

**National Cancer Institute**

**U.S. Department of Health and Human Services**

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**Report on the Division of Cancer Epidemiology and Genetics  
(DCEG) Linkage Newsletter Project - 11-4014 NCI**

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**Usability Evaluation**

**Conducted by User-Centered Design, Inc.**

**For the National Cancer Institute's Division of Cancer Epidemiology  
and Genetics Program**

September 2012

## Executive Summary

NCI's Division of Cancer Epidemiology and Genetics (DCEG) program comprises the National Institute of Health (NIH)'s most comprehensive cancer epidemiology research group. Its renowned epidemiologists, geneticists, and biostatisticians conduct population and multidisciplinary research to discover the genetic and environmental determinants of cancer and new approaches to cancer prevention. The Division's research impacts public health policy in the United States and around the world.

DCEG circulates a quarterly newsletter called *Linkage*, which highlights accomplishments and awards received by its scientists and disseminates information about fellows, new publications, and upcoming events. The newsletter, previously available via paper copy, has been introduced online at [Link to main home page of online version of Linkage](#). Recently, a redesigned web site for the newsletter was created to explore the possibilities of the CTB templates at example link to a section of *Linkage* created using a content management system template.

A usability evaluation was proposed in June 2011 for the DCEG *Linkage* website in order to determine the needs of users and ensure it supports the program goals. The project included two rounds of usability evaluations. The first round involved researchers, cancer advocates and NIH fellows who were likely to keep up with cancer research for their work. The first design (the current live site) for the *Linkage* site was explored in this round. The second round involved the second (beta) site, which was evaluated by researchers and fellows. The project was completed in September 2012.

The findings from the first round of evaluations showed that the site design was received positively and that the pictures and other content engaged participants. The aspect of the site that was not as clear to participants was the "Related Links" section. This area on the left side of the screen displayed links for all feature stories no matter what article was being viewed. This resulted in participants questioning the relevance of the links; they suggested that hyperlinks for more information could be embedded within the text of the article. Preference for HTML and PDF versions of the newsletter were reported to be split down the middle. The *Linkage* site was visually designed differently than the rest of the DCEG website, however participants did not comment on this difference when navigating to *Linkage* from the DCEG homepage.

The second round of evaluations provided information on the layout changes due to the shift to a new design template. A test site reflecting an updated look to the DCEG homepage and *Linkage* newsletter section tied the two sections together visually. Participants did not experience any difficulty navigating the site and finding articles of interest; however, the visual design of the site was not received as positively (one participant mentioned their preference for the PDF version was due to the site's less engaging design). Some proposed changes were recommended to improve the site's visual treatment; however, the constraints of the templates will have to be considered.

Overall, feedback from 14 individuals was collected and interpreted as possible recommendations for improvements to the *Linkage* newsletter site. If the recommendations from the results of the interviews are implemented, information offered on the website should provide a usable experience for users.

This report documents all the activities of this project as described above. All documents used for testing are attached in the appendix following the report.

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## Introduction

NCI's DCEG program comprises the NIH's most comprehensive cancer epidemiology research group. Its renowned epidemiologists, geneticists, and biostatisticians conduct population and multidisciplinary research to discover the genetic and environmental determinants of cancer and new approaches to cancer prevention. The Division's research impacts public health policy in the United States and around the world.

DCEG circulates a quarterly newsletter called *Linkage*, which highlights accomplishments and awards received by its scientists and disseminates information about fellows, new publications, and upcoming events. DCEG has begun a project to redesign *Linkage* into an easy-to-use, interactive, web-based publication that complements the structure and format of the Division's web site. The overarching goal is to improve the structure and readability of the newsletter and to ensure the newsletter page harmonizes with the rest of the DCEG website.

User Centered Design Inc. (UCD) was contracted to perform two rounds of iterative usability testing. These evaluations produced findings and recommendations for the previous design of the *Linkage* website and the new design based on the CTB templates and are included in this report.

## Method

The project included the following activities.

### Round One Usability Evaluation

Eight (8) participants representing the primary audiences of the *Linkage* newsletter were recruited for this round. The breakdown of participants included three (3) cancer researchers, three (3) NCI fellows involved with DCEG, and two (2) cancer advocates who reported to regularly keep up with research in the field. DCEG and a professional recruiting firm recruited participants. Sessions were held February 2nd-14th 2012 and lasted approximately 30 minutes each. The participants explored the November 2011 issue of the newsletter on the site remotely, using online conferencing software.

### Round Two Usability Evaluation

Six (6) individuals from the researcher and NCI fellow audiences participated in this usability evaluation. Four (4) were researchers who worked in cancer epidemiology and two (2) were current NCI fellows. They were recruited from contacts provided by DCEG and most had at least a basic familiarity with the *Linkage* newsletter. Of those who had prior experience with the newsletter, some had seen the print version and others had seen the web version. Sessions for this round also were approximately 30 minutes in length and were held remotely as well. The testing was completed by the end of August 2012 and centered on the July 2012 issue of *Linkage*.

A total of fourteen (14) individuals were involved with all usability evaluations. The findings and recommendations were synthesized and are reported below:

## Findings

### Round One Usability Evaluation

#### Linkage Homepage

##### First Impression

The overall impression of the original *Linkage* site was a generally positive reaction. Participants mentioned that the site appeared to be clearly organized and visually appealing. Navigating around the site did not appear to create any confusion, and participants actually felt that the layout encouraged exploration. Items in the left panel (shown below in Figure 1) were correctly interpreted as highlighted stories. Pictures throughout the site were engaging and appropriate.

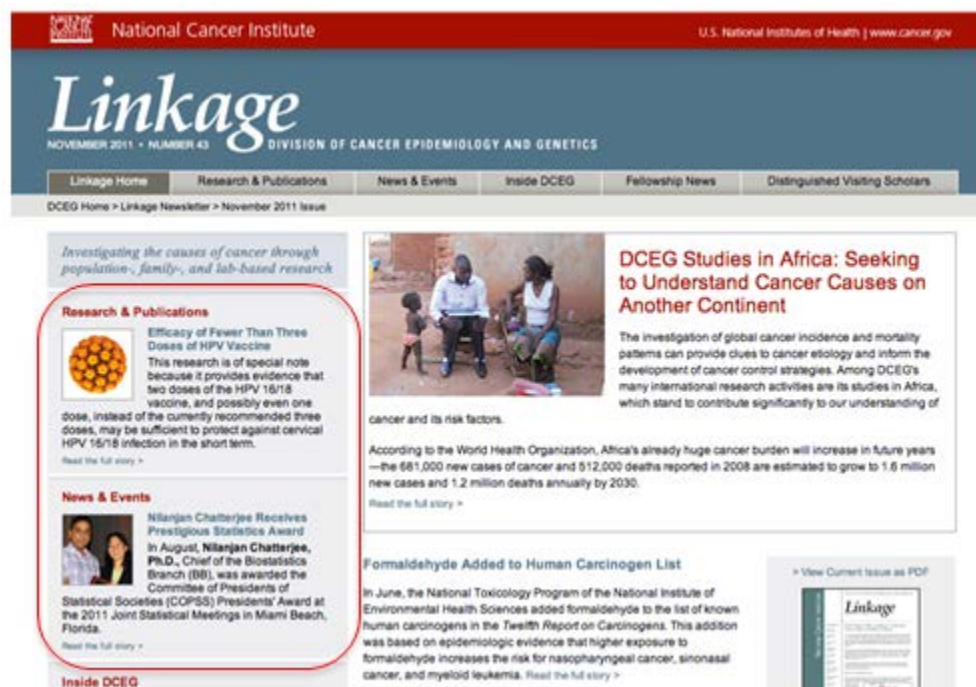


Figure 1: The *Linkage* Homepage at the Time of Testing.

##### Initial Access

Most participants saw the *Linkage* section in the central area of the page and would click the associated image of the PDF/hard copy of the newsletter as shown in Figure 2. A few said they would check “News & Events” [they justified that the mention of news may suggest an appropriate place for a newsletter] or “Publications” in top menu bar to find *Linkage*. At least one participant thought this might be a faster way to locate the issue.

*Recommendation: Keep links in top menu bar and in central area of homepage.*



Figure 2: Areas Showing Where Participants Clicked to Access the *Linkage* Newsletter.

## The *Linkage* Newsletter In General

### *Purpose of Linkage*

When asked about the purpose the newsletter serves, participants offered several appropriate responses. Among the answers given were references to ongoing research and activities DCEG does to promote cancer research, highlights of activities within the divisions of DCEG, recent publications, news and profiles about people working at DCEG, and the support for current fellows and opportunities for potential fellows to join DCEG.

### *Intended Audience*

Participants seemed to correctly understand the audience of the newsletter as well. Members of the research community (both inside and beyond NCI), cancer advocates, and informed lay-persons were all mentioned as the primary audiences. Several participants noted that the newsletter was generally written in language understandable to audiences not directly involved with cancer research, but clarified that the newsletter was not aimed at general consumers (i.e. the public) of cancer information.

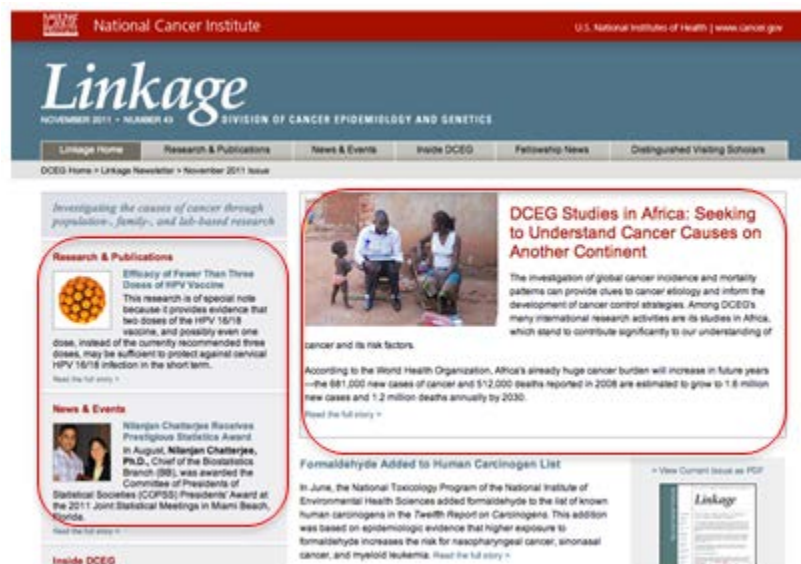
## Starting Out With the Newsletter

### *First Places to Explore*

Most participants said they would start their exploration of the *Linkage* newsletter with an article of

interest. During the session, they began looking for such articles in the main content area (the center of the page) or the left panel, which was correctly perceived to contain highlights (shown below in Figure 3). Other items of interest on the homepage included profiles of featured individuals and the “Inside DCEG” section (in order to find more information about DCEG, which was mentioned by participants from the cancer advocate audience).

These areas of the site seemed relatively conspicuous to participants; however, there was some confusion about whether general information about DCEG would be on the *Linkage* pages or on DCEG site.



**Figure 3: Areas of the *Linkage* Homepage Where Users Indicated They Would Start Looking For Interesting Content.**

### ***Table of Contents***

Several participants asked about a Table of Contents for the newsletter. This would seem to be a holdover from the printed version of the publication, but its inclusion for a web version may facilitate skimming content.

*Recommendation:* Consider offering a link or roll-over button which shows the contents of the printed version’s “In this issue...” section for a quick reference of newsletter content.

## **Additional Information**

### ***Finding Additional Information***

Participants mentioned that they expected to find links to more information imbedded within the article or at its end. A link on one article’s page (seen in Figure 4) offers a link to the “Scientific Highlights” page; however, participants who were familiar with *Linkage* knew that Scientific Highlights would not provide the additional information.



*Recommendation: Some participants suggested hyper-linking the names of staff or other projects to their webpage. If this is implemented, it is recommended to consider showing an indication when the user will be linked to a page outside of the DCEG Linkage website. The linked page could also appear in a new tab or window to help users retain their place within the Linkage site.*

The screenshot shows a webpage layout with two main columns. The left column has a red header 'Research & Publications' and a grey header 'RELATED LINKS'. The right column features an article titled 'Efficacy of Fewer Than Three Doses of HPV Vaccine' in red text. Below the article title is a red-bordered box containing the text 'Read additional Scientific Highlights'.

**Research & Publications**

- > DCEG Studies in Africa: Seeking to Understand Cancer Causes on Another Continent
- > Formaldehyde Added to Human Carcinogen List
- > U.S.-Russia Agreement Continues Radiation Effects Research
- > **Efficacy of Fewer Than Three Doses of HPV Vaccine**
- > Scientific Highlights
- > Major Editorials, Commentaries, and Reviews by DCEG Scientists

**RELATED LINKS**

- > EMBLEM study
- > NCI Center for Global Health
- > Twelfth Report on Carcinogens
- > American Academy of Arts and Sciences
- > Susan G. Komen for the Cure
- > Breast Cancer Research Stamp

**Efficacy of Fewer Than Three Doses of HPV Vaccine**

*This research is of special note because it provides evidence that two doses of the HPV 16/18 vaccine, and possibly even one dose, instead of the currently recommended three doses, may be sufficient to protect against cervical HPV 16/18 infection in the short term.*

The authors evaluated the vaccine efficacy of fewer than three doses of an HPV 16/18 vaccine using data from the Costa Rica Vaccine Trial. Women were randomly assigned to receive three doses of the HPV 16/18 vaccine or a control vaccine and were followed for incident HPV 16 or HPV 18 infection that persisted in visits that were 10 or more months apart (median follow-up = 4.2 years). A total of 5,967 women received three vaccine doses (2,957 HPV, 3,010 control), 802 received two doses (422 HPV, 380 control), and 384 received one dose (196 HPV, 188 control). Incident HPV 16 or HPV 18 infections that persisted for one year were unrelated to dosage of the control vaccine. Vaccine efficacy was 80.9% for three doses of the HPV vaccine (CI = 71.1%–87.7%; 25 and 133 events in the HPV and control arms, respectively), 84.1% for two doses (CI = 50.2%–96.3%; 3 and 17 events), and 100% for one dose (CI = 66.5%–100%; 0 and 10 events). Four years after vaccination of women who appeared to be uninfected, this nonrandomized analysis suggests that two doses of the HPV 16/18 vaccine, and maybe even one dose, are as protective as three doses. (Kreimer AR, Rodriguez AC, Hildesheim A, et al. Proof-of-principle evaluation of the efficacy of fewer than three doses of a bivalent HPV16/18 vaccine. *J Natl Cancer Inst* 2011;103:1444–1451)

Read additional Scientific Highlights

Figure 4: Example of an Article with a Link to "Scientific Highlights."

### ***"Related Links" Section***

Although one task of the evaluation was to find additional information on a specific article, none of the participants noticed the "Related Links" section shown in Figure 5. When asked to examine this section, participants reported that they did not associate "Related Links" with article-specific information, as the links offered seemed to be for more general information. Two participants perceived the links to be associated only with the article, but clarified that they offered "high-level," general information. Other participants were not clear whether the links were associated with the currently viewed article, or were for all articles in the current issue.

*Recommendation: Consider removing the "Related Links" section and including links at the end of articles to which they are related.*

Research & Publications

- > DCEG Studies in Africa: Seeking to Understand Cancer Causes on Another Continent
- > Formaldehyde Added to Human Carcinogen List
- > U.S.–Russia Agreement Continues Radiation Effects Research
- > **Efficacy of Fewer Than Three Doses of HPV Vaccine**
- > Scientific Highlights
- > Major Editorials, Commentaries, and Reviews by DCEG Scientists

RELATED LINKS

- > EMBLEM study
- > NCI Center for Global Health
- > Twelfth Report on Carcinogens
- > American Academy of Arts and Sciences
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Efficacy of Fewer Than Three Doses of HPV Vaccine

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Read additional Scientific Highlights

Figure 5: Related Links Section for an HPV Vaccine Article.

## Finding Other Information of Interest

### *Recent Updates and Recent Research*

Several participants said they would look in “News & Events,” while others mentioned “Research & Publications” as sections they would explore to learn more about recent research updates. Most participants expected a focus on people (awards presented, presentations given) in “News & Events” and information on research (new or featured publications) in “Research & Publications.”

### *Finding a Fellow*

Looking up information on a current or past fellow may be of interest to users within the NCI fellow audience for the site. Most participants expected information about a fellow to be under “Fellowship News” (shown in Figure 6). However, a few participants who were current fellows familiar with the newsletter knew to look under the “Comings and Goings” area which was located in the “Inside DCEG” section.

*Recommendation: Consider leaving “Comings and Goings” in “Inside DCEG” if it contains information on more than just fellows. However, providing a link to this section from “Fellowship News” may be helpful.*



Figure 6: The “Fellowship News” Main Page.

### *Inside DCEG*

A few participants mentioned that the label “Inside DCEG” was somewhat vague for this section (see Figure 7). They suggested adding a tagline or rollover with “About DCEG staff” to clarify the content of this section. Other participants understood what they would find in this section.

*Recommendation: Consider adding the tagline in the red header on the page.*



Figure 7: The "Inside DCEG" Main Page.

## Archived Issues

All participants easily found the links to archived issues page (see Figure 8). Some mentioned a preference for HTML format because it loads more quickly. Others preferred PDF because it is formatted better in terms of visual design. Participants were asked on their thoughts on the capability of having the newsletter available on their e-reader, and although there was some interest in e-books, it was not interpreted as a widely desirable feature.

While exploring the archives page, none of the participants realized they were no longer on the *Linkage* site, though this was not particularly a problem as they mentioned they would likely use the "Back" button of their browser to return to the previous page.

*Recommendation: Consider moving the Archives to the DCEG Linkage site and not include it within the Publications section of the DCEG homepage.*

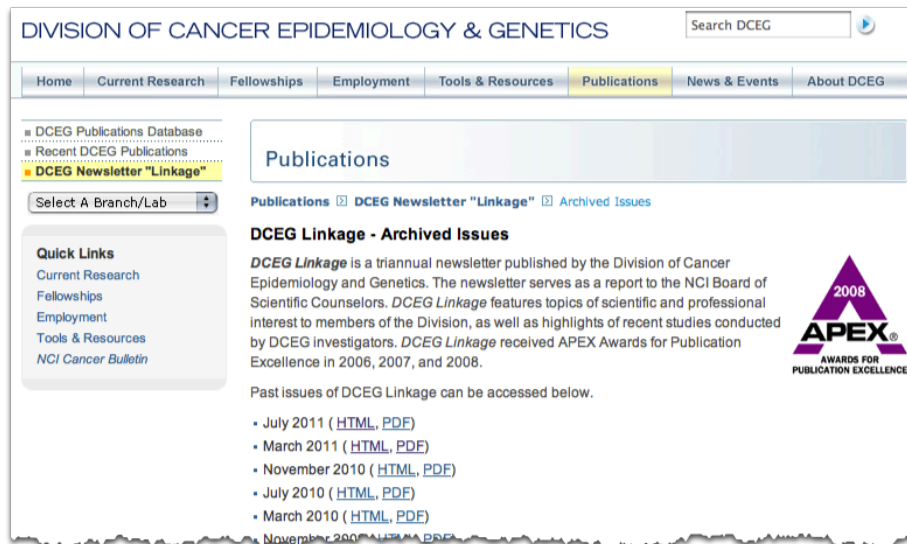


Figure 8: The *Linkage* Archives Located in the DCEG Main Website.

## Other Comments on the Website

### *Newsletter Publication Frequency*

Several participants said that they preferred receiving the newsletter three times per year. Their current reading behavior was reported to be adapted for this situation, and didn't feel that more frequent updates (about a particular event or feature) would be necessary (before the next version of the newsletter came out).

### *E-mail Notifications*

The ability to request an e-mail notification was acceptable to most participants, on the condition that it was not too frequent. Two times per month was the most frequently reported interval for this feature.

### *Search Function*

One participant requested a *Linkage*-specific search function to aid in locating topics or people of interest within an issue. The site-wide search at the top of the page was noted, but it was not perceived as being specific enough to the newsletter for that participant.

## Round Two Usability Evaluation

### *Linkage Homepage*

#### *Finding the Newsletter*

The initial task involved users finding the newsletter from the DCEG homepage (shown in Figure 9), which can reveal where the newsletter fits within participants' conceptual model of the site. There were many possible entry points to the newsletter from the homepage. Some participants looked for the newsletter under the "News and Events" tab, or noticed a link to an article in the feature window.



Two participants looked in the “Publications” tab and found a link to the newsletter from the live site (which is assumed to be different once the proposed redesign of the DCEG homepage has launched). One participant noticed the *Linkage* Newsletter section at the bottom.

*Recommendation: Consider moving the PDF image of the Newsletter to the home page and possibly place it higher on the page than the current Linkage highlight area so it does not appear below the fold.*

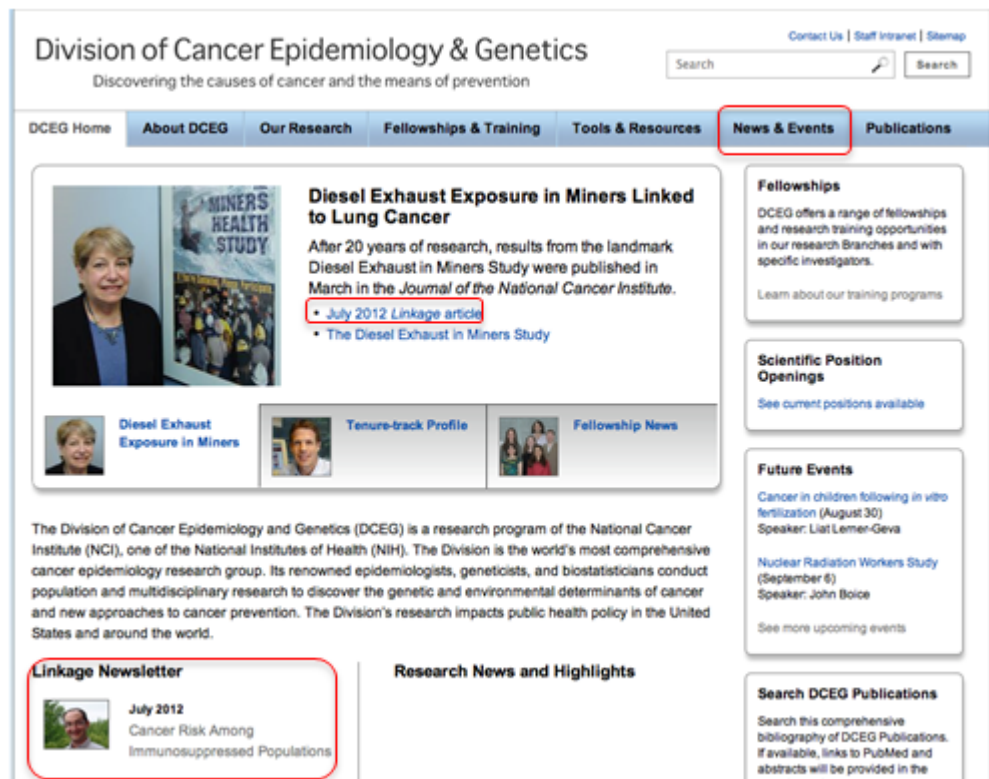


Figure 9: A Proposed Redesign of the DCEG Homepage Showing Possible Areas to Access the *Linkage* Newsletter.

### *First Impression of the Linkage Homepage*

The *Linkage* homepage did not seem to stand out to participants (see Figure 10). Although participants were asked who the audience of the newsletter was, only a few noticed that information explaining the audience was in the introductory paragraph. One participant mentioned this page could provide contact information for the editorial team and/or instructions on how to submit a suggestion for an article.

*Recommendation: Consider additional visual design to help distinguish individual sections from each other and from the home page. Consider adding contact/additional information about Linkage on this page.*

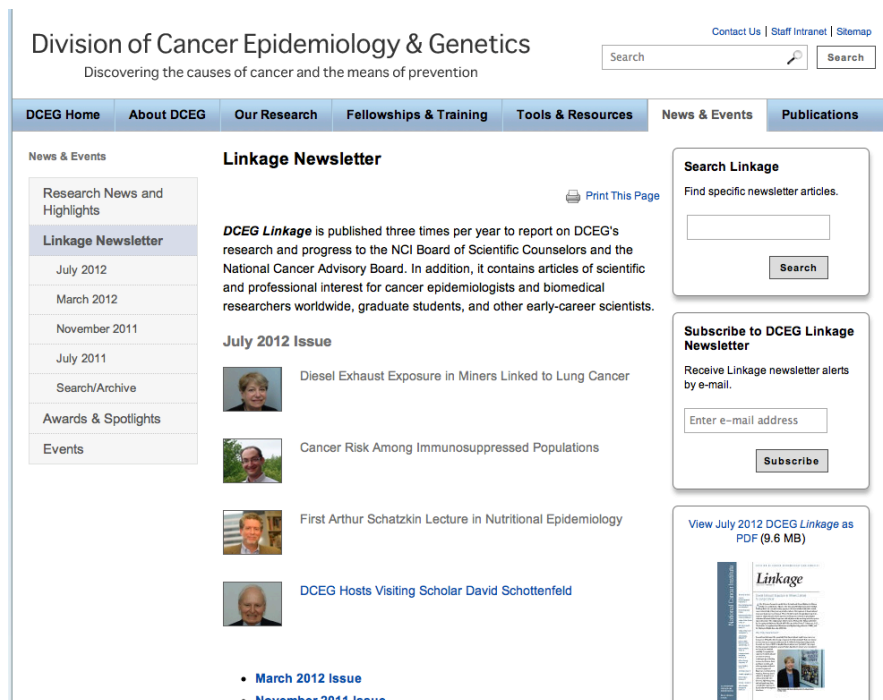


Figure 10: The *Linkage* Newsletter Homepage for the Second Round of Testing.

### Left Navigation

There was some indication of confusion noted with the left side navigation (circled in Figure 11). The grey highlight was being perceived to be only a header and not positional feedback to show the current page the user is on.

*Recommendation: Consider adding an explicit indicator or using background tie in to make better association between the page and the menu.*

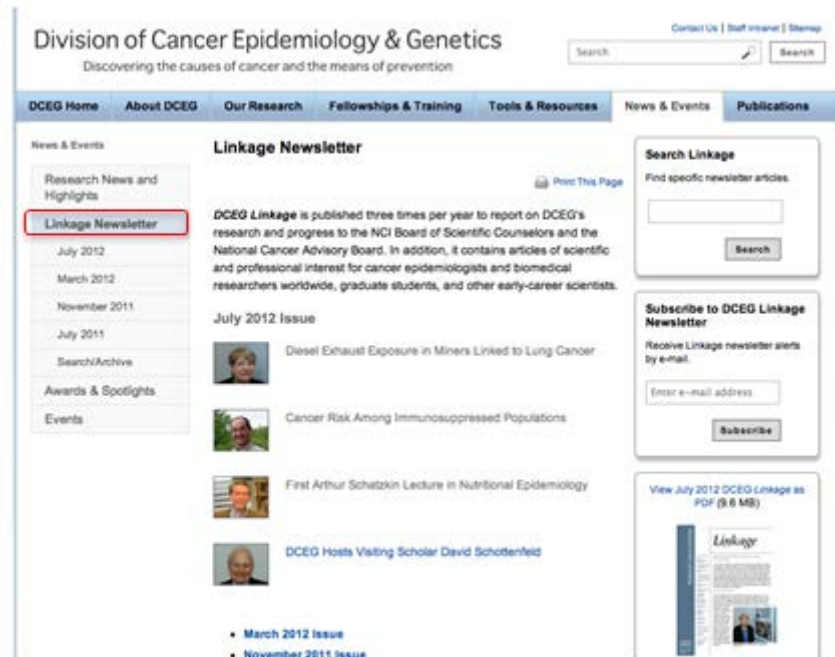


Figure 11: Positional Feedback and Header for the *Linkage* Homepage.

### Boxes of Content

The boxes on the right side of the page (circled in Figure 12) were not often noticed by participants. A few mentioned seeing the PDF version because the image drew their attention. One participant mentioned wanting to sign up for the e-mail updates, but took several minutes before finding this area on the page. Another participant thought the e-mail subscription was another search box.

*Recommendation: Consider repositioning the subscription and PDF boxes so they are not prone to “banner blindness,” a common phenomenon due to the frequent position of ads shown on the right side of a page. Reformatting the e-mail subscription box to appear differently than the search box may also help.*



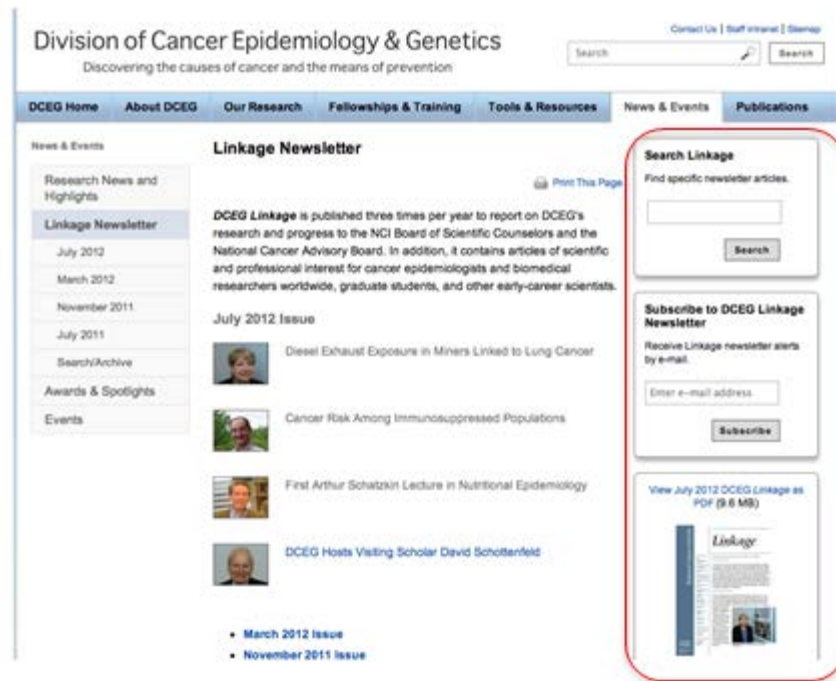


Figure 12: Similar-Looking Content Located on the Right Side of the *Linkage* Homepage.

### Returning to the Homepage

When asked to return to the *Linkage* homepage after browsing the newsletter, a few users navigated to the DCEG homepage or the July 2012 page accidentally. Some users believed that the July 2012 main page was the homepage for the entire newsletter.

*Recommendation: If the positional feedback and design of the page is revised to make the homepage stand out, this issue will likely be resolved.*

### July 2012 Issue of the Newsletter

#### Identifying the Link to the Current Issue

All participants were able to identify the most recent newsletter as July 2012 and either clicked on the title or the navigation tab to access it (circled in Figure 13). However, few participants identified the articles listed down the middle of the page as a preview to the contents of the latest issue. This formatting is different than the previously tested version of the *Linkage* site, which offers more description for the 2-3 featured articles.

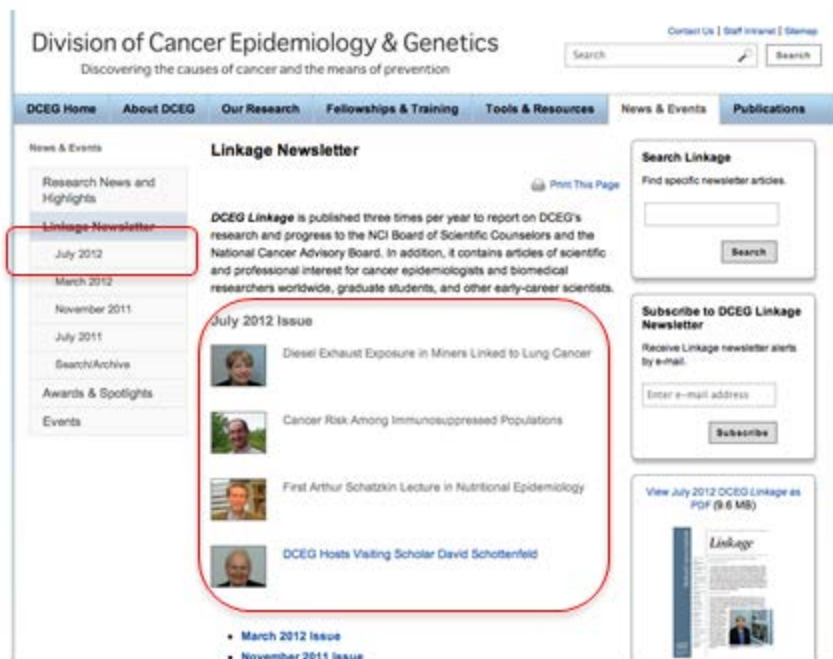


Figure 13: Areas to Access the July 2012 Issue.

### July 2012 Main Page

After viewing the main page for the July 2012 issue (shown in Figure 14), some participants seemed unsure why a preview of articles was shown on this page as well as the homepage. They did not comment on the amount of articles shown, or whether there was a difference between the pages. This page does not offer much more content or information than the *Linkage* homepage.

*Recommendation: Consider additional visual design to help users understand when they're looking at the summary versus the actual newsletter. Also consider having only two levels instead of three. Consider showing either feature articles or a table of contents list instead of two article preview lists.*

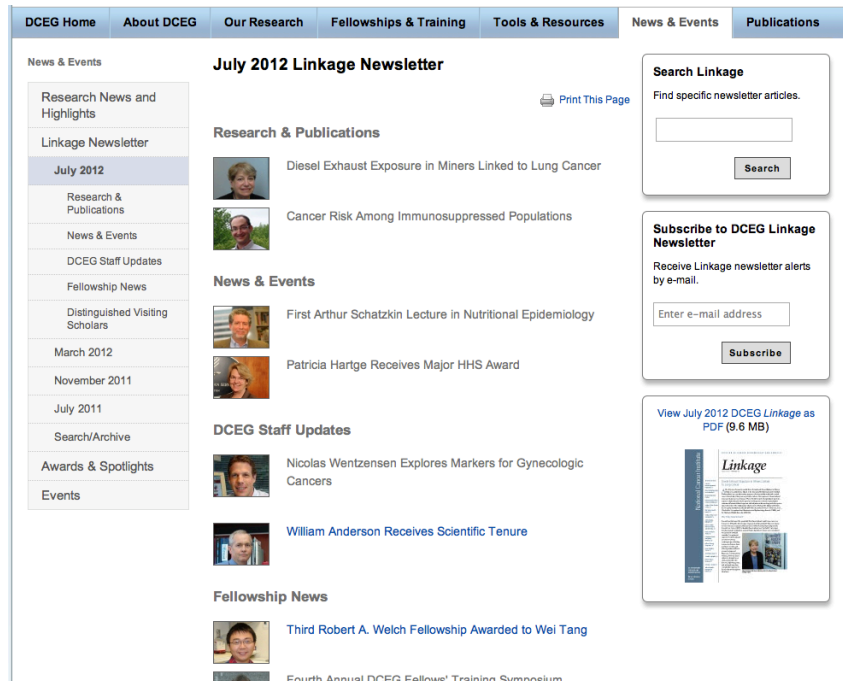


Figure 14: The July 2012 Main Page.

### Viewing Newsletter Sections

Almost all participants used the left navigation panel to view other newsletter sections (circled in Figure 15). However, it was noted that the navigational hierarchy seemed unclear. It may have been difficult to perceive the difference in indentation of the items in the navigational menu. For example, “Research News and Highlights” and “Linkage Newsletter” are first-level pages, but the “July 2012” link is a second level page. Beneath the newsletter contents, “Awards and Highlights” and “Events” are also first-level pages. Participants seemed unsure what section of the navigation the newsletter was located, as some hesitation was observed while selecting an area. A few participants accidentally went to the events page (last link) located on the DCEG homepage and did not seem aware that they had left the *Linkage* newsletter section of the site.

*Recommendation: Consider showing either feature articles or a table of contents list instead of two article previews in the center content area on the current issue’s main page. Consider additional visual indication that the section titles shown are indeed links.*

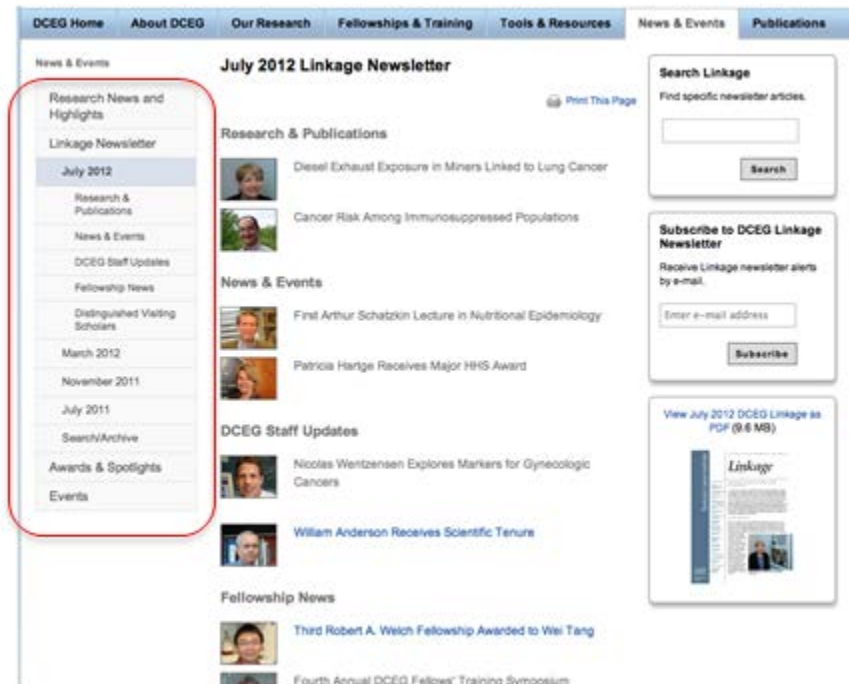


Figure 15: The Site Navigation As Shown on the July 2012 Main Page.

## Elements of the *Linkage* Website

### Article Pictures

While exploring the newsletter's sections, participants noticed that some articles had pictures next to the articles listed, but others did not (see Figure 16). When asked about this difference, participants said the articles with pictures might be more important or that the site was unfinished. Other participants offered that finding an appropriate picture that is useful in supporting an article might be difficult for parts of the newsletter that cover broad or numerous topics.

*Recommendation: Consider reformatting the article listing to allow for more variation or making listing consistent with no pictures.*

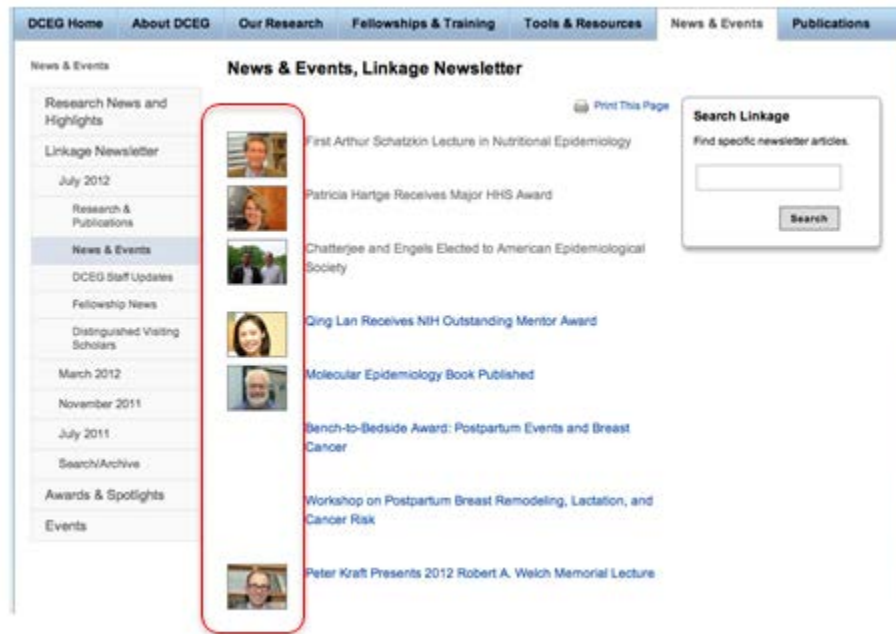


Figure 16: A Section of the Newsletter with Pictures Accompanying Only Some of the Listed Articles.

### Archive

All participants were able to successfully locate the “Archive” page (shown in Figure 17) when asked about finding a previous issue. The list of articles at the bottom was noted with mixed feelings – some participants liked to have a direct link to a particular issue, while some participants believed it was counter to the search function shown above. These participants seemed to prefer to enter search criteria for a particular topic or date of publication instead of searching for a target from a list of possibilities.

Although it was not explored with participants directly, it should be noted that the archive section for the newsletter is now located within the *Linkage* website and not available from the DCEG homepage (as the previous version was).

*Recommendation: Consider showing a list of previous issues on a page separate from the search (perhaps with a link on this page to the list).*

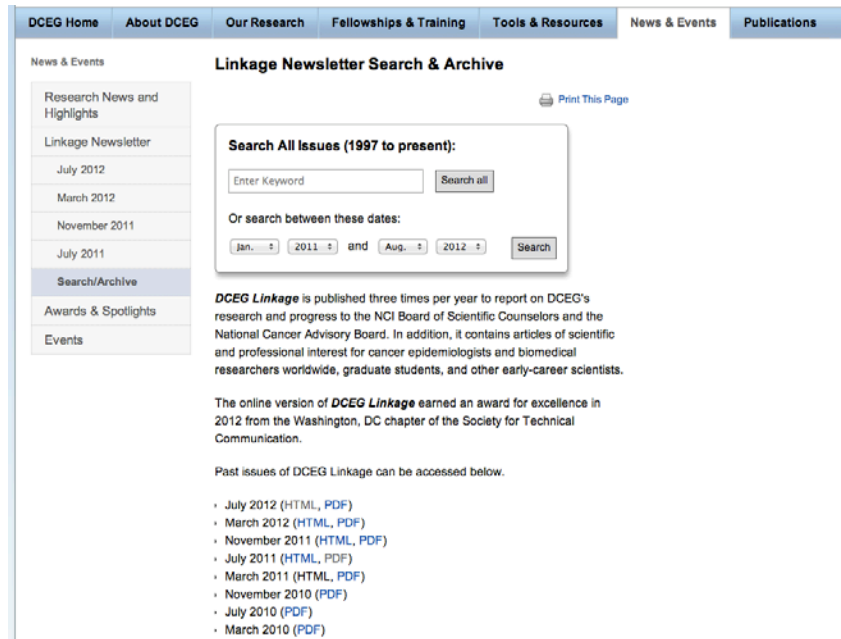


Figure 17: The “Archive” Page of the Newsletter.

When asked about PDF version vs. HTML version, most participants mentioned that the PDF version was better visually and to print, while the HTML version was easier to scan and find individual articles quickly.

*Recommendation: It is not clear that all users will understand the reference to “HTML.” Consider making the title a link to the HTML version and remove the direct mention of “HTML.” Also consider a PDF icon instead of only providing the hyperlink.*

The PDF files on the “Archive” page open in the same browser window. This could be problematic as users may close the window after reading the PDF and have to start over.

*Recommendation: Consider opening PDFs in a new browser tab or window.*

## Search Options

### Types of Search Boxes

Three types of search boxes are available on the site (see Figure 18). Most participants expected these search boxes to have different functions. Two of them have the same function; however, participants weren’t sure if the two seemingly identical results were different even after exploring the results that each search box provided.

*Recommendations: Considering using identical titles for each Linkage search box even if additional functionality is provided in one. Alternately, consider having one search and providing*

a link in the other location.

**Search All Issues (1997 to present):**

Enter Keyword

Or search between these dates:

Jan.  2011 and Aug.  2012

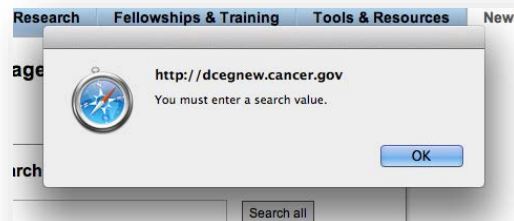
**Search Linkage**  
Find specific newsletter articles.

[Contact Us](#) | [Staff Intranet](#) | [Sitemap](#)

**Figure 18: Examples of Search Boxes Found on the *Linkage* Website.**

The search bar on the left of Figure 18 is found on the archives page. It appears to offer either a keyword search or a date search. However, when no keyword is entered, the search does not work. A pop-up error (see Figure 19) appears and specifies that a search value must be entered.

*Recommendation: Consider enabling a date-only search, or indicate that both fields are required.*



**Figure 19: Error Pop-up Encountered When Omitting the Keyword on an "Archive" Page Search**

### **Search Results**

The results page on the left in Figure 20 is shown when searching via the archives page or the within-page search box. The other results page on the right in Figure 20 appears for the same keyword using the search box at the top in the header. Although the results listings are different, the top hit for the broad, site-wide search on the right is still a *Linkage* article, which caused some users to be unsure how broad the search was.

*Recommendation: Consider putting "Search DCEG" in the textbox so users are aware the search is not limited to the Linkage Newsletter.*

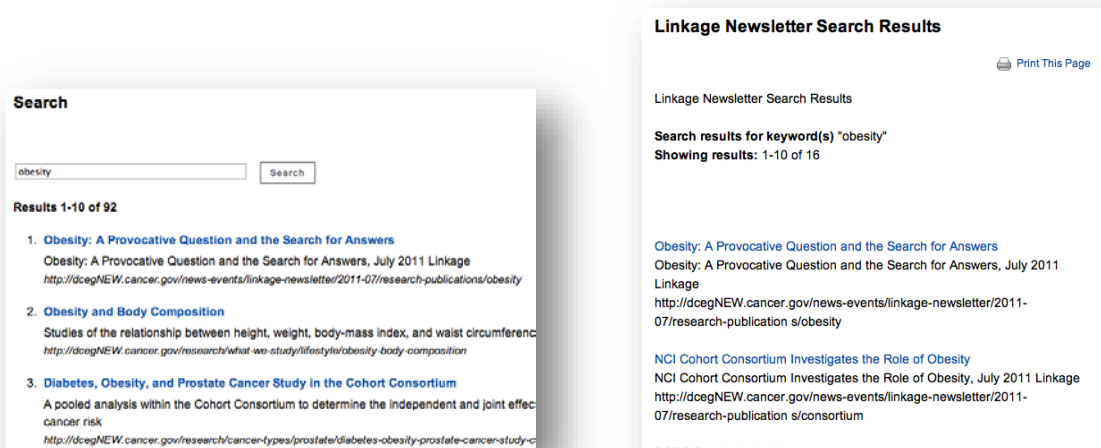


Figure 20: Examples for Two Searches Performed Using the Same Keyword.

While exploring articles from previous newsletters (ex. through a search), most participants noted that they could not access the full issue of the newsletter the article was from (see Figure 21). One participant noticed that the July 2011 issue was still recent enough to find in the left navigation, but others reported that they would have to go back to the archives page to find the issue used in the example case explored during testing.

*Recommendation: Consider putting a direct link to the issue an archived article is from.*

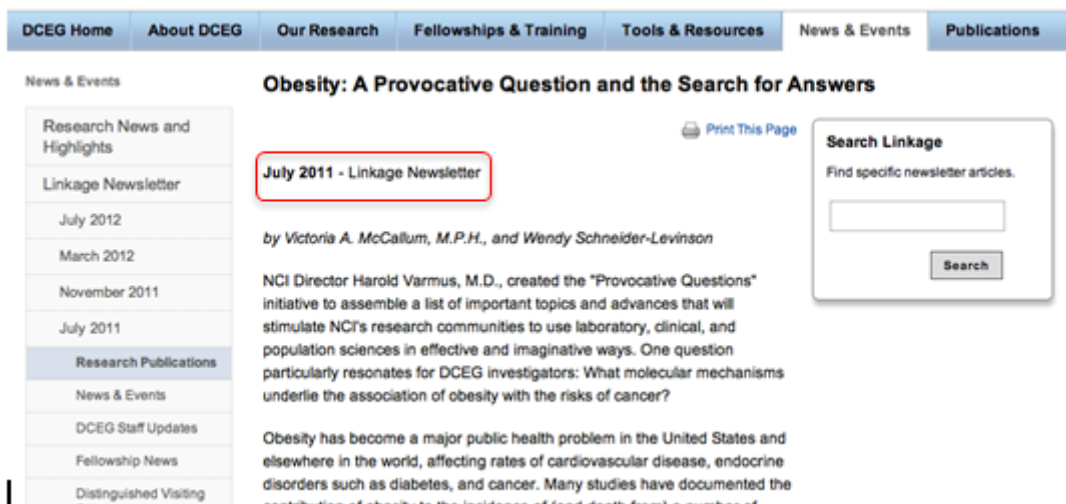


Figure 21: Non-Hyperlinked Formatting of the Newsletter Issue on an Archived Article.

## Other Issues



### Visited Link Color

Visited links are shown throughout the site in grey and are not underlined (example in Figure 22). This formatting may lead users to assume they are not links, or that they are links that are disabled.

*Recommendation: Consider using the standard purple color as a visited link color and underlining all links.*

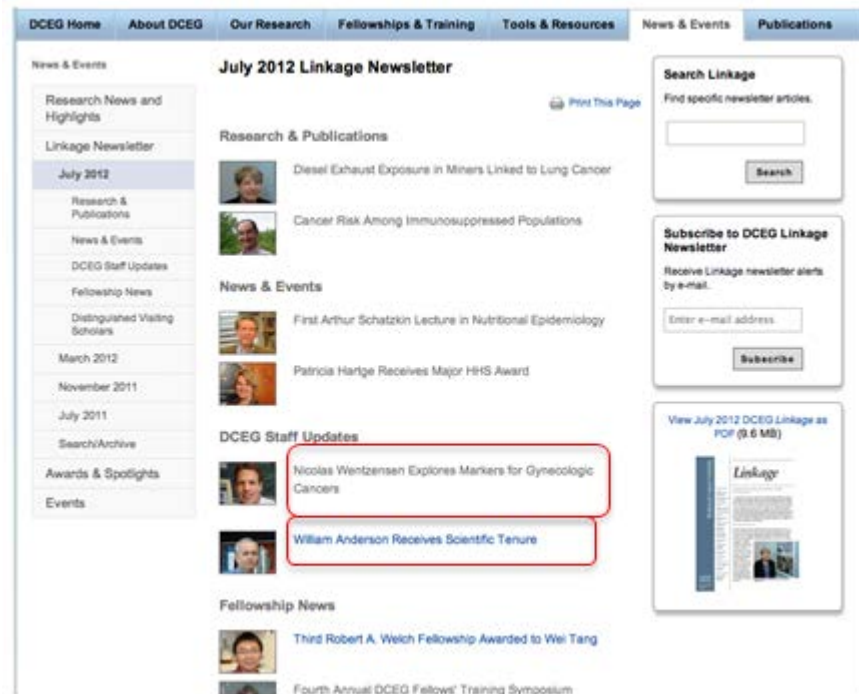


Figure 22: Example of Grey Visited Links.

### Content Below the Fold

Many of the participant's browser windows were either not completely maximized or on a lower resolution, and the DCEG homepage looked as if it did not continue past the current screen (example in Figure 23). This could preclude users from seeing the content below, which includes a box that features the *Linkage* Newsletter.

*Recommendation: If finding the newsletter from homepage content is important, consider putting this feature above the fold.*

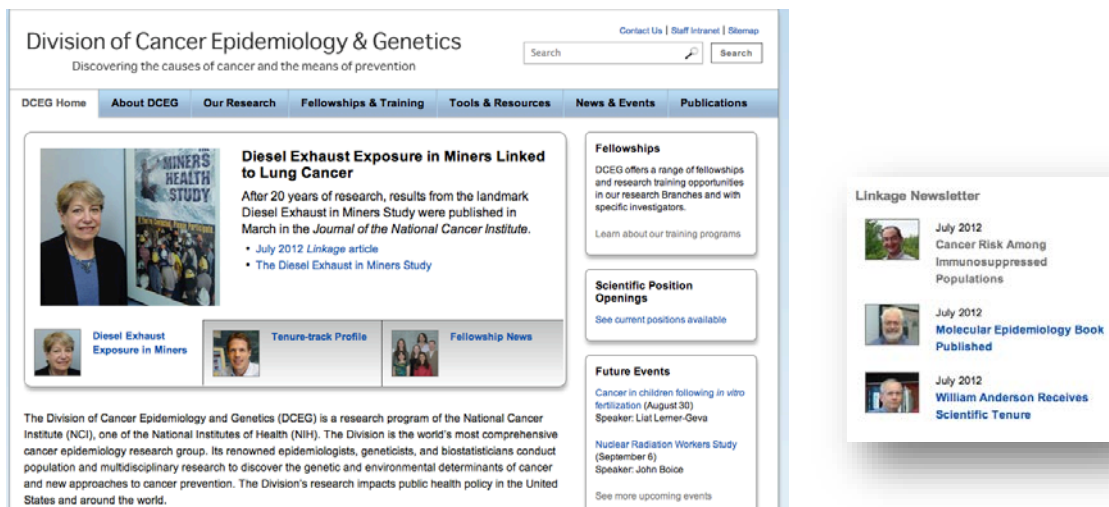


Figure 23: The DCEG Homepage on a Small Screen and the *Linkage* Feature That May Be Missed Below the Fold.

### Highlighted Tabs

The highlight for the tabs provides good visual feedback on which page in the navigation menu is currently active. However, the same color is used on the menu when other tabs are moused over, which could potentially be confusing (especially for a user who might accidentally leave his cursor over the navigation menu while reading a page).

*Recommendation: Consider removing the highlighting on the navigation menu when the tabs are moused over, or make the cursor highlighting a different shade than the feedback highlighting.*



Figure 24: Mousing Over "DCEG Staff Updates" When On the July 2012 Page.

## Conclusion

As many paper documents today are switching to an electronic format, it is important for readers of the online version of the *Linkage* newsletter to have a suitable experience. Overall, participants were able to easily find and read articles within the *Linkage* newsletter for both site designs. The newsletter sections were reported to be familiar to those who read the paper version, and were generally understood by people new to the newsletter. The online version of the newsletter offers functions (such as the ability to search past issues for archived articles) that are either time consuming or not possible with the paper version.

The findings from the first round of evaluations showed that the site design was received positively and that the pictures and other content engaged participants. The aspect of the site that was not as clear to participants was the “Related Links” section. This area on the left side of the screen displayed links for all feature stories no matter what article was being viewed. This resulted in participants questioning the relevance of the links; they suggested that hyperlinks for more information could be embedded within the text of the article. Preference for HTML and PDF versions of the newsletter were reported to be split down the middle. The *Linkage* site was visually designed differently than the rest of the DCEG website, however participants did not comment on this difference when navigating to *Linkage* from the DCEG homepage.

The second round of evaluations provided information on the layout changes due to the shift to a new design template. A test site reflecting an updated look to the DCEG homepage and Linkage newsletter section tied the two sections together visually. Participants did not experience any difficulty navigating the site and finding articles of interest; however, the visual design of the site was not received as positively (one participant mentioned their preference for the PDF version was due to the site’s less engaging design). Some proposed changes were recommended to improve the site’s visual treatment; however, the constraints of the templates will have to be considered.

## Appendix A- Facilitator's Guide for Round One Usability Evaluations

### Note:

The purpose of this document is to guide the moderator. The questions and tasks contained herein may not be asked as written. The facilitator often draws on participant comments and the natural flow of the testing process to determine the flow of the session. While the facilitator will try to follow the order of the guide, many times tasks will come up ahead of time or in different order. The facilitator may allow the order of the tasks to change in order to let the process flow naturally.

---

### Pre-Test

[Administer the informed consent.]

### Introduction

Thank you for agreeing to participate in this study.

NCI'S Division of Cancer Epidemiology and Genetics (DCEG) produces a newsletter called *Linkage* that is available both online and in printed form. DCEG has recently revised the format of the online newsletter, and today we are conducting a usability test of the redesign. As a participant, you will be given a set of information-gathering tasks to do on the website, and I will watch to see how easy or difficult it is for you to find the information.

As we go through the tasks, feel free to offer any comments or suggestions that occur to you. We are looking for things about the design that are working well as well as things that could be improved. There are two important things you should keep in mind while you work with the website:

- First, I did not create the design so you can't hurt my feelings with any criticisms you might have. If there are problems with the design I would like to discuss them with you to see if we can find a way to improve the design.
- Second, we are evaluating the website and not you, so you cannot make any mistakes. The site is supposed to be intuitive and easy to use. If it isn't, that's a problem with the website – not with you.

I'd like you to know that there are some observers with us today helping me by taking notes, but don't worry about them. You and I will work on this together and they'll just watch and listen.

Do you have any questions for me before we get started?

### Background

We have invited persons with a variety of backgrounds to participate in this activity so I'd like you to tell me:

1. Where do you work and what is your role there?
2. [Researchers only]
  - a. What type of research do you do?
  - b. How long have you done this kind of research?
3. [Cancer advocates only]
  - a. What kinds of information do you typically look for?

4. [Graduate students only]
  - a. What types of research are you interested in?
5. Have you seen the *Linkage* newsletter before today? If so, what kinds of information have you found in the newsletter?

## Tasks

1. [If P has accessed the online version before] How have you accessed the online version of the newsletter in the past? [from DCEG website, through Google search, through link in an email, etc.]
2. [from DCEG homepage] Show me how you would access the newsletter from this page.
3. [from *Linkage* homepage] Take a look around this page and tell me what you think the purpose of the newsletter is. Who do you think it is intended for?
4. What kinds of information would you be interested in in this newsletter?
  - a. [Note categories and whether they go to top menu bar or left panel: Research & Pubs, News & Events, Inside DCEG, Fellowship News, Distinguished Visiting Scholars]
  - b. [On whatever category they choose] Show me how you would read about <category>.
  - c. If you wanted more information about this topic, where would you look/what would you do?
  - d. Take a look at the 'Related Links' section. Why are these here?
5. Let's go back to the home page. [Note how P does this.] You were looking at a <category> article. How would you find other articles in this category?
6. What research news or updates have come out of DCEG in the past several months?
7. If you wanted to find out where a new fellow is working now, where could you find that in this issue?
8. If you wanted to contact some of the leading researchers from DCEG who are doing cutting-edge, current research, how could you identify them in this newsletter?
9. If you wanted to see the March, 2011, issue, how would you do that?
10. How could you see a list of all archived issues? [Have P go to archived issue list.] Ok, now let's go back to the *Linkage* homepage. [Does P know how to return (archived issues are on DCEG site, not *Linkage* site)?]

## Follow-up Questions

1. Administer the System Usability Scale (SUS) evaluation (standardized measure of website usability).
2. How easy or difficult was it for you to find out what was contained in this issue of *Linkage*?
3. Was there anything missing – any information or topics that you expected to see but didn't?
4. Is there anything about the organization of the web pages that you would change?

## Wrap up

OK, we're done. Do you have any further questions or comments?

Thanks again for your participation.

## Appendix B - Facilitator's Guide for Round Two Usability Evaluations

### Note:

The purpose of this document is to guide the moderator. The questions and tasks contained herein may not be asked as written. The facilitator often draws on participant comments and the natural flow of the testing process to determine the flow of the session. While the facilitator will try to follow the order of the guide, many times tasks will come up ahead of time or in different order. The facilitator may allow the order of the tasks to change in order to let the process flow naturally.

---

### Pre-Test

[Administer the informed consent.]

### Introduction

Thank you for agreeing to participate in this study.

NCI'S Division of Cancer Epidemiology and Genetics (DCEG) produces a newsletter called *Linkage* that is available both online and in printed form. DCEG has recently revised the format of the online newsletter, and today we are conducting a usability test of the redesign. As a participant, you will be given a set of information-gathering tasks to do on the website, and I will watch to see how easy or difficult it is for you to find the information.

As we go through the tasks, feel free to offer any comments or suggestions that occur to you. We are looking for things about the design that are working well as well as things that could be improved. There are two important things you should keep in mind while you work with the website:

- First, I did not create the design so you can't hurt my feelings with any criticisms you might have. If there are problems with the design I would like to discuss them with you to see if we can find a way to improve the design.
- Second, we are evaluating the website and not you, so you cannot make any mistakes. The site is supposed to be intuitive and easy to use. If it isn't, that's a problem with the website – not with you.

I'd like you to know that there are some observers with us today helping me by taking notes, but don't worry about them. You and I will work on this together and they'll just watch and listen.

Do you have any questions for me before we get started?

### Background

We have invited persons with a variety of backgrounds to participate in this activity so I'd like you to tell me:

1. Where do you work and what is your role there?
2. [Researchers only]
  - a. What type of research do you do?
  - b. How long have you done this kind of research?
  - c. What publications or websites do you regularly use to keep up with cancer research?  
[Encourage participant to list at least three.]

3. [Graduate students only]
  - a. What types of research are you interested in?
  - b. What publications or websites do you regularly use to keep up with cancer research?  
[Encourage participant to list at least three.]
4. Have you seen the *Linkage* newsletter before today? If so, what kinds of information have you found in the newsletter? If you have not read it, what kinds of information do you expect to find in it?
5. In what format have you seen the *Linkage* newsletter? [Probe on whether they've seen the online version or the paper copy.]
  - a. [If P has accessed the online version before] How have you accessed the online version of the newsletter in the past? [from DCEG website, through Google search, through link in an email, etc.]



## Tasks

1. [from DCEG homepage] Show me how you would access the newsletter from this page.
2. [from *Linkage* homepage] Before we get started, tell me about the newsletter. Who do you think this newsletter is intended for? How did you determine that? [Note if P mentions that this information is on the current page.]
3. If you wanted to see the latest issue, how would you do that?
4. Here's the latest newsletter. Go ahead and explore. Find something that you would be interested in learning about here.
  - a. Have you read the newsletter? Show me an article you've read, or one that you would typically read.
  - b. [On whatever category or article they choose] Show me how you would read about <category or article>.
5. In an earlier version of the newsletter, there was an article on obesity. Do you remember an article on obesity? If you knew what the article was about but didn't know what issue it was from, what would you do? [Note what search box they use.]
  - a. Tell me what happened when you searched. Did you notice that there is another search box? (either archives or on the page). What is the relationship between the various search boxes? [Compare results for each.]
  - b. What would you do if you wanted to see the rest of the newsletter that this article was from?
6. Let's go back to the landing page for the current issue. [Note how P does this.]  
[from July 2012 issue page] Do you think this page lists all of the articles in this particular issue? You were previously looking at a <category> article. How would you find other articles in this category?
7. What research news or updates have come out of DCEG in the past several months?
8. If you wanted to find out where a new fellow is working now, where could you find that in this issue?
9. If you wanted to contact some of the leading researchers who are doing cutting-edge, current research, how could you identify them in this newsletter? [Probe on whether they would want a direct link to their e-mail from the newsletter.]
10. How could you see a list of all archived issues? [Have P go to archived issue list.] Ok, now let's go back to the *Linkage* landing page. [Does P know how to return?]

## Follow-up Questions

1. Administer the System Usability Scale (SUS) evaluation (standardized measure of website usability).
2. How easy or difficult was it for you to find out what was contained in this issue of *Linkage*?
3. Was there anything missing – any information or topics that you expected to see but didn't?
4. Is there anything about the organization of the web pages that you would change?

## Wrap up

OK, we're done. Do you have any further questions or comments?

Thanks again for your participation.

## Appendix C – Verbal Informed Consent Form

### **Verbal Consent Form**

#### *DCEG Linkage Usability Test*

As part of this research, I need to ask you to formally consent to participate in this usability test. As part of a research project for the National Cancer Institute, we are evaluating the usability of DCEG's *Linkage* website, and we would like you to assist us by participating in a usability evaluation.

Your participation is voluntary, and if you choose not to participate it will not affect your relationship with the National Cancer Institute. You may ask questions at any time during the session. You are also free to stop the session at any time without penalty and without any questions being asked of you.

You will be asked to perform a series of information-seeking tasks and provide your opinion on the design and navigation of the website. The total time involved, including instructions, will be no more than 30 minutes.

All information collected in this study is confidential. Any findings will be reported in aggregated form. We won't be asking anything personal and no identifying information will be shared.

There will be no recordings made of the audio or visuals from the usability test.

Do you have any questions at this time?

If you agree to participate, you are saying that you understand what I've told you and that any questions you had were satisfactorily answered. You are also saying that you are at least 18 years old and that you voluntarily agree to participate.

Do you agree to participate in this study?

Participant's name: \_\_\_\_\_

Date: \_\_\_\_\_

Researcher's signature: \_\_\_\_\_