Modify
- FAQ
- Deadlines
- E-mail list
- Feedback

Quick find:

Find

Iron key:

<input checked="" type="checkbox"/>	CME	11:00 am	Gene Expression in Endometrial Cancers, Dr. David S. Lugg, M.D., FRC Path, Department of Integrative Biology and Pharmacology, University of Texas Center, Executive Plaza North, Conference Room G
<input checked="" type="checkbox"/>	 CME	12:00 pm	Contemporary Clinical Medicine: Great Teachers - Cancer Pain: Its Science Politics-Dr. Kathleen Foley, Memorial Sloan-Kettering Cancer Center; Bi Center), Masur Auditorium
<input checked="" type="checkbox"/>		12:00 pm	HIV-1 Reverse Transcriptase: Mechanisms of Nucleotide Analog Resistance Hughes NCI/Retroviral Replication Lab; NCI at Frederick, Building 549, A
<input checked="" type="checkbox"/>		1:00 pm	Citrate-mediated Iron-transport in E. coli: A Crystallographic Study; Wyatt \ Building 5, 127
<input checked="" type="checkbox"/>		1:00 pm	High-Resolution Ultrasonic Spectroscopy for Analysis Biopolymers and B Buckin Professor Department of Chemistry, University College ; Building :
<input checked="" type="checkbox"/>		2:00 pm	The Regulation of Cytokine Expression by the Transcriptional Factor AIRE M.D., Ph.D. Dept of Pediatrics Universita Di Brescia; Building 10 (Clinical
<input checked="" type="checkbox"/>	 CME	3:00 pm	Biological Circuits with Small RNA Switches; Susan Gottesman, Ph.D. C Genetics Section, Laboratory of Molecular Biology National Cancer Inst 10 (Clinical Center), Masur Auditorium
<input checked="" type="checkbox"/>		4:15 pm	* CANCELLED - Th2 Cells: Factors Influencing Activation; Kim Bottomly P Department of Immunobiology, Yale University School of Medicine; Buildi

Keyword search deleted

 NIH Calendar of Events (Yellow Sheet)  [Cale](#)

Search the Calendar



Search method:

Enter words or phrases to search. Then click

menopause

(separated by semicolons)

- ☐ Find ANY words or phrases ☒ Find ALL words or phrases
☐ Past events ☒ Current and future events ☐ All events

 NIH Calendar of Events (Yellow Sheet)  [Cale](#)

Search the Calendar

Search method:

Enter words or phrases to search. Then click

(separated by semicolons)

- ☐ Find ANY words or phrases ☒ Find ALL words or phrases
☐ Past events ☒ Current and future events ☐ All events



Search function: Problems

- Options in Dropdown box not readily seen.
- Search function is not as broad as Quick Find.
- Search function does not allow “fuzzy searching.” As a result, a keyword search on “menopause” does not bring up an event with “menopausal” in the title.
- Advanced Search was formidable and did not product desired results.

Search options not readily seen in dropdown box

Search the Calendar

Search method: Event date

Option 1 - Choose a single day. Then click **Submit**

Display events on: Jan 15 2003

Option 2 - Choose a range of days. Then click **Submit**

Display events from: Jan 15 2003
to: Jan 15 2003

Search the Calendar

Search method: Event title

Enter words or phrases **click** **Submit**

(separated by semicolon)

☐ Find ANY words or phrases ☒ Find ALL words or phrases

☐ Past events ☒ Current and future events ☐ All events

Advanced Search

View by:

- Day
- Week
- Month
- Year

Options:

- Search
- Add
- Modify
- FAQ
- Deadlines
- E-mail list
- Feedback

Quick find:

Find

Icon key:

- Major Event
- Media Event
- Broadcast
- CME Credit

Search the Calendar

Search method:

Enter any search criteria. Then click **Submit**

Time frame: ☐ Past events ☒ Current and future events ☐ All events

☐ Media Events ☐ Major Events ☐ CME Credited Events

Single day:

or

Range of days: to

Type of event:

Words in event title: (Separated by semicolons)

☒ Find ALL words ☐ Find ANY words

Location: or



Search function—CME Search

- Results that appeared after conducting a CME Search were difficult to comprehend.
 - The CME Search could not be limited by specific timeframe or keyword; as a result, the search results were extensive.
 - Because the search results list was so large, Browsers abandoned the path.
 - Browsers did not notice the year associated with the event date displayed in the CME Search results. Because the display of CME Search results listed the oldest events at the top and the most recent events at the bottom, Browsers read through events taking place in a time period of no interest to them.

CME Search results in an excessive number of matches


View by:

- Day
- Week
- Month
- Year

Options:

- Search
- Add
- Modify
- FAQ
- Deadlines
- E-mail list
- Feedback

Quick find:

NIH Calendar of Events (Yellow Sheet)  Calenc

Search the Calendar

Search method:

Enter any search criteria. Then click **Submit**

Time Frame: ☐ Past events ☒ Current and future events ☐ All events

Search the Calendar

Month


Options:

- Search
- Add
- Modify
- FAQ
- Deadlines
- E-mail list
- Feedback

Quick find:


New Search: or **Modify prior search**

Sort results by: ☒ Date/Time ☐ NIH Science/Other


 For a printable version of this page, check the boxes for the events you want displayed.

Then click **Printable version** [Check all boxes](#) | [Uncheck all boxes](#)

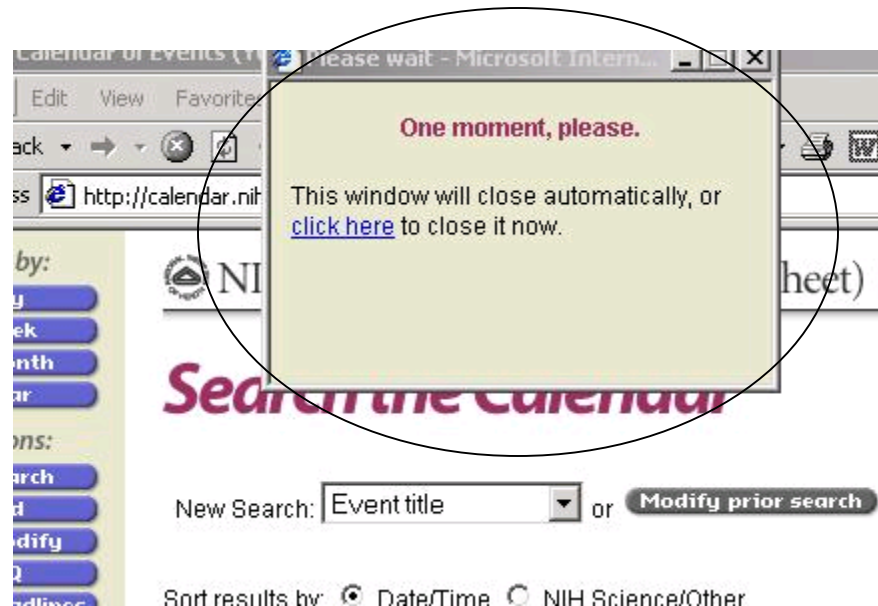
Your search for current and future events that have all of the phrases "", ordered by start date yielded 251 matches.

	Date	Time	Event Information
<input checked="" type="checkbox"/>	Jan 14-15, 2003	7:30 am	Dietary Supplement Use in the Elderly Conference; Various Speakers; Building 45 (Natcher Building), Auditorium

Icon key:

-  Major Event

Pop-up box irritated some



Search function: Additional comments during session

- I once [while in my office] tried to find something on the calendar and I couldn't find it....I almost didn't go [to the event] because I was so frustrated.
- [Calendar] is good to use if one simply wants to find the happenings of the day without any particular focus—but, once one searches the Web site, [the calendar] provides poor results.



Recommendations: Search

- Remove the Search button from the navigation bar.
 - On the results page for Quick Find, add a well defined area above the list of Quick Find results.
 - Label the area with a heading such as “Narrow Your Search” and incorporate the Search function into this area.



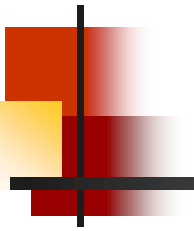
Recommendations: Search

- Collapse the Search Method dropdown box containing Title, Date, Type, Advanced Search, and CME Search into the Narrow Your Search area that includes options for:
 - Keyword field.
 - Event type dropdown with a limited number of options listed that reflect the most common event descriptions.
 - Timeframe with options for searching Past, Current & Future or All events, or events for a specific month and year.



Recommendations: Search

- Eliminate need for using semicolons and options for Finding Any or Finding All words or phrases.
- List timeframe options in a vertical alignment so users do not overlook the various options.



2. “Marketing” (Knowledge about calendar and its workings)

- Target audience has limited knowledge about:
 - How to access the online calendar from the NIH home page.
 - Range of NIH events listed on the online calendar.
 - Understanding “NIH Science” versus “Other Events.”
 - Receiving calendar by e-mail.



Knowledge of online calendar

- 11 of 12 browsers knew of the online calendar; however,
 - A deputy director who uses the NIH home page frequently was not aware of the calendar.
 - A Web savvy program analyst only learned of the online calendar a couple days prior to the study when a colleague shared a handout from a NIH Web resources class.



Knowledge of e-mail calendar

- 8 of 12 browsers knew of e-mail calendar.
- Of the 4 of 12 browsers who did not know of the e-mail calendar, 3 use the online calendar.



Knowledge of print calendar

- 12 of 12 browsers knew of print calendar, although 1 scientist said, “I don’t think they print the Yellow Sheet anymore.”

Accessing the calendar from the NIH home page



U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
National Institutes of Health

[Home](#) [Health](#) [Grants](#) [News](#) [Science](#) [Institutes](#) [About NIH](#)

[Search](#)

[Check my spelling first](#)
[Advanced Search Page](#)

WHAT'S NEW

- ▶ [Parent/Infant Bed Sharing on Rise](#)
- ▶ [Autoimmune Diseases Research Plan](#)
- ▶ [Brain Disorders Research Program](#)
- ▶ [Revamped NIGMS Web Site](#)
- ▶ [Menopausal Hormone Therapy](#)
- ▶ [Stem Cell Information Index](#)
- ▶ [More...](#)

Health Information

Publications & fact sheets, ClinicalTrials.gov, health hotlines, A-Z topic index, MEDLINEplus, other resources

Grants & Funding Opportunities

Grants news, Applications, grants policy, NIH Guide, award data, research training, research contracts, CRISP database

News & Events

In the News, press releases, calendars, radio & video, media contacts, special reports

Scientific Resources

Human Embryonic Stem Cell Registry, Intramural research, special interest groups, library catalogs, journals, training, labs, scientific computing

Institutes, Centers & Offices

The individual organizations that make up the NIH

About NIH

Q&A About NIH

Career Opportunities

Visitor Information

Employee Information

Información en español

Search the NIH Web Site

Featured this month

NIDCD Website



Prominence of the online calendar on the NIH home page

- All browsers (12 of 12) successfully found the online calendar from the NIH home page; however, 2 of 12 had some difficulty
- 4 of 12 browsers suggested the online calendar needs more prominence on the NIH home page.
- “[In my office,] I might have wasted 10 minutes trying to track the calendar down, and I’m a little more Web savvy than some other people. It would be nice if it could be flagged somehow on the home page.”

Range of NIH events listed on the online calendar



- What NIH events are listed on the calendar was not fully understood, although they understood it was a calendar of science events.
- Some doubted whether all science events were listed.
- Others thought the calendar listed all events held at NIH.
- Why some science events appeared in the Other Events section was not clear.



Receiving e-mail calendar

- 3 of 8 Browsers who knew of the e-mail calendar also mentioned that they used to receive the e-mails, but were uncertain why they no longer did.
- One said, “I used to get the e-mail version, but for some reason I don’t get it anymore.”
- When reviewing the buttons on the navigation bar, some Browsers were confused by the E-mail List button:
 - “I’m not sure what E-mail is.”
 - “You would get e-mails about the topic that’s open,” one Browser assumed.



Recommendations: Marketing

- Highlight at the top of the home page the option to receive the calendar by e-mail.
- Add a Links button on the navigation bar that brings up a list of links (with brief descriptions) to other calendar resources at NIH.
- Advocate for reciprocal links to the NIH online calendar on other electronic NIH calendars.
- Highlight the online calendar on the Yellow Sheet and on the e-mail calendar.



Recommendations: Marketing

- Advocate for flagging the calendar on the NIH home page.
- Devise and conduct a general marketing campaign about the online calendar that targets both calendar browsers and those who enter/edit events.



3. Layout and design

- Design does not maximize usability potential:
 - Calendar home page.
 - Introductory paragraphs.
 - Navigation bar.
 - Event announcements.
 - Icons.
 - Print function and instructions.
 - Event Details page.

Calendar home page

View by:



- Day
- Week
- Month
- Year

Options:

- Search
- Add
- Modify
- FAQ
- Deadlines
- Email list
- Feedback

Quick find:

Find


 NIH Calendar of Events (Yellow Sheet)  [NIH Home Page](#)

Welcome!

View events by day, week, month, or year. Simply click on the buttons in the top left corner. Events are free and open to the public.

Want to add your event to the calendar? Click the "Add" button to the left to submit your information. [View deadline dates](#) to submit your event for the printed "Yellow Sheet" flyer.

Sign language interpretation is available upon request. Please contact the person or office sponsoring the event you plan to attend. To arrange sign language interpretation for an event go to <http://dss.ors.od.nih.gov/interpreting/>

 For a printable version of this page, check the boxes for the events you want displayed. Then click [Printable version](#) | [Check all boxes](#) | [Uncheck all boxes](#)

January 15, 2003

Introductory paragraphs: Sign language interpretation

- Of those asked about how to access sign language interpretation, Browsers referred to the sign language link on the Event Details page and not to the link near the top of the home page.
- One Browser clicked on the sign language link on the Event Details page. When returning to the calendar, the participant unexpectedly was taken to the NIH home page rather than the Event Details page.

Introductory paragraphs: Sign language interpretation

- The sign language link appears only on the calendar's home page and the Event Details page.
- As a result, the sign language link is not available on the page of event announcements when events are viewed using the navigation options for viewing by day, week, month or year.
- Although the sign language link worked during testing, the link on the calendar currently is not working.

Sign language interpretation

View by:



- Day
- Week
- Month
- Year

Options:

- Search
- Add
- Modify
- FAQ
- Deadlines
- Email list
- Feedback

Quick find:

Find


 NIH Calendar of Events (Yellow Sheet)  [NIH Home Page](#)

Welcome!

View events by day, week, month, or year. Simply click on the buttons in the top left corner. Events are free and open to the public.

Want to add your event to the calendar? Click the "Add" button to the left to submit your information. [View deadline dates](#) to submit your event for the printed "Yellow Sheet" flyer.

Sign language interpretation is available upon request. Please contact the person or office sponsoring the event you plan to attend. To arrange sign language interpretation for an event go to <http://dss.ors.od.nih.gov/interpreting/>

 For a printable version of this page, check the boxes for the events you want displayed. Then click [Printable version](#) [Check all boxes](#) | [Uncheck all boxes](#)

January 15, 2003



Recommendations: Calendar home page

- Use color, graphics, size, and style to guide users' eyes on the calendar home page, after they land on "Welcome!".
- Add a tag line to the calendar that identifies what events are listed on the calendar.
- Alternate (every few weeks) text at the top of the calendar as a means to grab users' attention. Consider information about signing up for the e-mail calendar, special events, etc. as text. Ensure that text is written for the Web.

Recommendations: Calendar home page

- Consider adding to the home page and all other pages of the calendar a clickable graphic to highlight the option for sign language interpretation.
- Consider adding a clickable calendar graphic to the home page that would retrieve current and upcoming events by clicking on a specific date on the calendar.



Navigation bar

- The Search and E-mail list buttons, intended primarily for Browsers, are interspersed on the navigation bar. Search and E-mail are grouped with buttons used exclusively by those entering or editing events.
- Two buttons—FAQs and Feedback—used by both Browsers and those entering and/or editing events are grouped with buttons used exclusively by those entering or editing events.

Placement of buttons on the navigation bar



The screenshot shows the NIH Calendar of Events website. The navigation bar is located on the left side and contains several sections:

- View by:** Buttons for Day, Week, Month, and Year.
- Options:** Buttons for Search, Add, Modify, FAQ, Deadlines, Email list, and Feedback. The Search, FAQ, and Email list buttons are circled.
- Quick find:** A search box and a Find button.
- Icon key:** A list of icons and their corresponding event types: Major Event, Media Event, Broadcast, and CME Credit.

The main content area on the right features the NIH logo and the text "NIH Calendar of Ev". Below this is a large "Welcome!" message. A paragraph of text explains that events are free and open to the public. A link for a printable version is provided. The date "January 15, 2003" is displayed, followed by a table header for "NIH Science" with columns for Time and Event Info. The date "Wednesday, January 15, 2003" is also shown.



Navigation bar

- The Icon key is not consistent.
 - With the exception of the CME link, descriptive links for the other Icon keys are not available.



Navigation bar

- At least 3 of 12 participants became confused when using the View buttons on the navigation bar.
 - 2 assumed that when using Search after having selected View by Month, the search would involved only events in the month of events displayed on the screen.
 - “I figured since I was in the October calendar, I expected it to search just that.”
 - 1 assumed that the View by Month only displayed the current month.

Recommendations: Navigation bar



- Place links used primarily by Browsers high on the navigation bar.
 - Place Quick Find immediately below View By options.
 - Place FAQ below Quick Find.
 - Place Feedback below FAQ.
 - Place E-mail list below Feedback.
 - Place the Icon key below E-mail list.

Recommendations: Navigation bar



- All icons listed in the Icon key should be hyperlinked to a brief explanation for each icon.
- For Broadcast icon, explain the difference between Web and video broadcasts and how to retrieve archived broadcasts.
- Add text in area below the Icon key to explain why some events appear in bold font, for example, “Bold font is for major events.” Include a similar explanation in the description for the Major Events icon.

Recommendations: Navigation bar

- Combine Add, Modify, and Deadlines into one button, for example, “Manage Events,” for users who enter, edit, and cancel events.
- Use color and/or size to make the Manage Events button stand apart from the other buttons on the navigation bar.
- Delete Options heading that currently appears above the Search button.
- Delete Search button as previously mentioned.

Task: Display events for October

- 12 of 12 Browsers attempted this task.
 - 11 of 12 were successful, although one had some difficulty.
 - 1 of 12 failed to complete the task because he assumed the View by Month only displayed events for the current month event after clicking and looking at the View by Month page.

Event announcements: Bolded events

- When 11 of 12 browsers were asked why an event announcement appeared in bold:
 - 5 responded correctly.
 - 4 had “no idea.”
 - 1 gave a partially correct response.
 - 1 gave an incorrect response.



Icons: Major Event

- Of the 10 of 12 browsers queried about the meaning of the icon associated with Major Event:
 - 7 gave the correct response.
 - 3 said they had “no idea.”
 - 1 commented, “The star isn’t real obvious. It’s not the best icon. It’s helpful to have the alt tags.”

Icons

Options:

- ▶ Search
- ▶ Add
- ▶ Modify
- ▶ FAQ
- ▶ Deadlines
- ▶ Email list
- ▶ Feedback



12:00 pm

[Center, Executive Plaza North, Conference Room 2](#)

[Contemporary Clinical Medicine: Great Teachers - Cancer Pain: Its Science, Ethics, and Politics-Dr. Kathleen Foley, Memorial Sloan-Kettering Cancer Center; Building 10 \(Clinical Center\), Masur Auditorium](#)



12:00 pm

[HIV-1 Reverse Transcriptase: Mechanisms of Nucleotide Analog Resistance; Dr. Steve Hughes NCI/Retroviral Replication Lab; NCI at Frederick, Building 549, Auditorium](#)



1:00 pm

[Citrate-mediated Iron-transport in E. coli: A Crystallographic Study; Wyatt Yue LMB, NIDDK; Building 5, 127](#)



Icons: Broadcast

- Of the 10 of 12 browsers queried about the meaning of the icon associated with Broadcast:
 - 9 gave the correct response, referring either to video or Web broadcasts.
 - 1 gave a partially correct response.



Icons: CME Credit

- Of the 9 of 12 browsers queried about the meaning of the icon associated with CME Credit:
 - 6 gave the correct response.
 - 2 gave partially correct responses.
 - 1 had “no idea.”

Task: Print out event announcement

- 11 of 12 Browsers attempted this task.
- 9 of 11 successfully printed the announcement; however, 1 succeeded with difficulty.
- 2 of 11 attempted, but failed to print the announcement.
- 3 of 11 expected the printer icon to be clickable and to initiate printing. One confused Browser said, “When I click on the print icon it doesn’t do anything.”

Printing

Options:

- Search
- Add
- Modify
- FAQ
- Deadlines
- Email list
- Feedback

Quick find:

Find

Icon key:

Major Event

For a printable version of this page, check the boxes for the events you want displayed. Then click [Printable version](#) | [Check all boxes](#) | [Uncheck all boxes](#)

January 15, 2003

NIH Science



Time

Event Information

Wednesday, January 15, 2003



7:30 am

[Dietary Supplement Use in the Elderly Conference; Various Speakers; Building 45 \(Natcher Building\), Auditorium](#)



9:00 am

[The Wow\(!\)nder of Socialized Medicine: The Italian MODY Project; Fabrizio Barbetti, M.D., Ph.D. Chief Laboratory of Molecular Endocrinology; Building 10 \(Clinical Center\), 9C209](#)



11:00 am

[Gene Expression in Endometrial Cancers; Dr. David S. Loose, Ph.D. Associate Professor Department of Integrative Biology and Pharmacology, University of Texas Health Science Center, Executive Plaza North, Conference Room G](#)

Task: Print out event announcement

- 2 of 11 indicated they expected the default for printing to be unchecked boxes—“I would expect it to default to unchecked.”
 - When shown the print out of the announcement, 3 commented they were expecting the Event Details page to print out.
 - “I thought I was printing out the whole description. The end time [for the event] does not appear [on the printed announcement.]”

Task: Print out event announcement

- 1 Browser experienced a “bug” while trying to print out the announcement:
 - After checking 2 boxes, only one event appeared in the Printable Version window.



Recommendations: Print

- Highlight the print option through the use of color, size, white space, and/or text box.
- Add along side the print option, additional choices—to send to personal calendar/PDA and to send E-mail to a friend.
- Change the default to no checked boxes.
- Design functionality so users select the desired action (print, personal calendar, or e-mail), check boxes, and submit.
- Delete printer icon.

Event Details page: Page design



- 6 browsers wanted registration information placed together on the page. “[Registration] should have its own category.”
- “Title is hard to find. Everything is of equal importance. Title, time, and date need to be bigger than the Description. ...Location, Date, and Time need to appear together.”
- “Location needs to be near the top.”

Event Details

View by:

- Day
- Week
- Month
- Year

Options:

- Search
- Add
- Modify
- FAQ
- Deadlines
- E-mail list
- Feedback

Quick find:

Find

Icon key:

- Major Event
- Media Event
- Broadcast
- CME Credit

Creating Presentations with PowerPoint for the PC

Dates/Time

January 15, 2003 from 9:30 AM until 12:00 PM

Description

This introductory class will enable students to create polished presentations including effective graphics. Students will learn to apply special effects that appeal to an audience in a multimedia presentation.

Details

This is an Other event.
View Web Page for this event. (<http://training.cit.nih.gov>)
Reservations or registration required for this event.

Event type: Class

Sponsored By

NIH Organizations: CIT

Speakers

Kristen Dunn-Thomason, Division of Customer Support, CIT
Patricia Ashburn, Division of Customer Support, CIT

Location

Fernwood Building
Lower Level Classroom
10401 Fernwood Road
Bethesda, MD 20892

Contact Information

CIT Training
Phone: 301-594-6248



Event Details page: Description section

- 4 emphasized they wanted more information about the event—topic of discussion—in the Description section.
- “Doesn’t give a description of what speakers are going to actually be speaking about.
- “All this [description] is saying is about the [CME] credits, but nothing about the events. I want to know what he’s going to be talking about.”

Event Details

View by:

- Day
- Week
- Month
- Year

Options:

- Search
- Add
- Modify
- FAQ
- Deadlines
- Email list
- Feedback

Quick find:

Find

Icon key:

- Major Event
- Media Event
- Broadcast
- CME Credit

Event Details

For a printable version of this page, click [Printable version](#)

[Modify event](#) [Add similar event](#) [Cancel event](#)

The Wow(!)nder of Socialized Medicine: The Italian MODY Project

Dates/Time
January 15, 2003 from 9:00 AM until 10:00 AM

Details
This is an NIH Science event. **Event type:** Lecture

Sponsored By
NIH Organizations: NIDDK

Speakers
Fabrizio Barbetti, M.D., Ph.D., Chief, Laboratory of Molecular Endocrinology, Rome, Italy

Location	Contact Information
Building 10 (Clinical Center) 9C209 10 Center Drive Bethesda, MD 20892	Christine Biser Phone: 301-496-8090 Fax: 301-480-4386 E-mail: ChristineBi@intra.niddk.nih.gov



Event Details page: Description section

- 6 wanted details about the intended audience for the event.
 - Indicate who should attend.
 - Is event open to the public or not?
 - Indicate if class is for beginners.
- 4 wanted information about the cost of the event. Except for 1 browser, others did not appear to notice text indicating “events are free” in one of the introductory paragraphs near top of home page.



Event Details page: Description section

- 2 wanted information about the closest parking lot near to the event.
- 1 wanted to know if a reception or Q&A [will] take place in conjunction with an event. “Sometimes you attend an event just to speak with the speaker.”
- 1 suggested adding “a heading that says whether and how an event is archived.”
- 1 recommended spelling out the acronym for the event sponsor.

Event Details page: Details section

- 7 Browsers reported that under the Details section, the statement, “This is an Other event,” confused or appeared strange to them.
- “I didn’t know what that [Other event] was about.”
- “This is an Other event. I don’t like that...It sounds stupid.”
- “I am more interested in the fact that it’s a class [than if it’s an Other Event].”

This is an Other Event

View by:

- Day
- Week
- Month
- Year

Options:

- Search
- Add
- Modify
- FAQ
- Deadlines
- Email list
- Feedback

Quick find:

Find

Icon key:

- Major Event
- Media Event
- Broadcast
- CME CME Credit

Creating Presentations with PowerPoint for the PC

Dates/Time

January 15, 2003 from 9:30 AM until 12:00 PM

Description

This introductory class will enable students to create polished presentations including effective graphics. Students will learn to apply special effects that appeal to an audience in a multimedia presentation.

Details

This is an Other event.
View Web Page for this event. (<http://training.cit.nih.gov>)
Reservations or registration required for this event.

Event type: Class

Sponsored By

NIH Organizations: CIT

Speakers

Kristen Dunn-Thomason, Division of Customer Support, CIT
Patricia Ashburn, Division of Customer Support, CIT

Location

Fernwood Building
Lower Level Classroom
10401 Fernwood Road
Bethesda, MD 20892

Contact Information

CIT Training
Phone: 301-594-6248

Event Details page: Speaker section

- 3 emphasized the importance of the event's speaker.
- “I don't care about who sponsors [the event], but who's talking.”
- “I would...go directly to the speaker information.”
- “I want to know his [the speaker's] personal qualifications.”

Event Details page: Event registration

- 2 browsers said registration information is not prominent enough on the page.
- 2 browsers, while viewing the Event Details page, were unsure if the event required registration. Although the text did not indicate whether or not registration was required, each browser arrived at a different conclusion:
 - “Might have to pre-register since it’s a workshop.”
 - “Doesn’t indicate, so I assume no.”

Event Details page: Event registration

- 6 Browsers indicated the need for more information about registration.
 - Who to contact.
 - Phone number of contact.
 - Link to online registration form.
 - Registration deadline.

Event Details page: Link for CIT classes

- 7 Browsers, while looking at the Event Details page for a CIT class, said they expected the link, “View the Web page for this event,” to take them directly to information about the class and an online registration form. However, the link sent Browsers to the CIT home page.
- “This is totally not what I expected.”



Event Details page: Sizing

- To review all the information on the Events Details page for an event found for a task, Browsers had to scroll horizontally across the screen. The computer monitor screen was sized to 800x600, a common setting.
- “It should fit on one page.”



Recommendations: Event Details page

- Repeat the print, send to personal calendar/PDA, and e-mail functions at the top of the Details page.
- Delete the buttons for Modify, Add, and Cancel events.
- Increase the visibility of the event title.
- Add the day of the week to the date near the top of the page.



Recommendations: Event Details page

- Place date, time, and location information together near the top of page.
- Indicate the intended audience.
- Delete references to whether event is categorized as NIH Science or Other Event.
- Include title of series as appropriate and link to other events in series, if possible.



Recommendations: Event Details page

- Increase the relevancy of the Details section by providing guidelines to those who enter/edit events about the type of information to include and the usefulness of this information to users of the calendar.
- Use a 800 x 600 display parameter to size the display of information on the Events Details page so users do not need to scroll horizontally to read the page.

Recommendations: Event Details page

- Place information pertinent to registration together in a section labeled Registration.
 - For every event have a check box indicating whether or not registration is required.
 - If registration is required, indicate the deadline.
 - Links to CIT should lead directly to information about the event and/or online registration.
 - Place information about the registration contact person in or next to Registration area.
 - Indicate whether or not event is free.



Recommendations: Event Details page

- Consider adding resource links for:
 - NIH map
 - Shuttle bus
 - PubMed



4. Enhanced features

- Add calendar perks:
 - Resource links on the Event Details page.
 - Option to e-mail event information.
 - Option to transfer information to Outlook calendar or PDA.
 - Clickable calendar image for determining dates and displaying events.



Add calendar perks

When queried, Browsers were interested in additional resource links:

- 7 browsers wanted a link to the NIH map.
- 4 browsers wanted a link to the NIH shuttle schedule.
- 1 browser wanted a link to PubMed.
- 1 browser wanted a link to the speaker's home page.
- 1 browser wanted a link to speaker's abstract.



Add calendar perks

- 8 browsers wanted a clickable calendar graphic added to:
 - Quickly move to events associated with a specific date or day of the week.
 - Provide a date reference visually laid out as a page from a monthly calendar.
- 3 browsers wanted a feature allowing users to download selected events to their Outlook calendars.



Page load time

- Post-test findings showed browsers rated the online calendar's page load time as 5.25 where 1 is the lowest and 7 is the highest rating.
- However, 6 browsers commented specifically on slow page load time while using the calendar when:
 - Searching by CME (4 browsers).
 - Using View by Month (1 browser).
 - Printing an Announcement (1 browser).



Page load time

- Page load time also depended on the computer system, connections, and Browsers' expectations.
- While waiting for events to display by View by Month, a Browser commented, “It takes forever. I want things to be immediate....It’s about the same slowness as at my office.
- Another Browser said, “It’s not too bad—average.”

Report on entering events

View by:



- Day
- Week
- Month
- Year

Options:

- Search
- Add
- Modify
- FAQ
- Deadlines
- Email list
- Feedback

Quick find:

Find


 NIH Calendar of Events (Yellow Sheet)  [NIH Home Page](#)

Welcome!

View events by day, week, month, or year. Simply click on the buttons in the top left corner. Events are free and open to the public.

Want to add your event to the calendar? Click the "Add" button to the left to submit your information. [View deadline dates](#) to submit your event for the printed "Yellow Sheet" flyer.

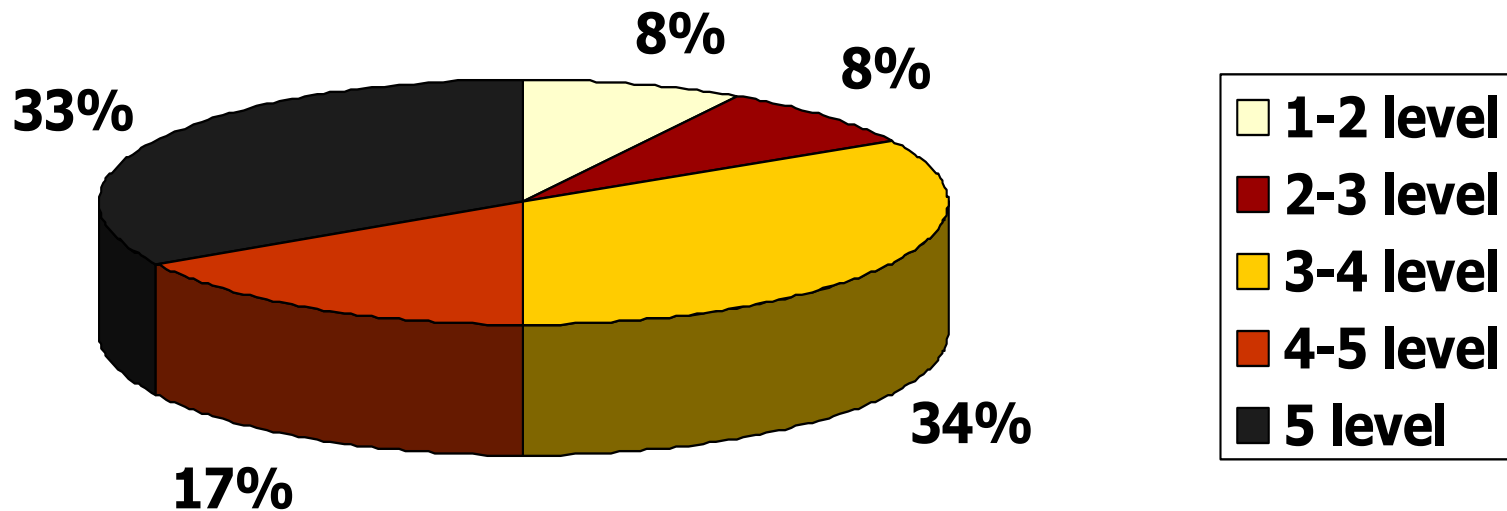
Sign language interpretation is available upon request. Please contact the person or office sponsoring the event you plan to attend. To arrange sign language interpretation for an event go to <http://dss.ors.od.nih.gov/interpreting/>

 For a printable version of this page, check the boxes for the events you want displayed. Then click [Printable version](#) | [Check all boxes](#) | [Uncheck all boxes](#)

Demographics of people who enter events

- Participants fit the screener profile if they were users or likely users of the NIH online calendar for the purpose of entering events.
- 12 participants classified as enterers:
 - 9 non-scientists (mostly admin)
 - 3 scientists
- Participants included NCI & CIT calendar users, an interest group calendar admin, an arranger of sign language
- Frequency of entering events varied:
 - 5 infrequent users
 - 7 frequent users

Participants' computer literacy



Computer competence rating for all enterers
5-point rating scale: 1 = low and 5 = high

UserWorks subjectively assessed the enterers' level of computer competence at the end of each session.

NIH event calendars regularly used by participants

- NIH event calendars regularly used by participants:
 - Online calendar only: 5 of 12
 - Print and online calendars: 5 of 12
 - Online and email calendar: 1 of 12
 - All versions: 1 of 12
- Of the participants who enter events:
 - 5 use the online calendar an average of 1 to 3 times/month
 - 4 use the online calendar about 1 to 3 times/week on average

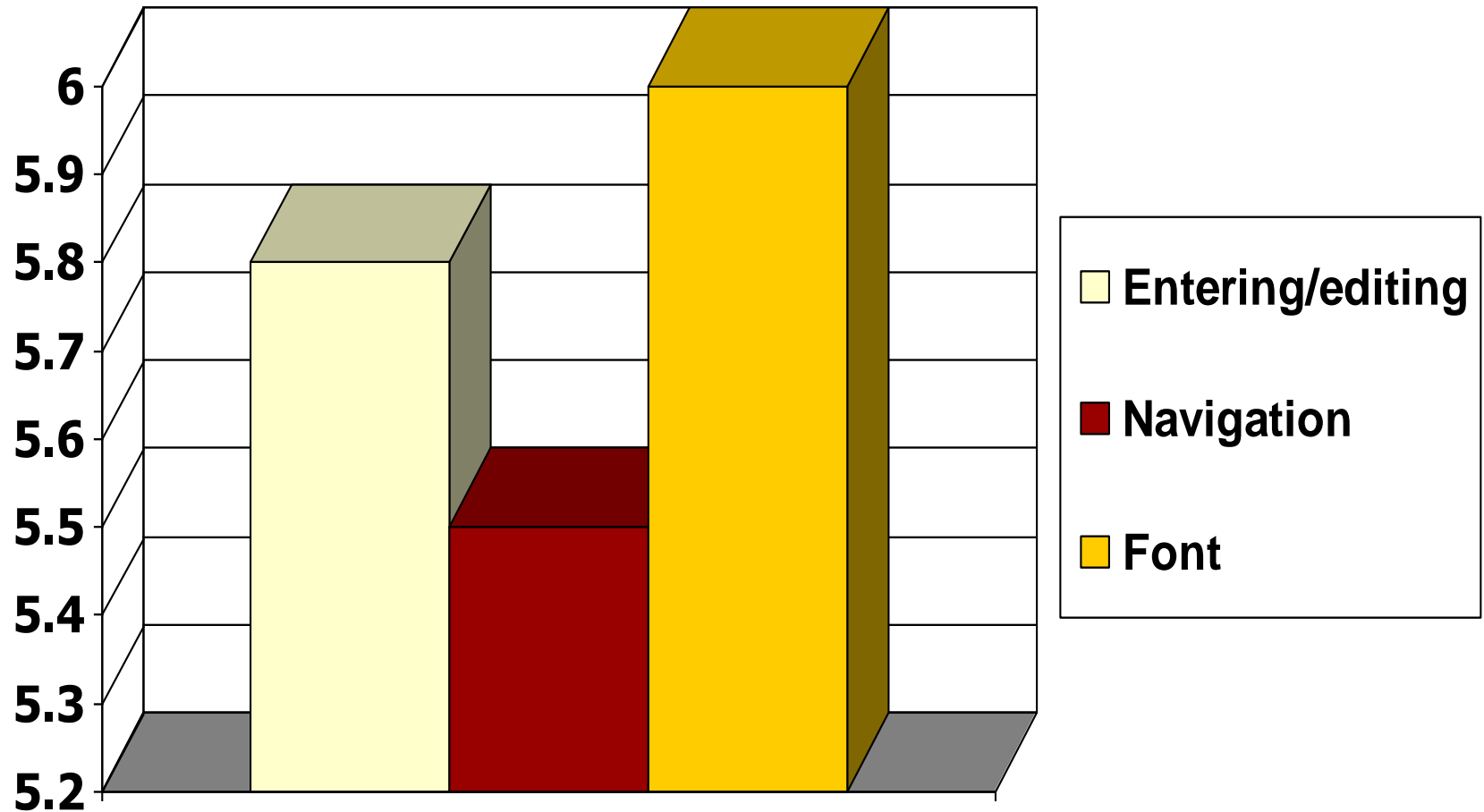
Methods participants normally used to get to calendar

- How they normally get to the calendar:
 - Via searching (“Employee Information” or Search): 5 of 12 participants
 - Via News and Events (on NIH home page): 1 of 12 participants
 - Through bookmarks (favorites, my.nih.gov, NCI modules): 6 of 12 participants
- Most report entering events in batches, setting aside a morning, a day, or several days to enter events all at once

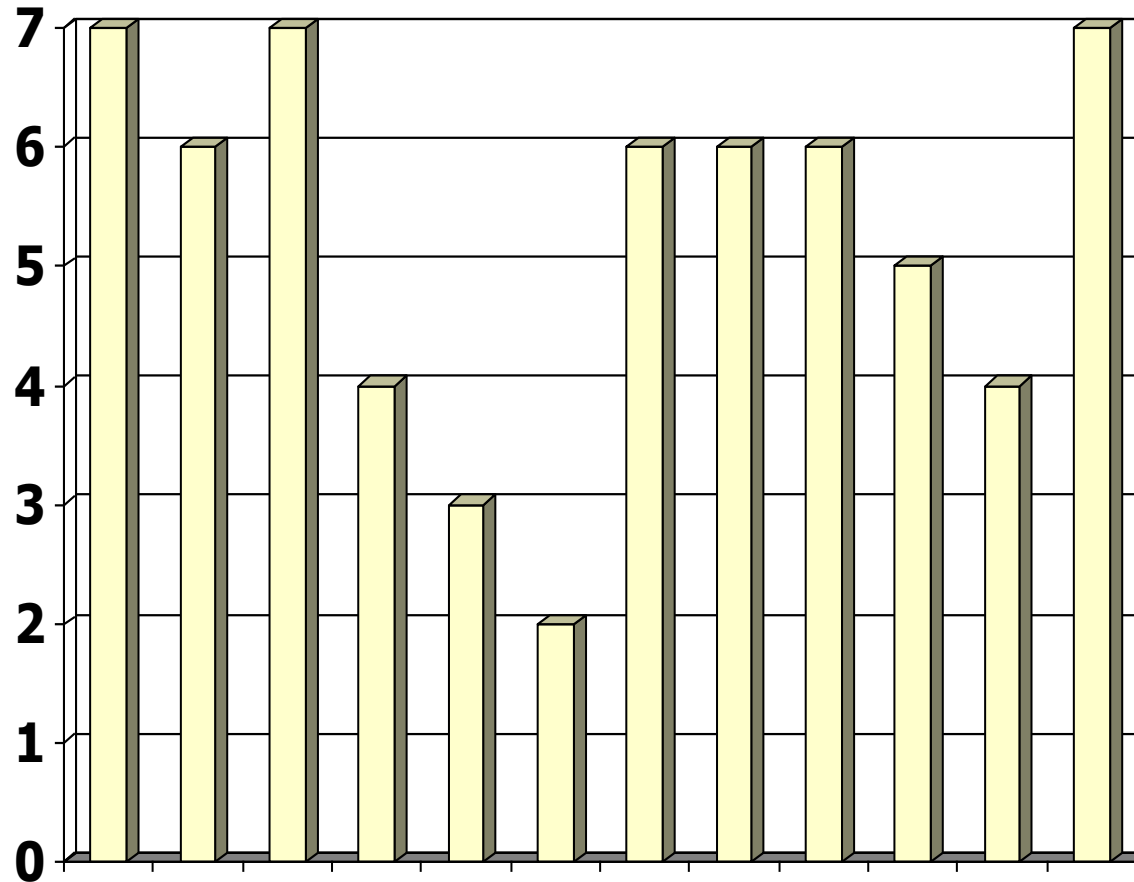
Post-test questions assessing ease/difficulty of entering events

- Overall, the online calendar made entering and editing events...
- As I entered information about an event, navigating the web site was...
- The size, style, and color of the font on the site made using the calendar...
- The web pages loaded in a timely manner
- I would not hesitate from adding another event to the calendar...

Post-test average rating: Ease/difficulty of entering

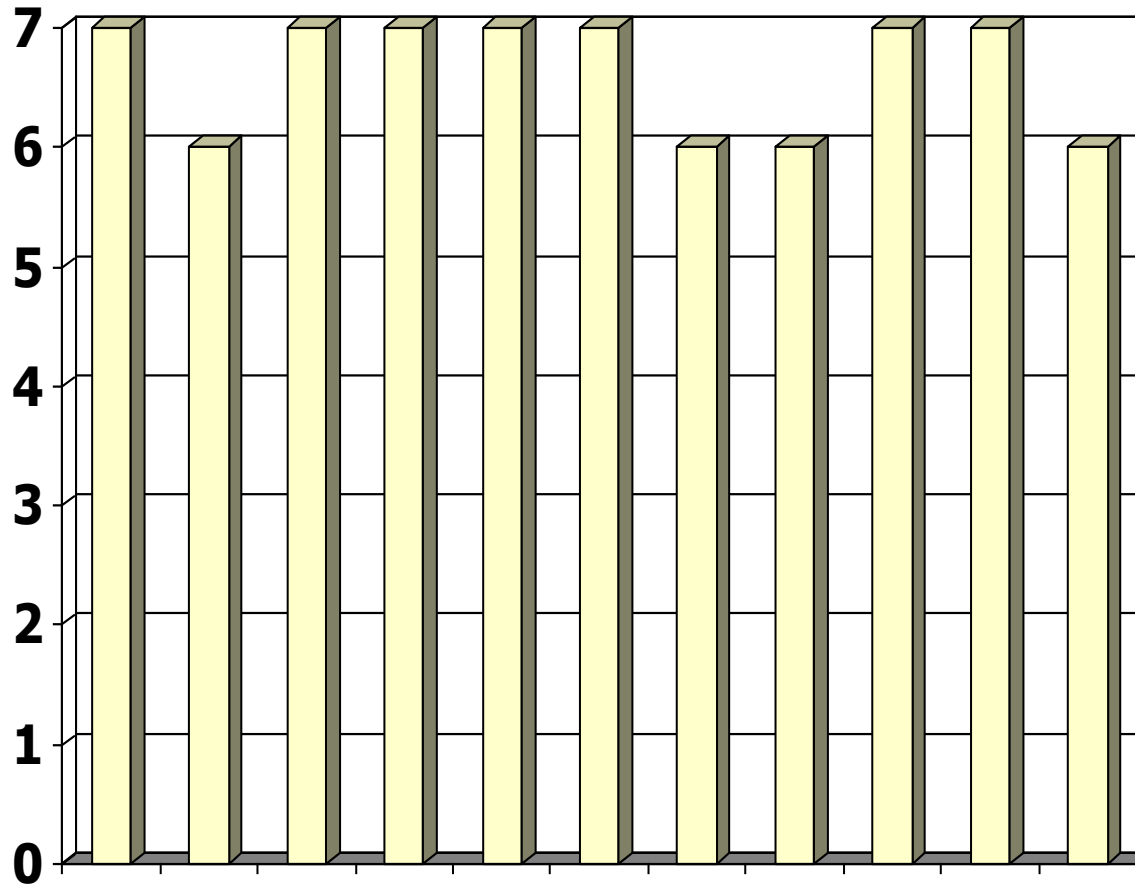


Post-test ratings by enterers: Satisfaction w/ page load time



7-point scale:
1=Strongly
Disagree
7=Strongly
Agree
Average=5.25

Post-test ratings by enterers: Would add another event



7-point scale:
1=Strongly
Disagree
7=Strongly
Agree
Average=6.64

Post-test: Aspects particularly liked

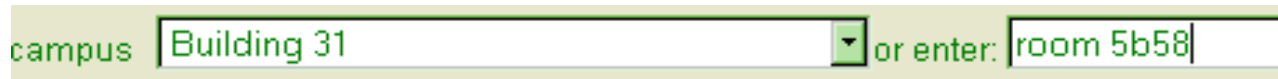
- “Simplicity,” “ease of use,” “user-friendly”
- “Events being available in multiple formats” (email, print, web)
- “Being able to add a seminar at a moment’s notice”
- “Being able to submit various events that are similar”
- “Ability to review before submitting”
- “Automatic building info fill-in”

Post-test: Aspects of calendar particularly disliked

- “Too many options to figure out without any help”
- “Want to see more complete picture”
- “Some ‘continue’ mechanisms unclear”
- “Multiple pages contain similar information”
- “Lag time between pages”
- “Not sure how to cancel or delete an event”

Post-test: Other aspects disliked

- “Lack of understanding in how to enter building-room info”



A screenshot of a web form with a light green background. On the left, the word "campus" is written in green. To its right is a text input field containing "Building 31". To the right of this field is a small green dropdown arrow. Further right, the text "or enter:" is written in green, followed by another text input field containing "room 5b58".

- “Having to enter phone number again”
- “No location for sponsor to appear in announcement”

Some paradoxes of site usage by enterers

1. The mental model for people who enter events is the print version
 - These participants emphasize how the event, entered **online**, will appear in **print**
2. For many participants who enter events, the site is a means to an end, but is not seen as a tool they can use, too
 - Participants who entered events rarely use the online calendar themselves; some were not aware of the email service



Findings and recommendations



Analysis of issues by screen

- Events are entered through a series of steps
- Results are highlighted by screen/page:
 - Login
 - Description
 - Sponsor
 - Location
 - Special
 - Contact
 - Submitted by
 - Submit

Sign In

Please sign in to the NIH Calendar of Events. ([About your privacy](#))

First Name:

Last Name:

E-mail Address:

Password:

If this is your first time, enter a password that can be associated with your account.

If you have forgotten your password, contact nihcala@od.nih.gov.

Sign in



Login issues

- Finding the Add button was not difficult, but participants did have suggestions for new labels that resonate with them better
- Participants had difficulty with multiple logins/passwords tied to events
- Participants must login for each new event submitted in a series or in a batch



Login issues, continued

- Participants were not familiar with calendar admin deadlines (8 of 12)
- Participants looked for examples or learned by trial and error
- Editing is done by very few
- Editing existing events was problematic



Login recommendations

- Separate entry interface from browse
- Participants suggested new label for Add:
 - “Add New”
 - “Add New Events”
 - “Add Events”
- Allow users to self-manage login

Login recommendations, continued

- Consider option to “create new account” to capture “Submitted by” info and to simplify login
- Show deadline info after login
- Show list of previously entered events after login

Add an Event

Complete the required fields on all tabs. Then click on the "Review/Submit" tab.

Description **Sponsor** **Location** **Special** **Contact** **Submitted by** **Review/Submit**

Cancel

All **bold items** are required fields.

Event type: ☒ NIH science ☐ Other

Title:

Description:

Series name: (if this event is part of a series)

Date/time: **Day 1:** **Start time:** ☒ am ☐ pm
End time: ☐ am ☒ pm

More days

Speaker(s): **Name:**
Title:



Description issues

- Tabs are not heavily utilized
- Participants liked cancel/continue buttons
- Some participants wanted single page entry format
- Participants had a focus on entering series (6 of 12), esp. in marathon data entry sessions
- Participants want the ability to enter or upload multiple events at one time



Description issues, continued

- Title field:
 - Quotes around title (2 of 12)
 - SIG or series as title (2 of 12)
- Description field:
 - Title self-evident, no need for description (4 of 12)
 - Purpose of field unclear (7 of 12)
 - 1 participant includes “meeting objective” in description



Description issues, continued

- Few participants knew about or used “more days” or “more speakers” but figured it out relatively quickly (those who had difficulty: 2 of 12)
- For two participants, speaker’s title seems to emphasize degree, rather than position held



Description issues, continued

- One participant wanted “smart” time to automatically fill in end time based on start time, with assumptions (7-6 rule, “academic hour”)
- Unwritten rules, such as those for capitalization, are not specified or demonstrated by examples



Description recommendations

- Provide online help and contextual clues
- Enumerate steps to show progression in data entry
- Relabel fields to identify purpose, e.g., Description=Abstract
- After participants enter more speakers/dates, show the new data
- Incorporate time-saving features, e.g., JS code for time

Add an Event

Complete the required fields on all tabs. Then click on the "Review/Submit" tab.

Description	Sponsor	Location	Special	Contact	Submitted by	Review/Sub
<div>Cancel</div>						
NIH organizations:						
<div>- Select an NIH Organization -</div> or						
<div></div>						
Office or lab: <div></div>						
<div>- Select an NIH Organization -</div> or						
<div></div>						
Office or lab: <div></div>						
<div>- Select an NIH Organization -</div> or						
<div></div>						
Office or lab: <div></div>						
<div>More NIH organizations</div>						



Sponsor issues

- This page had the most noticeable reactions:
 - “It’s kind of disorganized”
 - “It’s busy”
 - “This page always throws me”
- Page load lagged in a couple of sessions
- Participants wanted to add lab/subunit (3 of 12)
- When screen size caused horizontal scrolling, some participants used tabs, which led to some errors resulting from “missing” required information



Sponsor recommendations

- Reduce the number of drop down boxes to two
 - one for NIH organizations
 - one for outside organizations
- Have “more sponsors” button (as with “more days”) to add more as needed
- List entered these newly entered units after they are submitted

Add an Event

Complete the required fields on all tabs. Then click on the "Review/Submit" tab.

Description Sponsor **Location** Special Contact Submitted by Review

Cancel

Location:

☐ On the main NIH campus - Select building -

☐ Off campus - Select building - or enter:

Submit

Cancel



Location issues

- Participants remarked it was strange to have two screens to enter location, and that it was not clear that room number would follow
- Participants wanted to enter building and room number at the same time (5 of 12)
- Used field to right of building to enter room number (3 of 12)
- In this instance, the submit button implied “finished” not “next” (2 of 12)



Location issues, continued

- Two participants were not sure if building address was correct, but assumed it was
- A few participants remarked their building was not in drop down list and they didn't see how to or understand there was a field to enter new building information



Location recommendations

- Location information should be on one page
- Radio button for on/off campus indicated based on building selected
- Popular building/room combinations could be dynamically generated based on what's been entered already; add new building/room option specified
- Incorporate the two buttons (FAQs and Feedback) in navbar that otherwise are not available to people in enter/edit mode

Add an Event

Complete the required fields on all tabs. Then click on the "Review/Submit" tab.

Description	Sponsor	Location	Special	Contact	Submitted by
<div>Cancel</div> <div><div><input type="checkbox"/> Reservations or registration required for this event</div><div><input type="checkbox"/> Event counts towards Continuing Medical Education</div><div><input type="checkbox"/> Event will be a teleconference</div><div><input type="checkbox"/> Event will be broadcast LIVE on the Web</div><div>URL: <input type="text"/></div><div><input type="checkbox"/> More information will be available prior to the event</div><div>Note to administrator: <input type="text"/></div></div>					



Special issues

- Participants wondered what would happen when “registration” is checked (2 of 12); three suggested a new page should open
- Participants asked: “Where do I put registration info?”
 - 1 participant put info in note to admin
 - 1 backtracked to description to enter info)
- Purpose of note to admin field unclear (2 of 12)



Special issues, continued

- Participants wanted to associate related RSVP info (5 of 12)
- 1 put in note in description about registration, but did not check registration required



Special recommendations

- Overall, revamp order and location of fields and associate related fields
- See earlier comment about contextual clues and online help

Add an Event

Complete the required fields on all tabs. Then click on the "Review/Submit" tab.

Description	Sponsor	Location	Special	Contact	Submitted by	Review/Submit
<div>Cancel</div>						
<p>All bold items are required fields.</p> <p>Point of contact for this event:</p> <p>Name: <input type="text"/></p> <p>E-mail: <input type="text"/></p> <p>Phone: <input type="text"/> (e.g. ###-###-###)</p> <p>Fax: <input type="text"/> (e.g. ###-###-###)</p> <div>More contacts</div>						
<div>Cancel</div>						



Contact issues

- Some participants had problems entering phone number; the example with hashes and dashes was not noticed or clear/readable (4 of 12)



Contact recommendations

- Provide example with numbers, instead of hashes
- See earlier recommendation about customization and account management

Add an Event

Complete the required fields on all tabs. Then click on the "Review/Submit" tab.

Description	Sponsor	Location	Special	Contact	Submitted by	Review/Submit
<div>Cancel</div> <hr/> <p>All bold items are required fields.</p> <p>Submitted by:</p> <p>First name:</p> <p>Last name:</p> <p>E-mail:</p> <p>Phone: <input type="text"/> (e.g. ###-###-####)</p> <div>Cancel</div>						



“Submitted by” issues

- Some participants were unclear on the concept of “submitted by” and POC
- Participants wondered why phone number had to be entered twice, esp. for those who were both the POC and person who submitted event (5 of 12)
- 1 wanted phone number to be included automatically

“Submitted by” recommendations

- Consider account management option mentioned earlier
- Users could confirm data that was captured at login (or earlier, when account was created)

Add an Event

Complete the required fields on all tabs. Then click on the "Review/Submit" tab.

Description	Sponsor	Location	Special	Contact	Submitted by	Review/Submit
<div>Cancel</div> <hr/> <div>Choose a method to submit this event:</div> <div>Preview before submitting</div> <div>Submit without previewing</div> <hr/> <div>Cancel</div>						

Confirm Event

Please review your information below. Click "Submit

Note: You will have to resubmit your event once you'

Submit this event

Make changes

Event type: Annual Meeting
This is an NIH Science event.

Title:

Date/time: January 14, 2003 from 01:00 AM

Sponsors: NIH Organizations:
AIDS Interest Group

Location: On the NIH Campus

Building: Building 10 (Clinical Center)

Room: 10

Street address: 10 Center Drive

City, State, Zip: Bethesda, MD 20892

Point of contact:

Submitted by:



Submit issues

- Participants use “Preview before Submit”; 9 of 12 specifically said they always do this
- Sometimes preview is slow to display; 2 of 12 mentioned this
- Participants print copies for their records; 2 of 12 always do this
- Some participants want to see previews of web, print, email (2 of 12 mentioned other formats beside print)
- 1 wondered if calendar admin fact checks
- Some participants experienced problems canceling and deleting events



Submit recommendations

- Omit “Submit without preview”
- Offer “printer-friendly” button
- Show all three formats in preview
- Email copy of submission with reminder of estimated date of posting/publication
- Follow-up with email when approved with link to online event
- If showing status of submitted events and making them available, allow users to follow a step-by-step process to edit, delete, or cancel



Overview of Recommendations

- Create a single button called “Manage Events” and remove extraneous buttons from main navbar
- Allow “self-service” for login and passwords

Overview Recommendations, continued

- Consider personalization option
 - Personalization can prevent having to enter standard details more than once, e.g., their POC/submit info
 - Login process could allow creation of new account (basic new account info includes name, email, phone, fax, division/inst/series; they could enter optional info, e.g., “I am POC/submitter,” alternate POC info), and provide password help
- Notify users after login about submitted event status, deadlines, updating their account, and online help

Overview Recommendations, continued

- Offer multiple options to add new events (based on what was previously entered or from scratch), add a series, modify a current submitted event, cancel an event
- Consider “long form” or breadcrumb approach to entering, depending on option chosen (see above)
- Use asterisks to denote required fields

Overview Recommendations, continued

- For events that are a series:
 - Recognize data in series that is constant: series name, sponsor, location, time/date (vs. 4th Tuesday of each month – offer Outlook-type setup?)
 - Recognize data in series that is variable: speaker's name, affiliation, title of lecture
 - Consider using a variation of “more speakers” and “more days” (based on above assumptions)

Overview Recommendations, continued

- Allow users to preview event they've entered in various formats
- Send email confirmation with content of event in email, with reminder when it will be posted
- Send follow-up email that event is posted with link to posted event

Features suggested by participants

- “A person’s phone number/direct contact for immediate assistance”
- “Better idea of what will appear in the email”
- “Ability to modify shortly after submission”
- “Calendar to select date”