Ribbens, Eric, Hanson, Curtis. 2009. The Wired Herbarium #6: Herbarium Webpages: The LSU Herbarium. In The Vasculum (newsletter of the Society for Herbarium Curators), January 2009.

What makes a good herbarium webpage? Certainly a clean functional design, with an intuitive interface that is easy to navigate with good connections to the information being presented. Faster, of course, is better. Attention to maintaining links: broken links, missing images, and incomplete development are all major annoyances.

But the information content can vary substantially. At a minimum, a good herbarium webpage should clearly describe the herbarium: its location, holdings, curator and staff, how to contact it, etc. More detailed information about the collection is highly desirable: an interactive search engine to explore the herbarium database is great. Beyond these, some herbarium webpages present a great deal of additional information about the distribution, ecology, or taxonomy of some species.

Probably one issue that many webpages fail to consider is how to handle work-in-progress. Too many websites merely display annoying "in progress" messages, sometimes years old, with no information about what is missing or when it will be provided. I personally have found a major annoyance when searching incomplete databases is the uncertainty of knowing whether the collection holds the species I am interested in but doesn't have it computerized yet, or whether it lacks the species completely.

So what makes a good herbarium webpage? I think a good way to begin is to explore a good webpage. Curtis Hansen of Auburn University has agreed to review the LSU webpage, a good (but not perfect) herbarium webpage. For example, one thing I noticed is that they use cookies, with no apparent notification to users. I detest cookies, since they can insidiously slow performance, track my online habits, and generally seem to be like a snoopy elderly neighbor. Anyhow, here are Curtis Hansen's comments:

LSU Herbarium Website

My first impressions of the Louisiana State University Herbarium website (http://www.herbarium.lsu.edu): classy, clean, well-organized, user friendly. From the main portal page you can either navigate directly to the Specimen and Image database (more later) or enter the main herbarium website. When you enter the website you will find a set of selections on the left-hand menu, a subset of menus in the main panel below the posted mission statement of the herbarium and a small but beautiful photo of the lighted Life Sciences Annex, which houses the 6000 square foot herbarium complex.

The General Information tab leads to the standard information about the herbarium: operating hours and location, including written directions, parking information and maps. Information about loan requests, exchanges and identification services can also be found on this page.

The Staff and Facilities tab contains contact information for each staff member including links to personal web pages. There are four nice photos of the herbarium; two of herbarium cabinets, one of the plant drier, and one of an ultra-freezer. The history of the herbarium is a nice

read, partly because of its brevity. It is about the main characters and events in the past and present that have made the LSU Herbarium what it is today. You can go to the Friends of the Herbarium page from this menu or link directly to it by the tab in the main left-hand menu. This page has information regarding volunteering and donating to the herbarium. They have made it very easy to join and contact staff with the online form which is available for folks to fill out and send electronically.

I found the Links and Resources page to be surprisingly complete without swamping you with too many links to wade through. They have wisely restricted their links to some of the best and most well known museums, gardens, herbaria and other plant related websites—many which are routinely used by professionals and public alike. I tested several of the links and they all seemed current and took me where I expected to go without any problems.

You can download a Microsoft Excel© file containing the checklist of Louisiana plants (with or without synonyms) at the Checklists tab on the main menu. Accepted plant names and synonyms in this list are based largely on what is accepted and excluded by Flora of North America and the Atlas of the Flora of Louisiana. A link to the explanation and a key of their scoring system is given. In addition to a bibliography of floras for the Louisiana flora, there are checklists of the plants of Calcasieu Parish and the wood decaying fungi of the Gulf South. These checklists are not downloads but are linked directly to online windows that pop up after selection. The Literature Search page is currently unavailable and you are invited to check back another time.

What I really liked about the LSU Herbarium website is the interactive specimen database with robust browsing and searching options. Selecting the Specimen Database or Image Gallery button takes you to the LSU Herbarium Specimen System webpage, a project supported by the National Science Foundation and the State of Louisiana. I found the ease and flexibility of navigating the specimen database very refreshing. Under the Browsing Taxonomy tab you can look for plants by categories (dicot, monocot, lichen, moss, lycopod, etc.), by Scientific Name or Scientific Family. Navigating through the browsing options in the left-hand panel is intuitive and simple by clicking on the expandable and collapsible folder icons. Once a category is selected a second tree of folder icons opens listing either plant families or an alphabetical list of scientific names. Putting a check mark in the box next to your desired selection will show the query results in the results window with each line representing a unique specimen record. You can put a check mark in several boxes at one time and have all the results show up in the results window. But you must remember to uncheck a box in order to remove that group of data from the window. Searching for specific records under the Search Specimen DB tab is likewise simple and is accomplished by entering your search criteria in the respective fields.

Sorting any of the results fields in ascending or descending order is done by simply clicking on the field heading at the top of each column in the results window. For example, you can sort by barcode (LSU), family, genus, species, state, county, collector, etc. You can perform complex sorts that organize two or more columns of data sequentially. For example, if you click on the State column and drag across to highlight the County column also, the program will sort data alphabetically by state then by county, a nice feature if you're quickly trying to locate certain county information within particular states. If you double click on an individual record a window pops up giving the options of viewing individual label details, a photograph of the specimen, a map of the collection location, and comments, if any. Not all specimens have a photo, map or comments associated with them. There are small icons next to each record in the results window

to indicate if the record has a photograph or map associated with it. Occasionally, the detailed specimen data would not load for me and I had to close the window and retry. I like the dynamic specimen photographs and maps. You have the ability to zoom in and out on the image to look closer at morphological characters on the herbarium sheet. Likewise, the dynamic Google Map© associated with the collection location has the ability to zoom in and out and view satellite or hybrid maps of the location. There are options that allow the data results to be down loaded as a MS Excel© file or e-mailed, although the e-mail option seemed to be off line currently. Individual specimen data can also be printed directly from the pop up window.

Searching in the Images database opens an alphabetical tree on the left-hand side from which you can choose a family, genus then species. These photos are not of herbarium sheets but of the plants in the field. Many are high quality and are able to be viewed at higher resolution by double-clicking on the thumbnail image. Most of the images loaded for me, however there were several with broken links or that would not load.

The Gazeteers/Checklists feature is a neat tool to quickly give you a county or state checklist of plants held by the LSU Herbarium. This option is no doubt most helpful when creating parish checklists for Louisiana but it can also give useful distributional information about LSU's holdings from other states as well. The Download Data and Email Data buttons were not active.

Finally, the Fact Sheets tab provides an alphabetical listing of plant species linked to a detailed page of information. Detailed descriptions of the plant along with geographic distributions, maps, other resources, references and nomenclature are all listed. Additionally, I was impressed with the number of detailed photos provided showing close-ups of flowers, stems, hairs, seeds, etc.—usually 16-23 photographs for each fact sheet. Currently there are only about 80 specimens with fact sheets, but the information potential is huge as new plant fact sheets are added to the list.

One thing that I didn't see which would be a nice addition is a "reset" or "universal clear" option to clear all check marks from selected boxes in the folder tree. Once a box is checked it must be unchecked individually in order to remove the data from the results window. Simply collapsing the folder tree does not remove the check mark and it was a bit tedious going back to uncheck boxes after a complex search.

That being said, I would strongly encourage everyone to spend some time exploring this website, especially the dynamic specimen database. You'll find that with a few clicks you can access a wealth of plant information. With only a few minor hitches here and there I found that the LSU Herbarium website lived up to my first impressions of being well organized, easy to use and classy—a great place to spend some time browsing around.