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ILS 655 Assignment – Digital Library Review Paper 01(02)
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Digital Library: Nuclear Pathways

URL Location: http://www.nuclearpathways.org

I. Project Background

The digital library found at http://www.nuclearpathways.org, brings the data of three separate digital libraries together in one condensed source. Created in the time between 2004, and 2005, it utilizes the libraries and databases that belong to the ALSOS digital library for nuclear issues, AtomicArchive.com, and NuclearFiles.org. Based upon their current list of partner sites, at one time there was also a fourth organization, Chemcases.com, but as will be explained in part III of this review it now seems to be inoperable. Each library has their own distinct mission and goals, but their commonality is that they all share the desire to spread awareness about nuclear issues, from both the past, and the present.

To understand how Nuclearpathways.org came about, it is important to look at each of the libraries that make it up, individually. The ALSOS digital library, places a strong emphasis on making the historical data, especially the information surrounding the Manhattan Project, available to as wide an audience as possible.(Frank Settle, 2010) It is being developed by "Dr. Frank Settle, and a group of trained college students" at Washington and Lee University; as such it appears to have the manpower to provide extra information beyond simply digitizing records.(Frank Settle, 2010) Their contributions to Nuclearpathways.org are praised for having extensive annotations useful for both students and educators.

Meanwhile, at the same time there existed three other major sources about nuclear issues. AtomicArchive,com, states that their website "was created … to understand the science, history, and consequences of the atomic age."(1998-2011) It should also be noted that their site sells an educational CD-ROM entitled *Atomic Archive: Enhanced Editon*, and that their online website was designed to accompany and supplement that CD-ROM. As a

result their contribution to NuclearPathways includes digitized primary resources, such as original texts, photographs, videos, eyewitness accounts, and maps. NuclearFiles.org is similar to AtomicArchives.com in that they both place a strong emphasis on primary resources, but NuclearFiles.org has a noticeably different background and places greater emphasis on digitizing documents of correspondences, and official treaties. The reason for this divergence, is probably because NuclearFiles.com was a project created by the *Nuclear Age Peace Foundation* before it was grouped into the larger digital library found at http://www.nuclearpathways.org. Forming in 1982, the *Nuclear Age Peace Foundation* has been working towards their ultimate goal of eliminating of all nuclear weapons worldwide. "It is a nonprofit, nonpartisan, international education and advocacy organization", and it has been officially recognized by the United Nations.(About the Nuclear Age Peace Foundation, 1998-2011). Based upon the organization's mission one can see that they consider nuclear arsenals to be a universal threat, and that instead of resorting to life-ending means of violence, nations of the world should work together to encourage peace, and order. Lastly, Chemcases.com is a website produced by Kennesaw State University. Unlike the others that share the philosophy of making selected materials available to a wider audience, Chemcases.com is strictly an educational site. It contains a series of case studies that are supposed to supplement the basic curriculum of a general chemistry course. As will be mentioned later in this review, specific information about Chemcases.com was minimal because it appears that many of their links, and navigational tools no longer function causing the site to have some serious service issues.

Therefore, prior to 2004, there existed four separate sites, each of which addressed topics pertinent to discussing nuclear matters. The digital library located at http://www.nuclearpathways.org was formed, according to an article in *Computers in Libraries* as a type of "clearinghouse" where all four sites could compile their data on nuclear issues in one centralized location.(2005, p.52(1)). In looking through the *National Science Foundation's* website, I was able to locate two standard grants awarded to the site entitled "Collaborative Project: Nuclear Pathways – A Model for Composite Digital Collections" in 2004. Both were estimated to expire sometime around 2008 and 2009, and I was unable to find any grants they may have received since the initial investment except for an article by Lee L. Zia, which stated that The Office of Multidisciplinary Activities in

NSF Directorate for Mathematical and Physical Sciences was providing additional funding.(March 2005) Grant abstract number 0434278 awarded $129,368.00, and Laurence Peterson from Keenesaw State University was the principal investigator.(National Science Foundation, April 2007) The other grant, abstract number 0434252, awarded $507,961.00 and the principal investigator was Frank Settle from Washington and Lee University. (National Science Foundation, April 2007) With that money, http://www.nuclearpathways.org was created, however, the initial starting date is slightly vague because all of the grants were awarded in the year 2004, but the site lists it's copyright years as being from 2005 through 2011.

Its official mission statement is not listed on the site, but in details 'about' the site (2005-2011) it states:

> "Nuclear Pathways makes information on historic and current nuclear issues more accessible and comprehensible to the public, educators, and students from middle school through graduate programs. Beginning with the Manhattan Project, the massive scientific and technological effort that produced the first atomic bombs, nuclear issues have had a profound effect on every aspect of society. Nuclear issues have influenced the evolution of science and technology, arts and humanities, as well as the domestic politics of many nations and international relations."(NuclearPathways.org)

Based upon this, one can see how this site's basic direction attempts to include the key background components, and mission statements of each organization it encompasses. NuclearPathways provides information on nuclear issues, but it is also clearly includes many of the political views regarding peace advocated by the *Nuclear Age Peace Foundation*.

II. Organizations of Resources

The site http://www.nuclearpathways.org has a large amount of documents available, and while it is not specified anywhere on the site it would be reasonable to assume the number of items it maintains links to is in the thousands. For example, the ALSOS digital library, (Nov 11, 2011) which is one of the four libraries that it comprises "provides a vetted, annotated bibliography of over 3,000 books, articles, films, CDs and

websites …".(http://alsos.wlu.edu/). All the search or browse results found on Nuclearpathways.org (see Section III for more details) are listed alphabetically by designated topics. After someone has chosen a specific topic, and then selected which result they would like to view they are actually taken to the web page of one of the smaller websites that is a part of NuclearPathways.org. The entire purpose of this combined digital library is to direct the viewer to one of the specific smaller websites that contains the information that they are researching. Metaphorically the site acts as a type of highway where it will help get you where you are going faster, but the end result of where you want to be involves eventually getting off the highway and onto a smaller street. Unfortunately the way the results, and the links that will inevitably take you off the webpage and onto one of the four partnering websites that make up NuclearPathways.org are unclear at first glance. For example, the *ALSOS digital library* has a lot of documents to offer, but the majority of the time it was listed on the results pages as being an 'Annotated Bibliography'. Upon clicking on the link, one would find many more results, but to the casual user this label would blend in with the other single document links that were listed for sites such as AtomicArchive.com. It leaves you feeling as though there are fewer results than there actually are available. For example, selecting Harry S. Truman will provide you with a small list of documents, but if you click on the 'Annotated Bibliography' link it takes you to a list of 275 items that involve or mention President Truman on the *ALSOS* site. On the other hand however, the numeral they provide listing the number of resources for any selected topic, is vague anyway. On the same page as the list of results, is a list of alternative search words that might help your research, however, they are also numbered as results. Therefore, it may say you have eight results, when in fact you only have three documents. As will be further explained in section III about service features this site has some problems, however, the benefit to a metadata approach to a site like this is that it offers a lot of materials including but not limited to correspondences, treaties, documents, photographs, maps, diaries, opinion polls, biographies, glossaries of definitions, CD ROMS, and films all about one general topic, nuclear issues.

III. Service Features

NuclearPathways has a great amount of content, but it metaphorically 'drops the ball', when it comes to service. Compared with the individual sites that it utilizes, one would assume that their navigational features would be good quality, but they would be mistaken. This site offers a rigid, browsing heavy way of finding information that appears horribly inefficient. Nowhere on the site, did I see any mention of anticipatory maintenance plans, but they did have an area where you could email the site creators with issues that were either about: technical, content, or general concerns. The first hint to any visitor on this site that there may be search difficulties forthcoming is the fact that you are given only one simple text box with the option of search, and a hyperlink below it entitled browse. Unlike some other libraries I have seen, there was no way of modifying your search, and any additional search boxes for engines such as Google or Yahoo were not present. Also on their home page, the hyperlink at the bottom entitled site map, gives you the message that they are sorry, and that you must have used an incorrect URL or the link was outdated.(NuclearPathways.org, 2005-2011)

Attempting to perform a basic search was a fruitless effort. Practically every term or phrase that I input was promptly sent back to me as yielding no results. As a result of this, I was forced to utilize the browse feature. It provides the visitor with an alphabetized list of various subjects, names, and terms that one can click on and be given multiple results. It was here that I also began to realize why the search feature was so dysfunctional. The only terms the search recognizes are those spelled or worded exactly as they appear on the browse list. Suffixing does not exist here.(Lesk , 2005, p.48) So for example, they have 'blast effects' as a browsing category, if you perform a search for 'blast effect', in the singular, it will yield zero results. Even partial phrases do not work unless they are completely the same as those on the browse feature. For example, they have 'Russian Nuclear Weapons' listed. If you typed just the word Russian it yields no results. Therefore, because the search is so intricately connected with the browse function, for the casual user it would yield 'no results found' more often than not. Furthermore, all searches go in one direction, and attempting to backtrack to the browse list if you want to modify you selection choice becomes complicated. Many digital libraries I have viewed either keep the search box on each page, or else there is a link to get back to where you started. NuclearPathways.org does not do this so if you want to locate a different browsing term, or

see different results you are forced to backtrack using the "Back" feature on your web browser. There was a link at the bottom of the page that would bring you to the search feature on the site's title page, but as previously described you would still have to click again to get to the browse feature.

Needless to say, this failure to provide a quality method of locating items comes as a real disappointment, especially because someone can go to any one of the three sites (Chemcases.com is an exception) that makes up NuclearPathways and find search features that far exceed anything found on the compiled site. The *ALSOS digital library for nuclear issues* is a good example. If one goes to their individual homepage, the first thing they encounter is an advanced search feature. This provides them with three textboxes where they can input a keyword, a title, or a document creator. It also allows for items to be sorted by the type of media, genre, educational level, discipline, and content time period.(Settle, November 2010) This type of method allows for options. People can try various topic ideas, and attempt to narrow down their results instead of blindly selecting the categories as Nuclearpathways.org assigns them. Likewise, AtomicArchive.com had a much more complex search feature even if it appeared to be as simplistic. AtomicArchive has a single search text box, but unlike the NuclearPathway's, it functioned the same as a standard Internet search engine. For example, I typed in the phrase, "British and Canadian", and it was able to locate several items one of which was the 1945 document "Atomic Energy for Military Purposes" by Henry De Wolf Smith, that only used my phrase within the actual text of the document.

My only assumption is that the navigation scheme for http://www.nuclearpathways.org was in some way organized to be like http://www.nuclearfiles.org. In a somewhat similar fashion this site depends heavily on a browsing scheme instead of a searching scheme for navigation. However, Nuclear-Files approach differs significantly. As previously explained NuclearPathways alphabetizes all of its browse topics, and each one contains further results. NuclearFiles utilizes five categories, each of which provide results, and those results provide further ways to narrow your findings. For someone who is choosing to browse this latter approach seems much more effective, because it has a hierarchical structure where one can chart out how they found what they were researching even if it is somewhat topical.

For those who are interest, http://www.Chemcases.com at this point in time is simply dysfunctional, and while items at times still link correctly it is in need of serious maintenance. If one goes to their title page, through a generic web search, things seem fine. However, if you go to the section of Chemcases.com that addresses nuclear issues via the link on http://www.nuclearpathways.org you will see that a majority of the tabs, links and selections are outdated and do not take you to their intended destinations.

The navigational structure on http://www.nuclearpathways.org will probably only become worse with time. In a March 2005 article by Lee Li. Zia entitled *The NSF National Science, Technology, Engineering, and Mathematics Education Digital Library (NSDL) Program: New Projects from Fiscal Year 2004* it describes the formation of the digital library, and it predicts the future expansion of ten additional collections.(March 2005) If navigation is difficult at the present time, additional collections may only exacerbate the problem.

IV. Technologies

As section III of this review explained, the search functions on http://www.nuclearpathways.org need improvement, but I the overall interface could use some work. One small detail that was extremely misleading was the way it displays results. Each list of results also included a list entitled "See Also" with other browse-able categories. So for example, you may search for the 'K-25 plant located in Tennessee'. It will tell you that you have seven results, however, what it doesn't specify is that three of them are actual sources, and the other four are related topics that might contain useful material or they might not. In looking at the software behind each site, there doesn't seem to be any reason for the service discrepancies between the four basic sites, and NuclearPathways. NuclearFiles.org operates using *Media Temple*, AtomicArchive.com uses *AJ software and multimedia*, (which http://www.nuclearpathways.org also uses) and ALSOS does not describe what specific software they use besides for the fact that it is licensed with *Creative Commons*. In general, interoperability does not seem as though it would be of a big concern because when one looks at the three organizations at least one of them already uses the same software as the combined site.

What concerns me about all these sites, whether you are looking at the pieces or the whole body that is http://www.nuclearpathways.org, is the hardware. All of the sites were MAC and PC compatible, but I question how the documents are being input. While I can't be definitive about this, it seems as though almost all of the written documents were added using keyboard entry. Nowhere on any of the sites, did the documents appear as .pdf or any other type of document that would imply that they were scanned onto the site.(Williams & Sawyer, 2010, p.265) Instead they all looked to be neatly typed in the same font and size. Since two of the four founding sites were operated by Universities it is possible that there exists the manpower to retype all of these documents onto the site. From the user's perspective, however, I am somewhat confused by this. As historical documents, you would think that retyping them would create the added possibility that the documents you were viewing may have been altered. Yet, because they were all typed you don't have the concerns from a scanned copy where words may be illegible.

V. Comments

At times, I feel that this review may have appeared to be unnecessarily harsh on the website http://www.nuclearpathways.org. Admittedly, I do see some serious flaws in their current system, but that is not to say that this digital library is useless. It does contain a wealth of information on nuclear issues. The amount of documents provided by these three (possibly four if you include Chemcases.com at one point) would most certainly be useful for students, educators, and the general public who want to know more about the topic of nuclear issues. They stated a target audience, and in my opinion they accomplish what they set out to achieve for that audience.

Meeting their goals, however, does not mean that they are left with no areas to improve upon. Navigation and the interface's layout in general need a lot of adjustments. Also I was left feeling as though out of the three main websites that comprised it, some were underutilized while others were overemphasized. Also from the perspective of the user the site simply seemed to lack character. Nuclear issues are not boring topics, yet browsing through this site just seemed dull in comparison to looking at the visual displays provided on any one of the smaller sites individually. I couldn't help, but think that perhaps that is why there was so few written reviews or comments about

http://www.nuclearpathways.org. In looking through databases and the Internet for reviews or comments, I was only able to locate one article that was about a quarter of a page in length from *Computers in Libraries* (Sept 2005) that stated "how four organizations had partnered together to create the Nuclear Pathways clearinghouse".(p 52)

Overall, I was not impressed with http://www.nuclearpathways.org. The sum of the pieces did not seem to equal the total. They placed a bunch of links to documents together in one central location, but the system is hampered by poor navigation, layout, and service strategies in general. I found myself much rather preferring the idea of picking one of the individual libraries that had partnered to make NuclearPathways, and simply using that instead of relying on the metadata approach that the combined site offers.

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