

Online Exhibit Content Conversion for the History of Medicine Division

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Abstract

Background

The History of Medicine Division needed a solution for outdated exhibit websites, which had web features reflecting past internet trends. Additionally, the websites lacked consistent formatting that gave users a variety of experiences with the exhibit content. The project goal was to convert small web exhibits into blog posts and create a standardized template for larger web exhibits.

Procedures

The Associate Fellow learned how to format text and images on WordPress, worked with the Project Sponsor and a web developer to design a new template for online exhibits, and created documentation to support future steps in the web content conversion process.

Outcomes

The Associate Fellow wrote two blog posts using material from small online exhibits and compiled numerous documents to facilitate data entry of exhibit information into the new online website template. Documents included an image gallery script, a narrative script, and a file of high-resolution images downloaded from NLM Digital Collections.

Discussion

The project taught the Associate Fellow how to communicate and collaborate with a web developer and how to structure scripts for information input into websites. Additionally, the Fellow learned the importance of clear documentation for aesthetic elements of a blog to ensure standardization of visual style.

Recommendations

The two recommendations that came out of this project consist of: 1) Increase the number of people at NLM who know the formatting specifications for the *Circulating Now* blog and 2) Monitor software updates from WordPress.

Background

The History of Medicine Division (HMD) at the National Library of Medicine has created a variety of exhibits highlighting items and themes within the collection. Along with a physical exhibit, HMD staff often create an online exhibit to share the experience with those unable to view the exhibit in person and to preserve the message of the exhibit long after another takes its place in the HMD gallery cases.

Of these online exhibits, about sixty are not managed by the HMD Exhibitions Program and fall under the responsibility of Beth Mullen, Manager of Web and Social Media for HMD. During the late 1990s through the present (2019), a variety of HMD staff created these online exhibits resulting in different web page formats built to accommodate the web browsing experience of their day. The online exhibits have a variety of web page layouts, site navigation, and inconsistency in image captioning. To standardize the mix of online exhibit experiences, Beth initiated the process of reviewing past online exhibits and determining how to address the inconsistencies.

Beth identified small online exhibits, those with exhibit information contained within a few web pages, as suitable for consolidation into a blog post with the original website archived. The NLM History of Medicine blog, *Circulating Now*, has used WordPress to display articles about items in the collection since 2013. WordPress is a content management system that provides customizable templates for hosting blogs. *Circulating Now* has a customized layout and color scheme and articles typically contain about 700 words, a few images, and a number of links to NLM content and external web pages. Converting some of the old online exhibits to *Circulating Now* posts, will highlight the content for current patrons and provide a new format to experience the topic for lifelong patrons.

For exhibits with larger amounts of content, Beth began the process of developing a new template that would improve the consistency of experience when viewing HMD online exhibits. The options of creating a *Circulating Now* blog post or using the new web template will satisfy

about two thirds of the sixty online exhibitions under Beth's purview. Another solution is needed for the remaining third of exhibits.

The goal of the Associate Fellow project was to convert smaller exhibits to blog posts and assist with the design and implementation of a new online exhibit template by developing materials to support the various phases of website creation.

Procedures

To convert small online exhibits into blog posts, Cecelia Vetter collected text from the original online exhibit pages and summarized it into one cohesive narrative and added links to NLM content and external web pages. The text was then put into a WordPress template specially designed for the HMD blog, *Circulating Now*. Images were selected from the original exhibit, edited to fit the standard image sizes and resolution used by HMD on WordPress, and then added throughout the text. These blog versions of the online exhibits do not act as replacements for the original web versions, but rather allow HMD to resurface the content on *Circulating Now* and provide readers with a link to the archived version of the original web exhibit. Cecelia also updated the *Circulating Now Style Guide* on the HMD Staff Wiki to match recent updates to WordPress and to clarify the formatting requirements used by HMD to standardize image size and resolution (see Appendix).

For the first step in creating a new online exhibit template, Cecelia and Beth met with Katie Chan, a Librarian in the NLM Public Services Division, to get a better idea of how users interact with the current online exhibits. The data Katie provided shows that people often download images from the exhibit sites, demonstrating a need for clearly labeled link to digital collections, where users can easily download high resolution scans of HMD material. The page visits also show which websites receive the most web traffic, allowing Beth to prioritize high traffic online exhibits when adding them to the new template.

Throughout the project Cecelia and Beth met to discuss website functionality and design for the new template for online exhibits, creating a number of wireframes for Alla Vysokolova, the web designer. Through the wireframes, Cecelia and Beth conveyed their design ideas to Alla, who then provided mock ups of web pages and explain possible functionalities for different elements of the web pages. The team worked on a continuous feedback loop, with Alla creating mockups and Cecelia and Beth providing feedback. As Cecelia finishes her Associate Fellowship year, the feedback process between Beth and Alla will continue, determining each aspect of the new exhibit web template.

Beth selected the exhibit *The Horse, a Mirror of Man: Parallels in Early Human and Horse Medicine* based on its large number of images from the NLM collection and its relatively standard exhibit layout (including multiple pages of content and images with a full image gallery page at the end) to serve as the demo exhibit for the web page mockups. Along with the standard pieces of a website Alla created for the template, she also needed to design elements specific to the *Horse Medicine* exhibit, such as selecting a color palette and creating a thematic

banner for the top of the exhibit page. These design elements are variable to provide a distinct look and feel for each exhibition topic. Cecelia and Beth provided feedback to Alla on these design elements in the same type of feedback loop used for general template features.

As the structure of the exhibit template began to solidify Cecelia started writing documentation to assist in the process of placing *The Horse, a Mirror of Man* specific information into the template. Documents included: an Excel document with basic bibliographic information about each of the books mentioned in the exhibit, a layout of the new thematic section titles within the exhibit, and scripts to guide data entry for the image gallery and for the general content of the exhibit page (see Appendix and Supplementary File). Cecelia collected information from NLM Digital Collections, bibliographic records in the NLM catalog, and the code from the original online exhibit for each image and organized it all in a table to create the image gallery script. Additionally, Cecelia assigned MedlinePlus Health Topics to images when images aligned with specific topics. The script created for the general content of the exhibit, called the narrative script, contains the headings, subheadings, text, and images collected from the original 2007 web exhibit in a table to direct how they will populate the main exhibit page in the new template (See Appendix). When the template is completed, this script will allow person to easily enter image data into the Horse exhibit.

Outcomes

Over the course of the project Cecelia created blog posts for two exhibits, *We Were Here First* exploring the history of the land the NLM sits upon and *Hooke's Books: Books that Influenced or were Influenced by Robert Hooke's Micrographia* highlighting the copies of Robert Hooke's *Micrographia* in the HMD collections. Cecelia wrote both blog posts as evergreen content, allowing them to be posted at any time within the *Circulating Now* calendar. The blogs do not yet have publishing dates, but links to the archived original web exhibits can be found in the Appendix.

For the process of designing the new web exhibit template, Cecelia created a number of documents, including: a reclassification of exhibit themes, bibliographic spreadsheet for the demo exhibit, and script for entering image data into the new template (see Appendix and Spreadsheet). These documents provide a structure for adding exhibit specific information to the new web template. Completion of the web template will occur after Cecelia has finished her Associate Fellowship year and these documents will allow HMD staff to quickly input the *Horse Medicine* exhibit information into the template. The documentation created by Cecelia also provides a format for preparing the needed documentation for other exhibits that will be inserted into the new web template. Additionally, working closely with the *The Horse, a Mirror of Man* exhibit, Cecelia became extremely familiar with the content and could correct errors in the image metadata, such as incorrect alt text in the original web exhibit.

The most work intensive documentation created for this project was the image gallery script (Supplementary File). After a few iterations, determining what data points needed to be captured, the image gallery script includes a thumbnail of each image, the file name, the alt tag, title and author, date, a short context phrase, image caption from the original online exhibit (when applicable), the NLM unique ID, a MedlinePlus topic, and a link to NLM Digital Collections. For many images, these data fields do not exist, but having a “N/A” marking in a box is still useful because it signifies that all relevant information for the image has been captured. Also, a “N/A” in the NLM Digital Collections column notifies HMD staff that a book featured in a web exhibit has not been digitized yet and may push the book forward in the digitization queue.

When figuring out the layout of the new online exhibit template, Beth and Cecelia wanted to make sure that when looking at an image located on the page of a book, users could easily find information on the book. It was decided to create a link on every image web page to a modal window that would pop out above the image web page and provide bibliographic information about the book and links to the NLM Catalog and NLM Digital Collections where applicable. To compile the information needed for the modal widow, Cecelia created a book script, that along with basic title and caption information, also included a list of filenames for illustrations in the image gallery from a specific book. This way, during the data entry process of creating the new website, the images and their corresponding book modal windows can easily be linked.

With an image gallery script, a narrative script supports the conversion of a website into a new template. The narrative script (see Appendix) lays out the exhibit sections, text, and images in a table to facilitate content conversion. Along with the text and images from the original exhibit, Cecelia also inserted two links to *Circulating Now* blog posts into the main exhibit page to direct readers to this resource and other horse related content in the HMD collection.

Discussion

While writing the blog posts, I experimented with WordPress’ new content manager format called “Block Editor” and compared it to the traditional WordPress “Classic Editor”. Beth was unfamiliar with the “Block Editor” and by testing out the new editor, I determined that the format, still under development by WordPress, lacked the required functionality to meet the needs of HMD’s *Circulating Now* blog. I then updated the HMD Staff Wiki to include directions on how to adjust WordPress setting to use the “Classic Editor” and add more instructions on how to format and add images to blog posts (see Appendix). Currently Beth formats most *Circulating Now* posts, but these Wiki updates will allow staff other than Beth, such as students or guest post writers, to format their own blog post.

Through writing the two blog posts and formatting them on WordPress, I gained experience preparing images for websites and learned about the importance of standardizing image size and resolution. I also learned the importance of establishing a file naming structure for online images early in the blog post creation process so that files have consistent naming throughout. Plus, an image file name can impact search engine optimization, emphasizing the importance of

having descriptive file names. Additionally, from an NLM internal perspective, clear file names including the NLM Unique Identifier help HMD staff locate images in the collection and can assist in reference requests and future web content conversion.

One of the most challenging things to learn during this project was how to write a script for online data input and specifically how to create a narrative script for an exhibit webpage. When tasked with creating the script for the image gallery (Supplementary File), I understood that I needed to organize images and their corresponding captions together, but Beth taught me that images have numerous data points required for proper conversion into a new web template. Additional data elements included locating the link to a book illustration's exact page in NLM Digital Collections, writing a short context phrase for all images in the gallery, and selecting MedlinePlus topics to associate with specific images. I found this work more challenging and more rewarding because the information I sought often required multiple levels of research, such as determining if a book was digitized and then searching NLM Digital Collections for the specific page number of an illustration.

This project taught me a lot about how content conversion of an online exhibit differs greatly from the creation of a physical exhibit. In a rare book physical exhibit, an exhibit's curatorial team manages most stages of the exhibit including researching, designing, and installation. For an online exhibit, a curatorial team may not possess the advanced web skills needed for exhibit template design and the installation of the information. I had come from a prior institution where I assisted with the logistics of physical rare book exhibits, but transitioning to this project involving online exhibits taught me the importance of working with experts in computer science and web design. Some of the skills I learned included website design jargon, such as wireframes, which are website outlines that focus on format and user experience by lacking content (text and images). Alla provided a great first experience of working with a web designer, as she created multiple iterations of the exhibit template, welcomed feedback from me and Beth, and patiently explained that certain visions we had for the template were not technically possible online. I look forward to using the website communication skills I developed when working with web designers in the future.

Recommendations

Recommendation 1:

Increase the number of people at NLM and/or within HMD who know how to format blog posts for *Circulating Now*. In updating the *Circulating Now Style Guide* on the staff Wiki, Cecelia realized that Beth held most of the knowledge of how to format images and text for *Circulating Now* posts. With more formatting specifications now on the *Circulating Now Style Guide*, Beth can delegate the task of formatting blog posts to interns and internal guest authors (such as the Associate Fellows who wrote a blog post for the 2018 winter holiday season).

Recommendation 2:

Monitor WordPress software updates as they continue to build the “Block Editor”. In investigating the new WordPress “Block Editor”, Cecelia found that online many people complained that the WordPress “Block Editor” was not up to the standards of the original “Classic Editor”. It appears that WordPress is continuously developing and plans to add more features to the “Block Editor” and possibly they could sunset the “Classic Editor”. Since *Circulating Now* currently relies on formatting specific to the “Classic Editor”, it is vital for HMD staff to monitor WordPress updates and plan for the fact that the “Classic Editor” may one day become obsolete.

Next Steps

As the new online exhibit template gets closer to completion, HMD staff can start preparing other online exhibits for content conversion. This includes creating a narrative script for the main web page(s), a gallery script if the exhibit has an image gallery and compiling a folder of high-resolution images for insertion into the exhibit template.

Acknowledgements

I would like to thank Beth Mullen for her willingness to expand a proposed fall project into something that could sustain me for the second half of my fellowship year. From Beth I learned a lot about web design for exhibits and am honored that she sought my opinion on many visual and user experience elements of the new web exhibit template

Thank you to Alla Vysokolova for her talent as a web designer and Katie Chan for her insight on how users experience current HMD online exhibits.

A warm thank you to Dr. Kathel Dunn, Associate Fellowship Project Coordinator, for her continued support and belief that I could turn a small project into a large learning experience.

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Appendix

Archived Websites

Original online exhibits that were converted to *Circulating Now* blog posts, archived in the Internet Archive Way Back Machine

We Were Here First

<https://wayback.archive-it.org/org-350/20170216154919/https://www.nlm.nih.gov/exhibition/wewereherefirst/>

Hooke's Books: Books that Influenced or were Influenced by Robert Hooke's Micrographia

<https://web.archive.org/web/20171005182617/https://www.nlm.nih.gov/exhibition/hooke/index.html>

Circulating Now Style Guide Updates

Image Files

Format - .jpeg

Size - 90 dpi and no more than either 1200 pixels high or 1600 pixels wide (whichever is larger).

Compression – .jpegs should be compressed using a tool like <https://www.jpeg.io/> or <https://kraken.io/web-interface>. (WordPress will automatically resize them based on your layout selections.)

Feature image - 900 pixels wide by 400 pixels high. The filename must include _feature after the name.
ex: Micrographia_feature.jpg

Image name – image file names should include a keyword useful for searching and if possible a unique identifier, preferably the NLM Unique ID for Library collections, that will help locate the original source if needed in the future. Non NLM collection items should include accurate and preferably linked credits and whatever ID number the source uses. Exhibition Program numbers are acceptable for non-NLM collections, but NLM collections should use the NLM number . The feature image filename must include _feature after the name.

Loading Images

Add an Image - the image must first be uploaded into the WordPress Media Library. WordPress allows drag and drop. You can add multiple files at a time.

Metadata - All metadata for images should be filled out first in the Media Library before adding the image to the post. Including the caption, alt tags, description, and/or title. Doing this in the Media Library ensures the metadata is associated with the image and not the post specifically. Text-heavy images should be transcribed in the description box of the image.

Captions – include Title, date (without a period) unless there is a curatorial caption.

Credit line - should be on a new line, in italics. Either the title or the credit should be linked to the item record or source.

NLM collection items –National Library of Medicine #NLMUID link the whole phrase either to NLM Digital Collections or the NLM Catalog. First choice is linking to Digital Collections, but if the item is not digitized, link to the NLM Catalog record <https://www.ncbi.nlm.nih.gov/nlmcatalog/#####> (NLM ID at the end of the link) See link section for instruction on building correct links.

- Note – a link must be created after an image has been inserted into a post

NLM Manuscripts citation format: National Library of Medicine, Emanuel Libman Papers. MS C 406, Box 3, Folder 13. (link “Emanuel Libman Papers” to the finding aid if there is one, otherwise to the NLM Catalog.)

Inserting Image into a Post - put your cursor in the text box wherever you want the image to be inserted and then click "Add Media", selecting your desired image. Make sure the image links to the “Media File” or add a custom link if image is from an external source or exhibition program website

Image size – for an individual image, select size medium when embedding into text and size large for a solo image in between paragraphs.

Image layout – for individual images embedded into the text, alternate the alignment of the images between the left and right if there is more than one image in a post

- Note the image import into a post function has a funny problem of not keeping titles, so make sure to click on the photo --> edit --> advanced options --> fill in the title

Border – if an image has a white background, use a 1 pixel black border to visually differentiate the image from the post background

Gallery – when inserting multiple images, select “Create Gallery” on the left side of the pop-up after selecting “Add Media”. Select 2-4 images and then edit the gallery settings on the left side to fit your post needs

Bibliographic Spreadsheet

Spreadsheet of bibliographic information about each of the books in *The Horse: A Mirror of Man*
The spreadsheet was a major reference when creating the Gallery Script (Supplementary File)

Title	Author	UID	In Digital Collections?	Dig Coll Link	Link to Bib Record
The Compleat Horseman	Jacques de Solleysel	2416067R	Image, not book	https://collections	https://locatorplus.gov/cgi-k
Hippiatria	Laurentius Rusius	2283059R	No		https://locatorplus.gov/cgi-k
Fasiculo de medicina	Johannes de Ketham	101146662x	Yes	https://collections	https://locatorplus.gov/cgi-k
Obras de albeyteria...	Martin Arredondo	2438019R	No		https://locatorplus.gov/cgi-k
Opera di Mescalzia	Filippo Scacco da Tagliacozzo	2284045R	No		https://locatorplus.gov/cgi-k
Trattato Vtile...	Giovanni Battista Ferraro	2343051R	No		https://locatorplus.gov/cgi-k
Feldtbuch der Wundartzni	Hans von Gersdorff	2246021R	Yes	https://collections	https://locatorplus.gov/cgi-k
Nuova et vtilissima pratti	Cintio d'Amato	2302032R	No		https://locatorplus.gov/cgi-k
De Humana Physiognomo	Giambattista della Porta	2276042R	No	http://resource.nli	https://locatorplus.gov/cgi-k
De Motu Animalium	Giovanni Borelli	2315002R	No		https://locatorplus.gov/cgi-k
La Mascalcia o sia...	Carlo Brugnone	2457049R	No		https://locatorplus.gov/cgi-k
The Anatomy of an horse	Andrew Snape	2416056R	No		https://locatorplus.gov/cgi-k
Anatomia del Cavallo	Carlo Ruini	2407020R	Yes	https://collections	https://locatorplus.gov/cgi-k
De Humani Corporis Fabri	Andreas Vesalius	2295005R	Yes	https://collections	https://locatorplus.gov/cgi-k
Ten Minutes Advice to Eve	Henry Bracken	2531036R	No		https://locatorplus.gov/cgi-k
A treatise upon the true s	Etienne-Guillaume La Fosse	2495052R	No		https://locatorplus.gov/cgi-k
De Formato Foetu	Adriaan Van Spiegel & Giulio Ca	2417033R	Yes	https://collections	https://locatorplus.gov/cgi-k
Hippiatica	Apsyrtos, et al.	2251052R	No		https://locatorplus.gov/cgi-k

Narrative Script

Narrative Script

The Horse: A mirror of Man: Parallels in Early Human and Horse Medicine

Section Title	Subsection Title	Text	Images
Hippiatrica	(none)	<p>The horse has been one of the most important animals throughout human history, and healing horses has had an important place in veterinary and medical literature. Theories about equine physiology and health often mirrored theories about humans, and the literature of both was inherently linked. Bloodletting, astrology, and ancient texts were used by both physicians and veterinarians to heal their patients, and many discoveries, including the circulation of the blood, developed in tandem.</p>	<ol style="list-style-type: none">1. NLM22830 59R_rusius _horses.jpg2. NLM22830 59R_rusius _title.jpg
Hippiatrica	The Hippiatrica: Ancient Texts	<p>Medieval and Renaissance veterinary medicine looked to ancient veterinary texts for its inspiration, just as physicians for human healing did. In the case of horses, veterinarians relied on a set of Classical and Byzantine Greek texts called the “Hippiatrica,” which was based strongly on ancient Greek texts by physicians like Hippocrates. The most noted of these veterinary authors was Apsyrtos, a military veterinarian in the service of the Roman Emperor Constantine I (306-337).</p>	<ol style="list-style-type: none">1. NLM22510 52R_hippia trica- title.jpg2. NLM22510 52R_hippia trica.jpg
Early Growth	(none)	<p>Physicians and veterinarians alike were interested in fetal development, and their research often went in tandem, sometimes appearing in the same or closely related works. In reverse order from other anatomical study, detailed images of equine fetal development appeared in publication earlier than did those for humans.</p>	<ol style="list-style-type: none">1. NLM24070 20R_ruini_ p189.jpg2. NLM24070 20R_ruini_ p191.jpg3. NLM24170 33R_Spieg el_p41.jpg
Health Charts	Disease Man and Disease Horse	<p>A common chart from medieval and Renaissance medical texts is “Disease Man,” wherein the diseases that can affect different parts of the body are laid out schematically around the body. Horse veterinarians adopted this chart, creating a “Disease Horse”; this chart often served as an index to the book, stating the page on which a particular horse disease could be found.</p>	<ol style="list-style-type: none">1. NLM10114 6662_deKe tham_disea se.jpg2. NLM23430 51R_ferrar o58-59.jpg

Section Title	Subsection Title	Text	Images
	Circulating Now	Wonderful Works on Horses https://circulatingnow.nlm.nih.gov/2015/09/10/wonderful-works-on-horses/	
Health Charts	Astrology and Health	An important ingredient to medieval and Renaissance human healing was Astrology, whereby the influence of the stars on the body was studied and carefully charted. Veterinarians did the same with horses. In these two charts, the signs of the zodiac are associated with different parts of the body: for example, don't treat the head while Aries is in the sky.	<ol style="list-style-type: none"> 1. NLM10114 6662_deKe tham_zodia c.jpg 2. NLM24380 19R_arred ondo_zodia c_horse.jpg
Health Charts	Bloodletting and the Four Humors	Central to early theories of human health was keeping the four humors (blood, bile, black bile, and phlegm) in balance, which involved the practice of bloodletting. Veterinarians followed suit and created bloodletting charts and systems which were similar to those created for human healing.	<ol style="list-style-type: none"> 1. NLM22460 21R_gersd orff_man.jpg 2. NLM22840 45R_scacch o_p37.jpg 3. NLM23020 32R_dAmat o_bloodlett ing1.jpg
	Circulating Now	Markham's Masterpiece of Horse Care https://circulatingnow.nlm.nih.gov/2013/10/22/markhams-masterpiece-of-horse-care/	
Studying Form	(none)	In the mid-1500s, sumptuous anatomical studies of human anatomy began appearing as an explosion of human dissection yielded a new perspective on the human form. Prompted by this, veterinarians published similar studies of the anatomy of the horse which focused not only on the science of the body, but used a great deal of art and aesthetics to convey its subject matter.	<ol style="list-style-type: none"> 1. NLM24070 20R_ruini_p243.jpg 2. NLM22950 05R Vesali us_venous.j pg 3. NLM24160 56R_snape _horse_ner ves.jpg 4. NLM22950 05R Vesali us_human muscle.jpg
Reading Bodies	Physiognomy: A Study in Character	Physiognomy was the science of predicting a person's character and health according to his physical appearance, especially the face and head. This ancient science dated back to Hippocrates in the fifth century BC, and	<ol style="list-style-type: none"> 1. NLM22760 42R_dellaPorta_horse.jpg

Section Title	Subsection Title	Text	Images
		Giambattista della Porta (1535?-1615) popularized it two thousand years later, comparing different human forms to animals. In this image, he shows that noble humans often resemble the noblest of animals, the horse.	
Reading Bodies	Physiology and the Science of Motion	Physiology, or the science of how the body functions, was studied in tandem by horse veterinarians and physicians, as each tested their hypotheses on patients. Giovanni Alfonso Borelli (1608-1679) was one of the first physicians to apply the concepts of physics and mechanics to the human and animal body, viewing the bones and joints as levers and the heart as a pump.	1. NLM23150_02R_borelli_mechanics_2.jpg