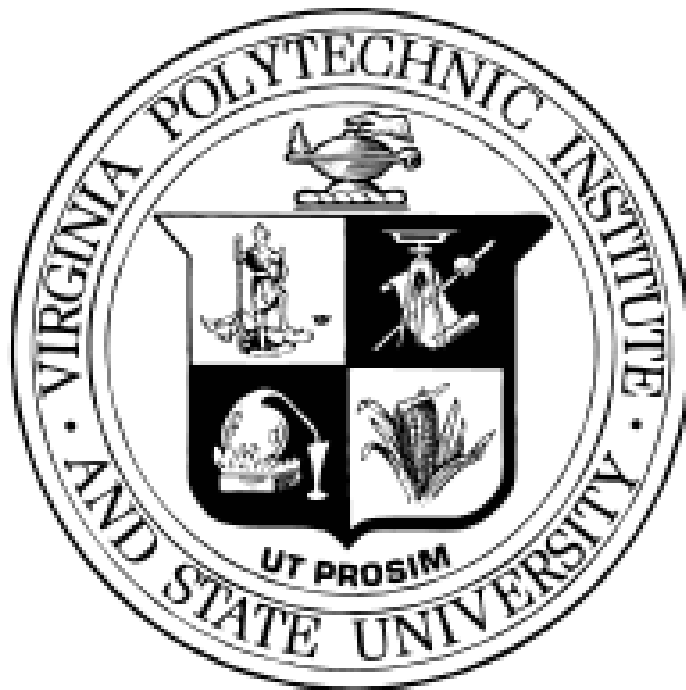


Chemistry Website Enhancements

Final Project Report



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1) Abstract

The client, Karen Iannacone, maintains three websites for Dr. Kingston. As her main duties are those of an administrative assistant and not a website admin, she cannot spend all her time trying to figure out all the ins and outs of the Ensemble Content Management System (Ensemble CMS) or troubleshooting migrating a website. Therefore, the main goal of this project is to improve the client's quality of life using Ensemble's features and teach the client how to implement them herself.

The Kingston website needed a site migration done and was not working due to the paid plugins and themes on WordPress not being automatically migrated. The bulk of this project is geared towards the Ensemble CMS for the features that the client will be needing instead of a basic tutorial of it as the client already has experience with the system. User testing was conducted on the Virginia Tech Center for Drug Discovery website as there was a major overhaul of the website. User testing is also conducted on the Virginia Drug Discovery Consortium website as it was already a complete website and did not need any changes.

User testing was done by creating tasks for the subjects in order to navigate the website. By assigning these tasks and getting feedback from the subjects, we can see what areas of the website need to be changed in order for users to more comfortably navigate through the website. Although the feedback given is means something is wrong, this does not necessarily mean that we can change what is needed. This is because of the inherent capabilities of the CMS do not allow us to do so in most cases or doing a complete overhaul is not feasible in the timeframe given.

Initially, I had taken more of a teaching role in this assignment as there was not much substance to this project. However, nearing the end of the semester, we needed to get the work finished so that I would have something tangible to show so the client and I decided to allow me to do all the repetitive work required while still writing up documentation for the client to use in the future. Most of this work was just creating webpages for the news stories as well as adding information to each of the biography pages for the faculty. In most of the biography pages, there are hyperlinks that lead to other websites. The client and I decided that these hyperlinks should create new pages whenever a redirection to a new site is made.

2) Introduction

The client, Karen Iannacone, requested help with the updating and maintenance of three websites that she maintains for the Chemistry department: Dr. Kingston's Virginia Tech website, the Virginia Tech Center for Drug Discovery website (VTCDD), and the Virginia Drug Discovery Consortium website (VaDDC). The client had a migration issue with the Kingston site, needed to update the VTCDD site, wanted to update the VaDDC site, and wanted some feedback as well as training on how to do these changes herself such that she would not need to ask for help in the future.

This was a very slow-moving project as most of my job was to guide the client, while the client would be doing most of the leg work required. This is because I am not there to do the job for her, but to teach her how to use several features of the Ensemble CMS and give her a second opinion on the visual layout of the website. However, later on we needed to do a lot of repetitive work on the VTCDD site so I asked for author permissions on the website so that I could do most of the work.

2.1) Goals and Objectives

The Kingston site was being hosted on Virginia Tech's main domain (www.vt.edu) using the WordPress CMS. According to Virginia Tech's new guidelines, any website on the main domain must use the Ensemble CMS or be moved to their cloud site for security purposes. As the client did not want to remake the website in Ensemble, she had chosen to migrate the site over to the cloud site. However, issues occurred using WordPress's site migration features and VT4Help (Virginia Tech's technical support) was unable to figure out the problem.

The VTCDD site is currently using an outdated version of Ensemble and needed to be updated to be Virginia Tech compliant. There were also a variety of visual issues with the website that needed to be fixed. Also, there was new content the client wanted to add to the site. The features that Ensemble provides are not well documented, so the client would also like some training and a guide on how to use the features that would benefit the website. As this website will undergo drastic changes, there will also be usability testing for this site.

The VaDDC was handed down to the client as a completed website using the WordPress CMS therefore there is not very much to do to it. The client had only requested help on the organization of information on the website. This will require some usability testing to see where changes could be made.

3) Kingston Website

The Kingston website was fully functioning on the old www.vt.edu domain and needed to be migrated to the cloud Virginia Tech domain. This website will also be retired later this year so the client did not ask for any major changes to be made to the site.

3.1) Kingston Process

I asked the client to show me what was happening when exporting from the old domain to the new domain. While looking at the admin user interfaces for both websites, I was able to determine that some plugins and themes were not being exported. This was because those plugins and themes were bought instead of the free features that WordPress provides with their built-in plugin and theme manager.

I researched how to migrate these paid features and was able to determine that we needed to go into the old website's file directory and copy the folders that contain the features and place them in the new website's file directory. However, I was unable to do this manually as Virginia Tech does not allow anyone but their technical support staff to have access to those directories, for security reasons. Therefore, we had to send a request to VT4Help to do this for us.

After the requests for VT4Help were completed, the required work for the Kingston website was concluded.

4) Virginia Tech Center for Drug Discovery

The VTCDD website needed to be updated to the current version of the Ensemble CMS to be Virginia Tech compliant. The client also wished to fix certain pages and add new features to the website to increase the viewer experience.

4.1) VTCDD Process

The first thing I did was create a copy of the website on the Ensemble CMS sandbox server. This allowed me to do what I wanted on the copy since it would interfere with the live version of the website.

On the sandbox, the website is automatically updated to the newest version of Ensemble so several pages, such as the home page, will break. The first thing I did was clean the home page up and remove any information that was unneeded. There were no major bugs that needed fixing. I also asked the client how she would like the homepage to look and researched the various things we could do with the format that the new version of Ensemble requires.

The Faculty page on the website needed to be updated as the client did not like how ununiform the page looked with the faculty list. The client was entering in the information for each faculty member individually but wanted to change it to the format another department uses. With the information she provided, I was able to figure out that we needed to use a List Component that Ensemble provides. This List Component would automatically create new entries for each faculty member when a new biography page is created. This gives a huge quality of life boost compared to doing what she did before. However, each biography page needed to be updated with profile pictures and a description, so I requested the client do so on the live website.

The client also wanted to add two news segments to the home page, similar to that of the www.vt.edu homepage. One will be specific to Virginia Tech Drug Discovery news and the other will be for general drug discovery news not pertaining to the university. Creating these also required List Segments but instead of biography pages we needed to use redirect pages to link the user to the correct news story.

Usability testing has not been done yet as the website is not completed.

4.2) Ensemble Developer's Manual

The user should familiarize themselves with the Ensemble documentation at <https://ensemble.cms.vt.edu/>.

The Ensemble CMS is built using the Adobe Experience Manager (AEM) as a backend with Ensemble as the front-end interface. This means that most of the features for AEM are hidden behind the Ensemble CMS interface and the AEM documentation does not reflect what can actually be done using Ensemble. The Ensemble documentation is outdated and is not very specific for all needs meaning that the user will need to figure it out themselves.

When working on a website, it is best to copy the whole website in to the sandbox that the Ensemble CMS provides. This makes it so that any mistakes made on the website will not be visible on the live version of the website, resulting in a safer way to edit the website. Note, it is possible to rollback to another version of your webpages but is not recommended as any new information will be lost.

One thing that is extremely helpful is to copy a page from another website (that uses the Ensemble CMS) that you want to take a feature from and place it in the sandbox. Now the user can look at in the component details, in order to replicate them.

4.3) Ensemble User's Manual

4.3.1) Copying Website/Page to Sandbox

When on the homepage, click on All Sites to see the list of sites that are using Ensemble

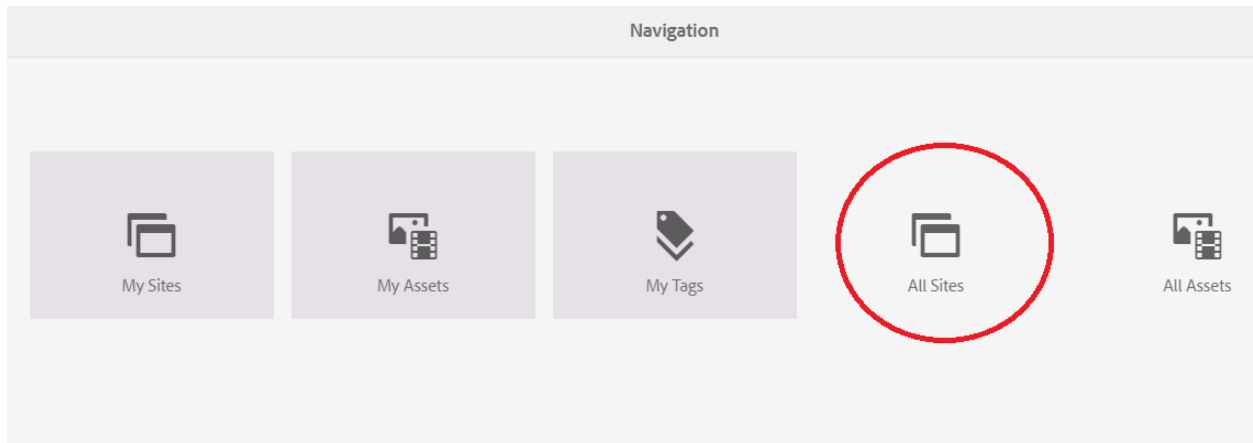


Figure 1. Viewing all the websites in Ensemble

Navigate to the website/page you want to copy and click on the image as indicated with the arrow.

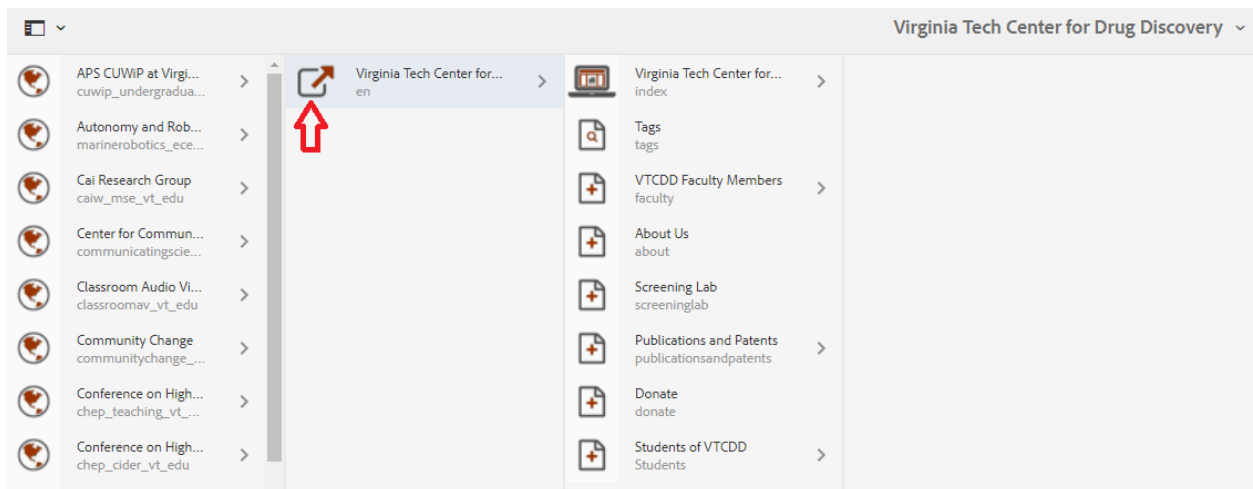


Figure 2. Navigating to the Virginia Tech Center for Drug Discovery website

Doing so will give you some options at the top of your browser that you can use. Click copy. This copies the website/page.

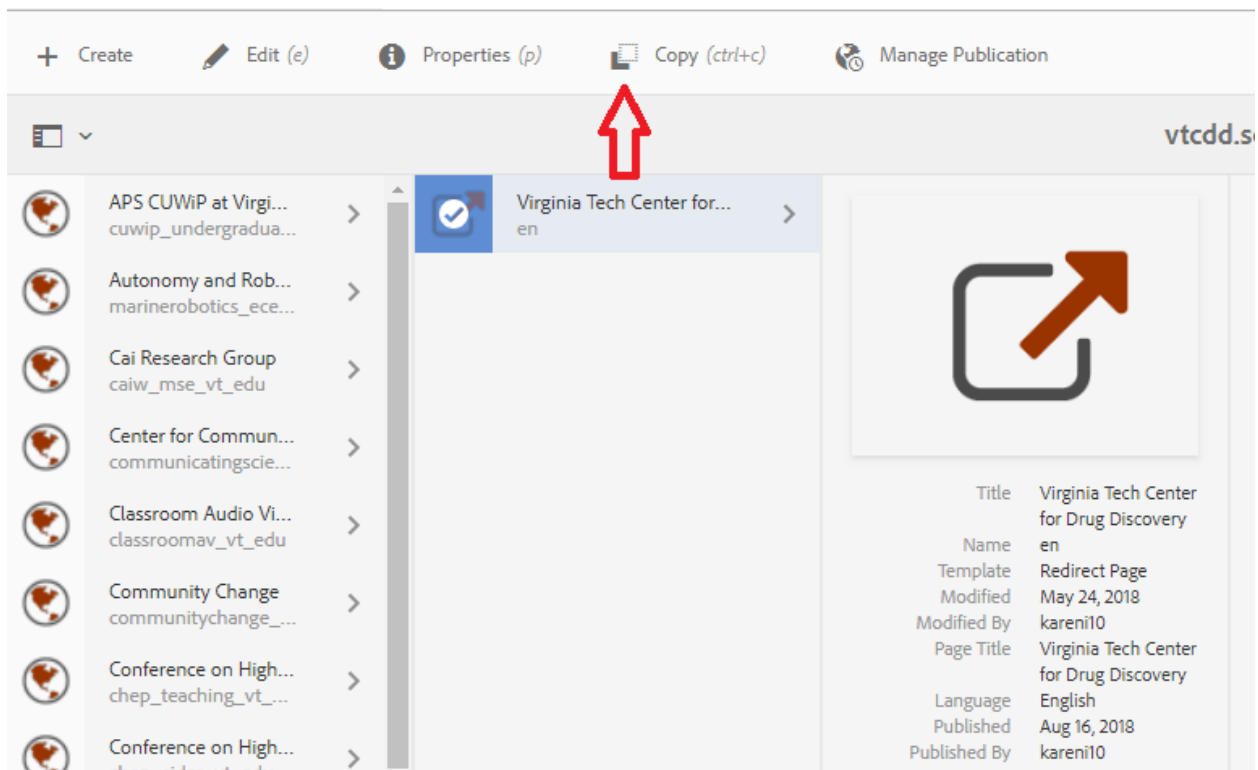


Figure 3. Copying a website

Navigate back to the home screen by clicking the word “Ensemble” in the top left corner and then click My Sites.

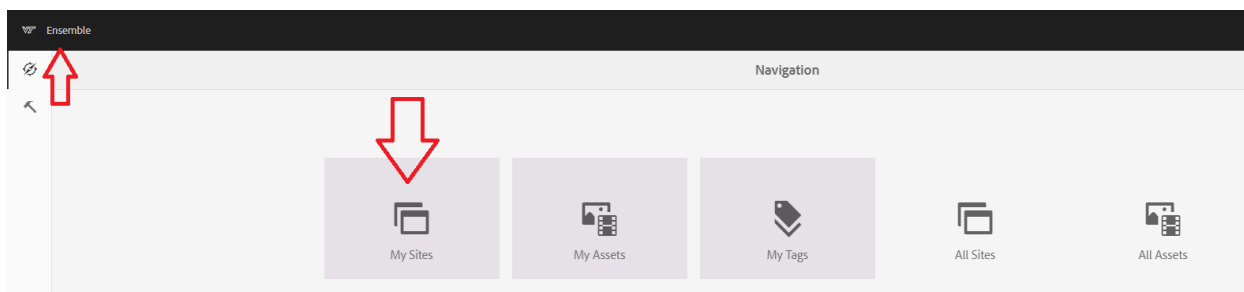


Figure 4. Navigating to the home screen

Navigate to the Sandbox and click “CMS Sandbox”, not the icon. This will now give you the option to paste into that directory.

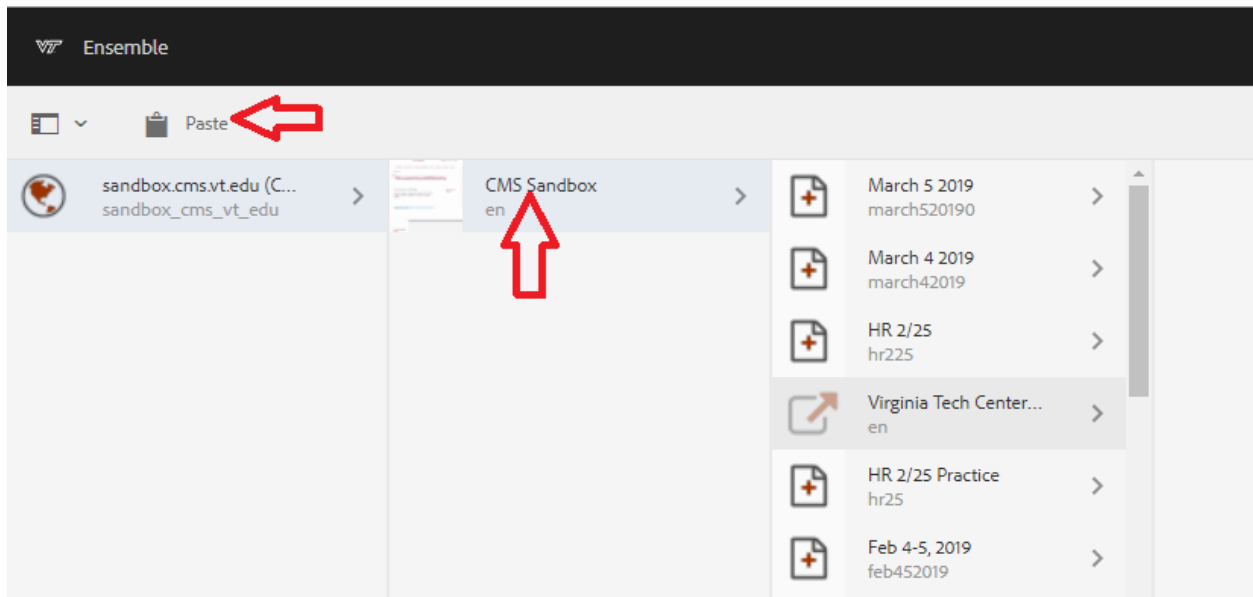


Figure 5. Pasting a webpage/website to a new directory

This copies the website/page to the directory of your choice as seen in the picture above.

4.3.2) Adding a Biography Page for a List Component

Navigate to the directory you want to add a Biography page to. This is most likely be the Faculty Page. Then click “Create” at the top right. This will create a drop down list with “Page” and “CSV Report”. Click Page.

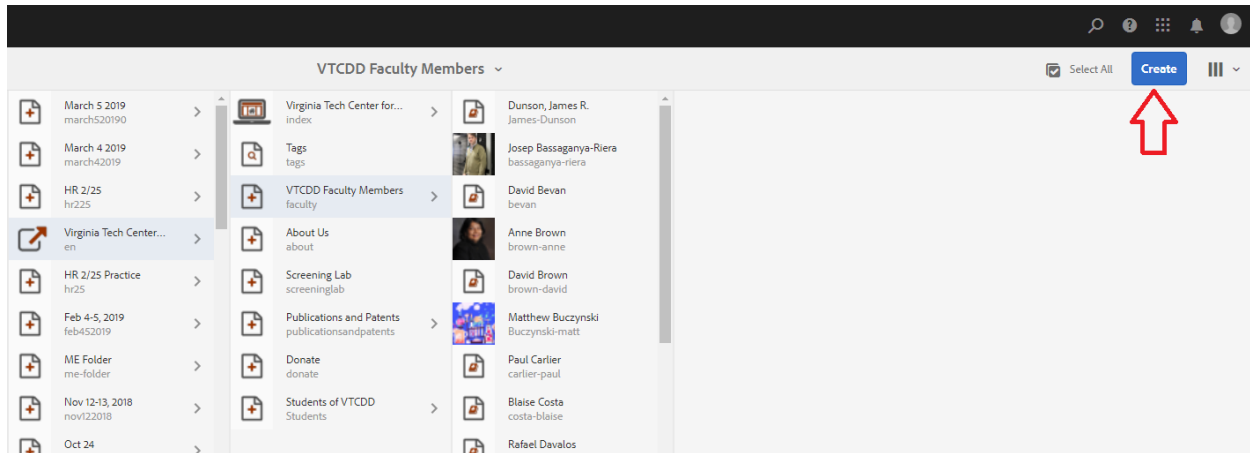


Figure 6. Creating a Page

Click Biography Page and then click Next.

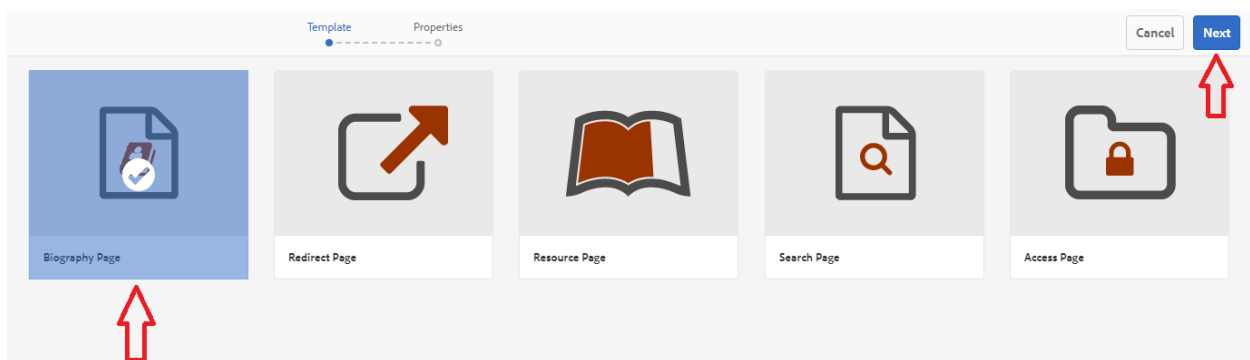


Figure 7. Creating a Biography page

The name should be what the filename should be. This should be LastName-FirstName, following the previous biography pages created. Make the title the name of the person you are creating a biography for. This will also be the URL of the person in the site. Then create a description that you want to appear on the faculty page List Component, such as the department of that person, or their email address. Then click Create.

The screenshot shows the 'Create Page' interface with the 'Basic' tab selected. The 'Title, Tags, and Style' section contains the following fields:

- Name:** A text input field with a red arrow pointing to it.
- Title *:** A text input field containing 'Name Of Person' with a red arrow pointing to it.
- Tags:** A dropdown menu with the placeholder text 'Start typing to filter'.
- Page Style:** A dropdown menu with the selected option 'Has Right Column'.
- Hide in Navigation:** An unchecked checkbox.

The 'More Titles and Description' section contains the following fields:

- Navigation Title:** An empty text input field.
- Subtitle:** An empty text input field.
- Description:** A text area containing the text 'Description that shows up on List Component' with a red arrow pointing to it.

At the top right, there are 'Back' and 'Create' buttons. A red arrow points to the 'Create' button.

Figure 8. Adding setting to the Biography page

Now we are given a blank template for the biography page. The List Component now needs an image to show up on the faculty page.

Click the slider on the top left of the page and click Open Properties.

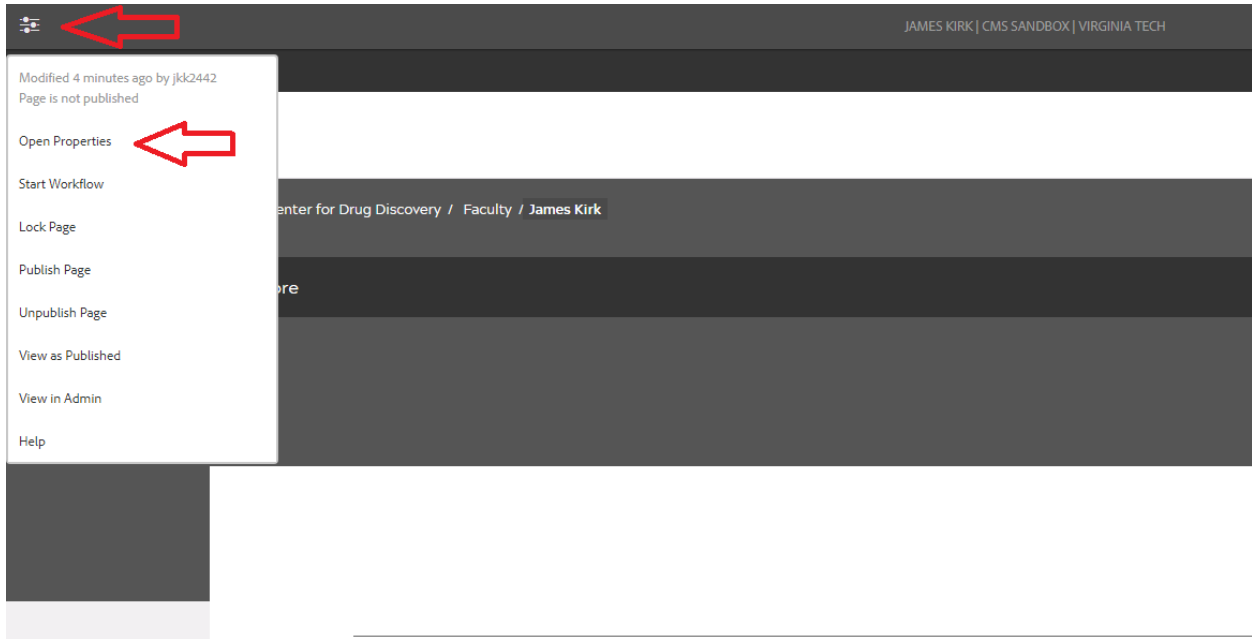


Figure 9. Opening the properties of a page

This will bring up a similar page as the biography page creation. Now click on Page Image.

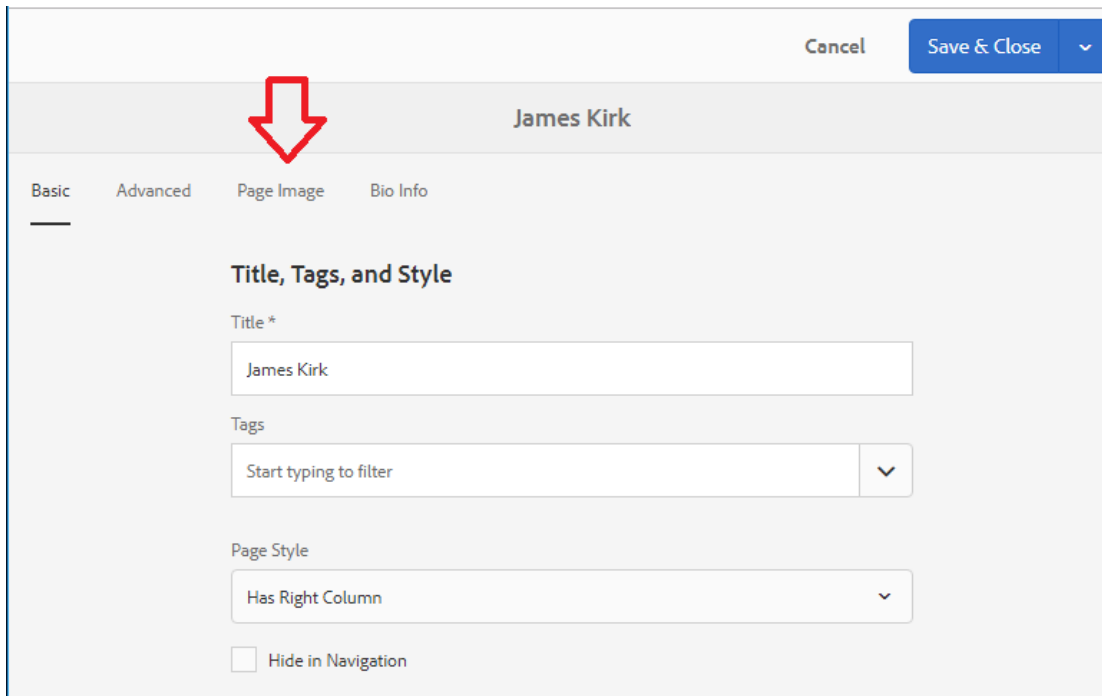
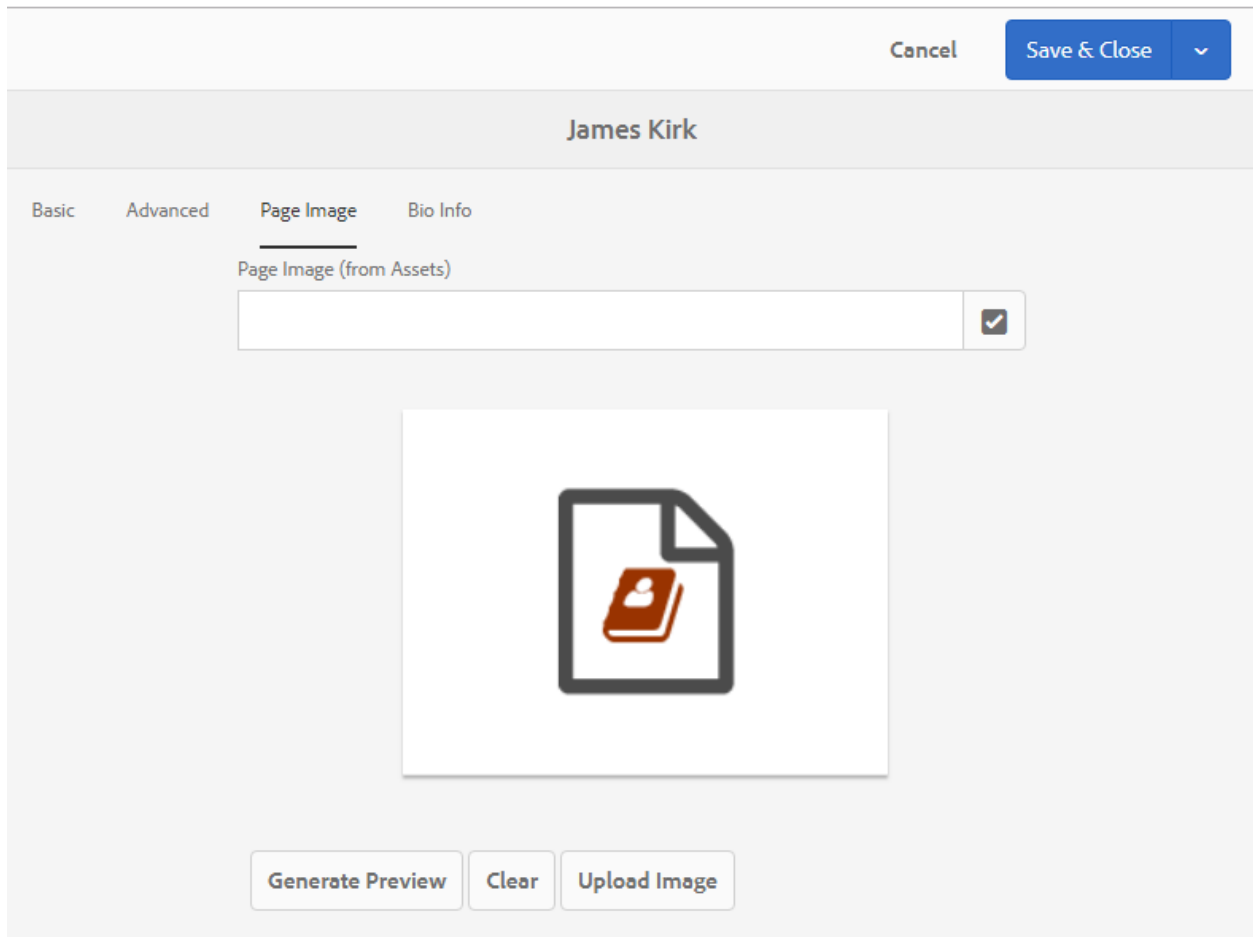


Figure 10. Navigating to change the picture of a webpage

Now you can add a page image from your assets or directly upload an image. Then click Save & Close.



The screenshot shows a user profile editing interface for "James Kirk". At the top right, there are "Cancel" and "Save & Close" buttons. Below the name, there are four tabs: "Basic", "Advanced", "Page Image", and "Bio Info". The "Page Image" tab is selected and underlined. Under this tab, there is a label "Page Image (from Assets)" above a text input field. To the right of the input field is a checked checkbox. Below the input field is a large square area containing a placeholder icon of a document with a photo of a person. At the bottom of the interface, there are three buttons: "Generate Preview", "Clear", and "Upload Image".

Figure 11. Adding a picture to a page

This creates a Biography Page that can be used for a List Component.

4.3.3 Adding a List Component

Navigate to the page on the content tree where you would want to add a List Component and click its icon. Then click “Edit”.

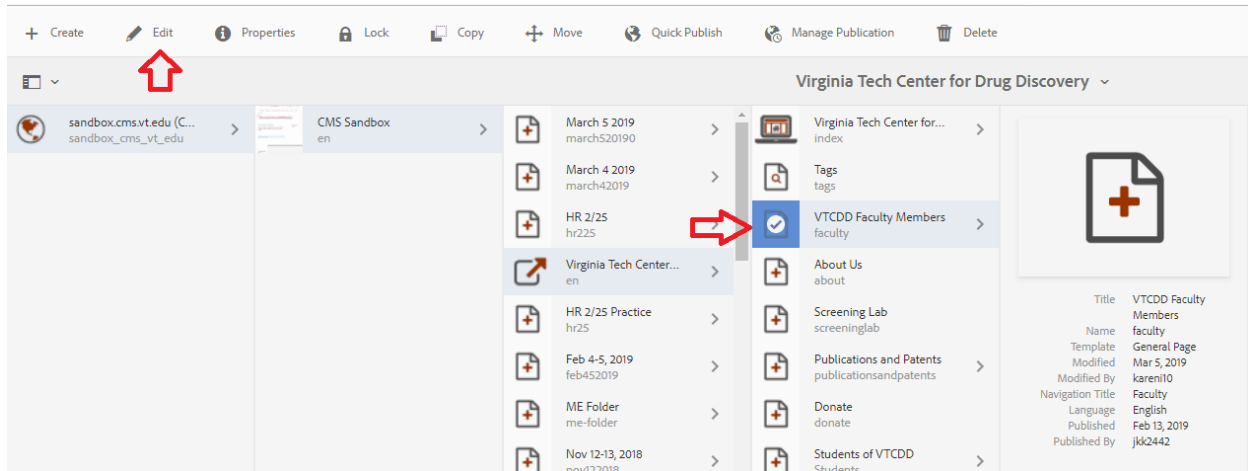


Figure 12. Navigating the content tree

Click the top left icon. It should say “Toggle Side Panel”. It should bring up a side panel that looks like this:

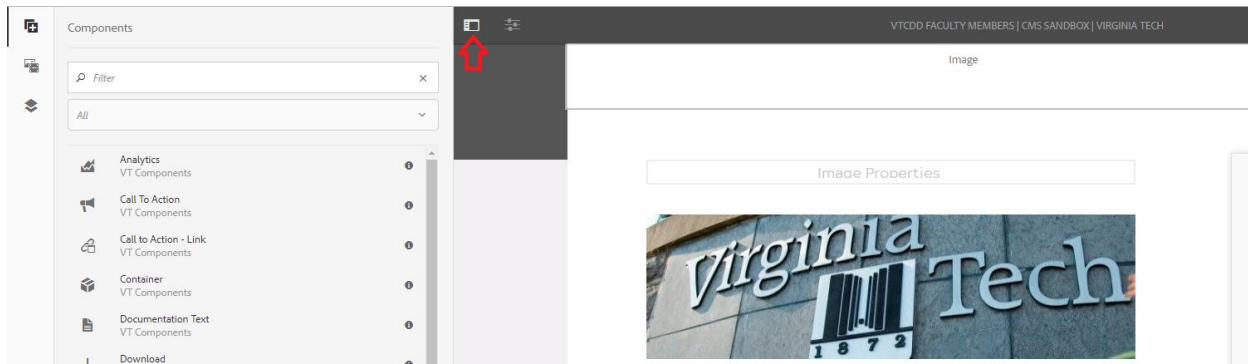


Figure 13. Toggling the side panel

These are the components you can add to your page. You want to find the List component and drag it to the desired location on your webpage.

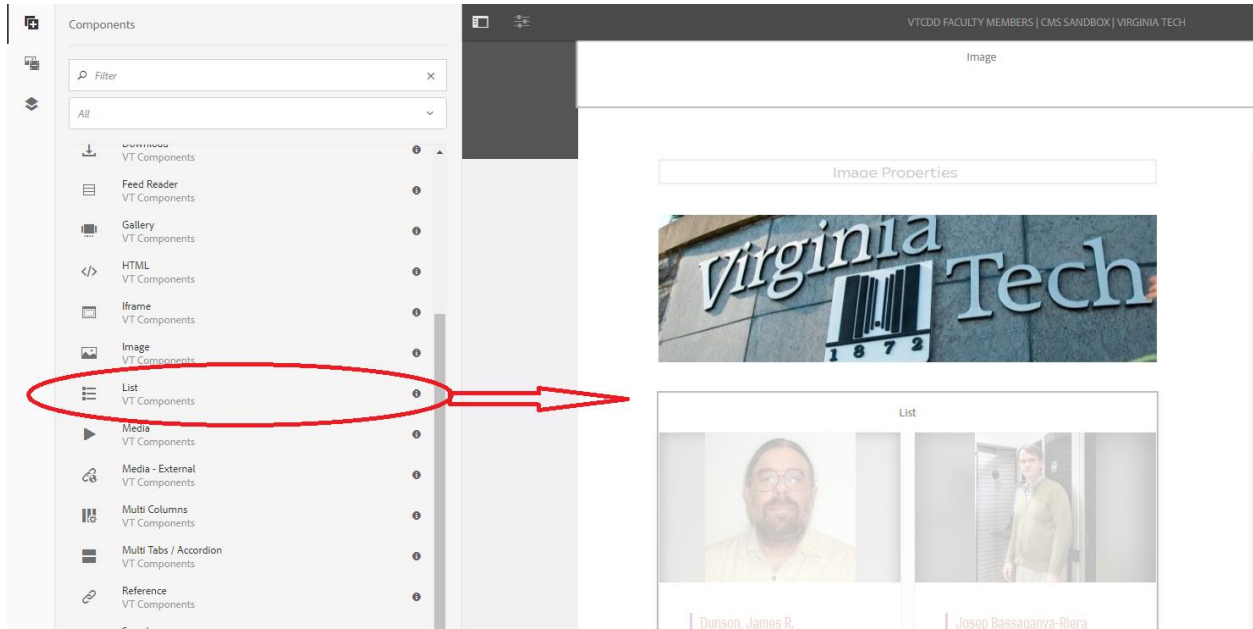


Figure 14. Adding a List component to a webpage

Now click on the component you just added. You can now see some options appear above it. Click on the wrench icon.

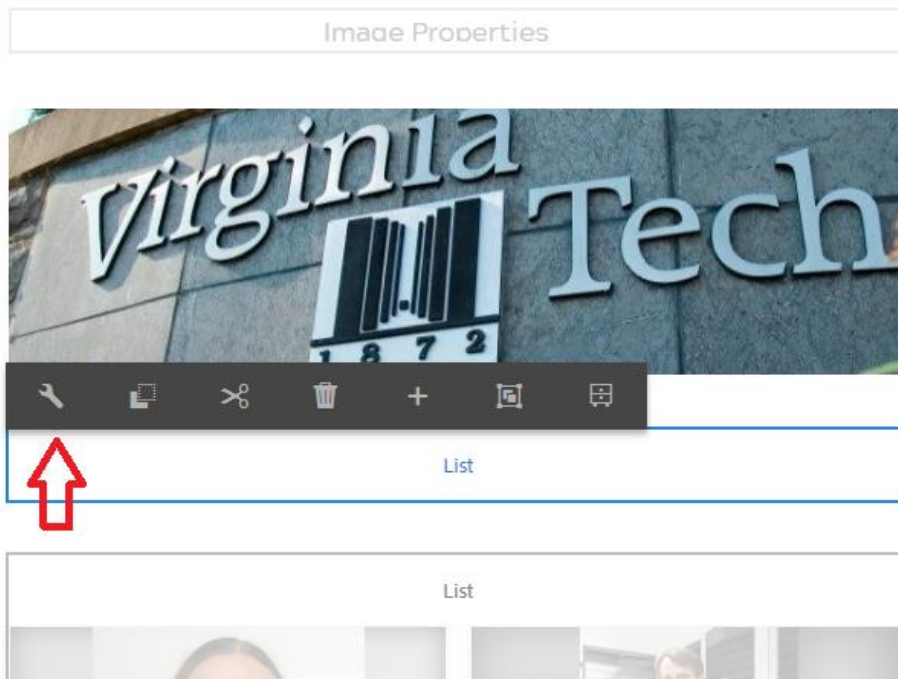


Figure 15. Navigating to edit the settings of a component

You want to build the list using child pages. They would be the children of the directory where you place your list elements, like your biography pages.

In green, we have the CSS Class. Inputting “vt-open-newTab” here makes clicking on the List Element open a new tab instead of redirecting your current page. This is optional and can be done on any Ensemble component that would normally redirect a page.

The screenshot shows the configuration interface for a 'List' component. At the top, there are three tabs: 'List Properties', 'Display Options', and 'Feed Options'. The 'List Properties' tab is active. Below the tabs, there are several settings:

- Component Title:** An empty text input field.
- CSS Class:** A text input field containing 'vt-open-newTab', highlighted with a green border.
- Build list using:** A dropdown menu set to 'Child pages'.
- Options for Child Pages:** A section containing a 'Children of' field with the path '/content/sandbox_cms_vt_edu/en/en/faculty' and a checked checkbox.
- Order by:** An empty dropdown menu.

Figure 16. Changing the settings of a List component part 1

Scrolling down, we will see the rest of the options that we can use.

The 'Order by' option can sort your list elements by several options like by filename, title, or date created.

The 'Sort order' option can just change from ascending or descending.

The 'Limit' option is useful for the news segments because it will limit how many list elements will show up. If you want to see a maximum of three components, you will set the limit to '3'.

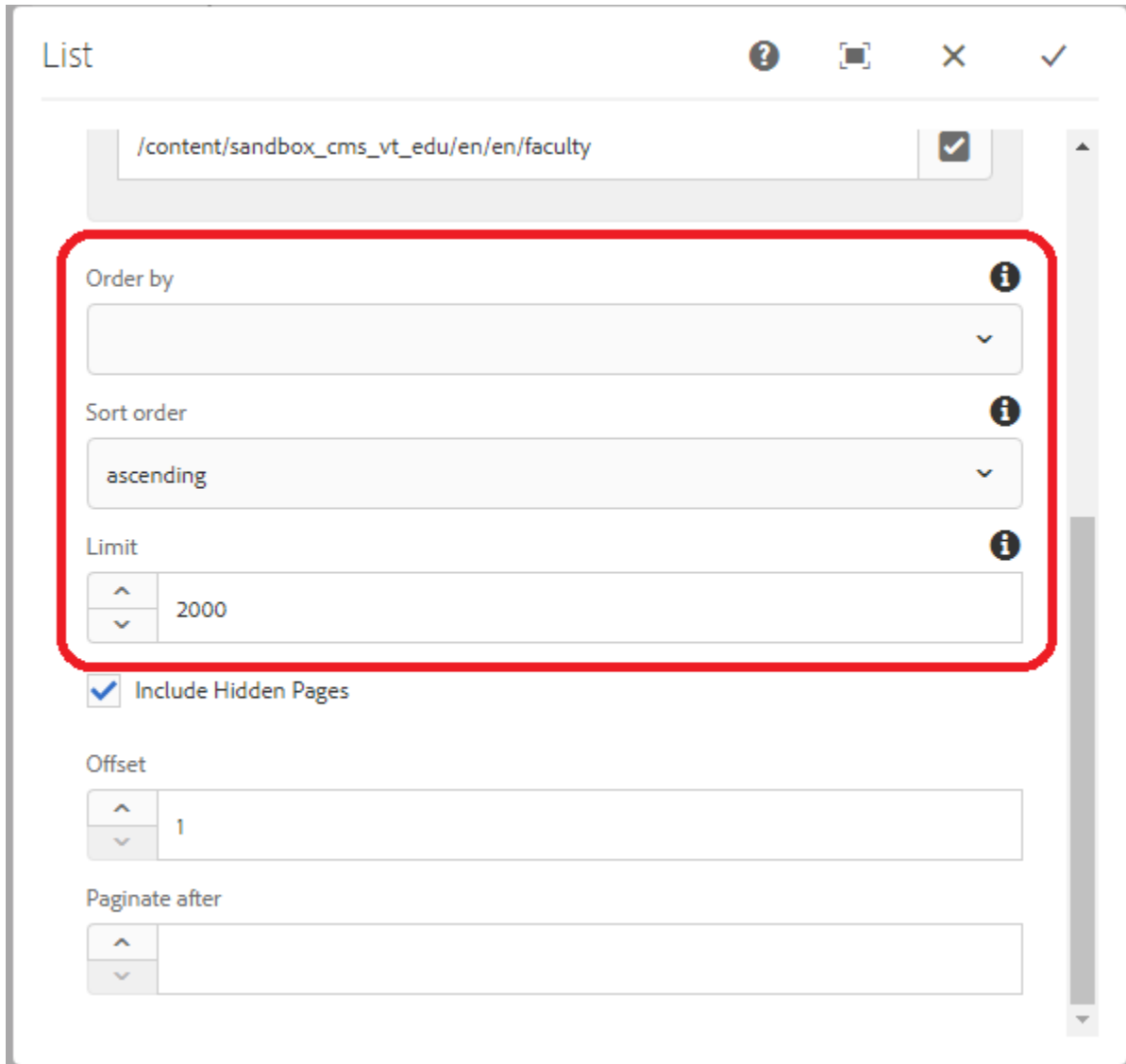


Figure 17. Changing the settings of a List component part 2

Now go back up and click ‘Display Options’. Here, we can change the number of columns we will have and the image position of the list elements. Depending on the resolution of the image, we will break the list component for that element. Therefore, it is safest to have the image position at the top unless all your images are the same size.

In Green, you can choose what you want to show for each List Element (Faculty page or News page). You always want to show the Title, almost always want to show the Description, and when making something that requires a Date like a news story list, show the Date.

Now click the checkmark.

The screenshot shows the configuration interface for a 'List' component. At the top, there are three tabs: 'List Properties', 'Display Options' (which is selected and underlined), and 'Feed Options'. In the top right corner, there are three icons: a question mark, a close button (X), and a checkmark. A red arrow points to the checkmark icon. The 'Display Options' section contains several settings:

- DisplayType:** Column (s)
- Number of Columns:** 3 (highlighted with a red box)
- Image Position:** Top (highlighted with a red box)
- Table Type:** DataTables
- Image Position:** First Column
- Date:** Jan 15 (highlighted with a green box)
- Time:** Hide (highlighted with a green box)
- Title:** Show (highlighted with a green box)
- Description:** Show (highlighted with a green box)
- Tag (s):** Hide

Figure 18. Changing the settings of a List component part 3

The List Component is now completed and will populate itself automatically any time you add a new page in that directory.

4.3.4) Adding a News Element

Navigate to the page that you want to add a news story to and click create->page.

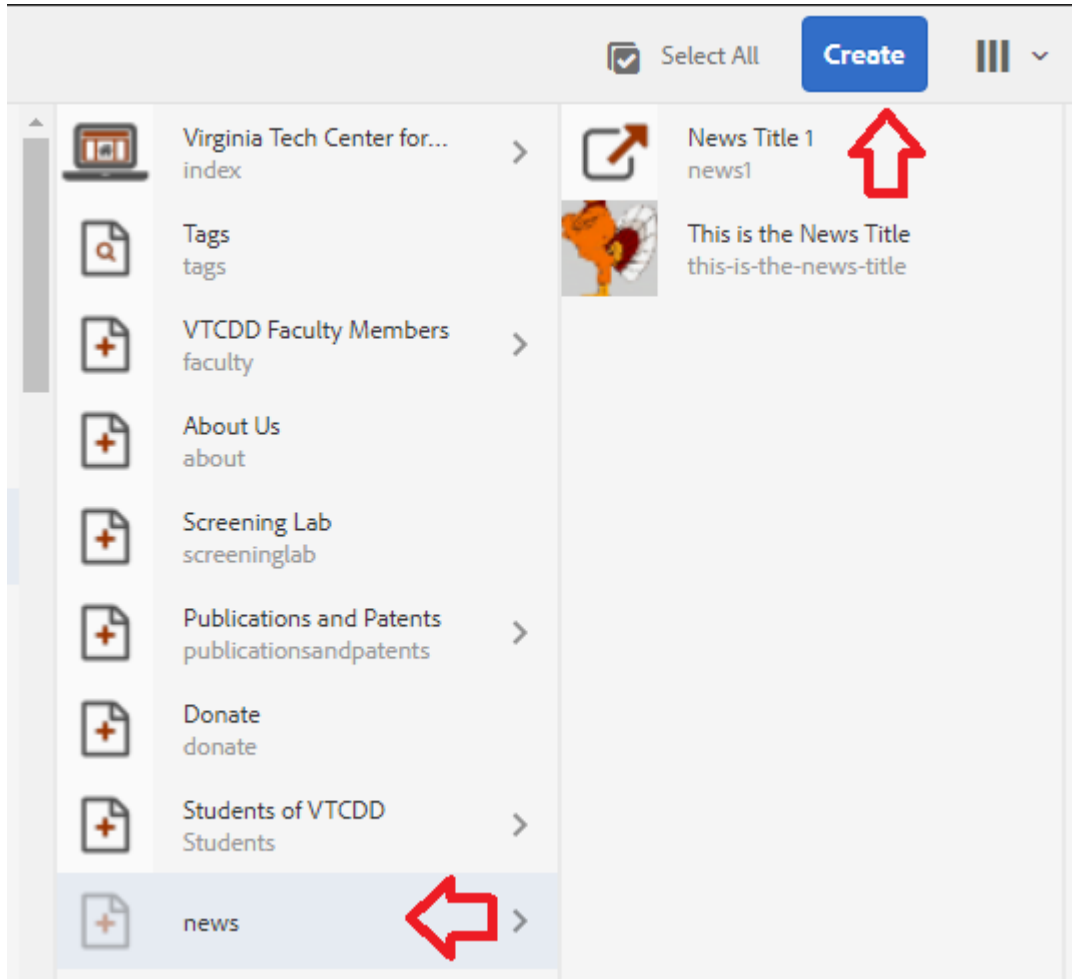


Figure 19. Navigating to news directory to create a news page

Click on Redirect Page and then click 'Next'

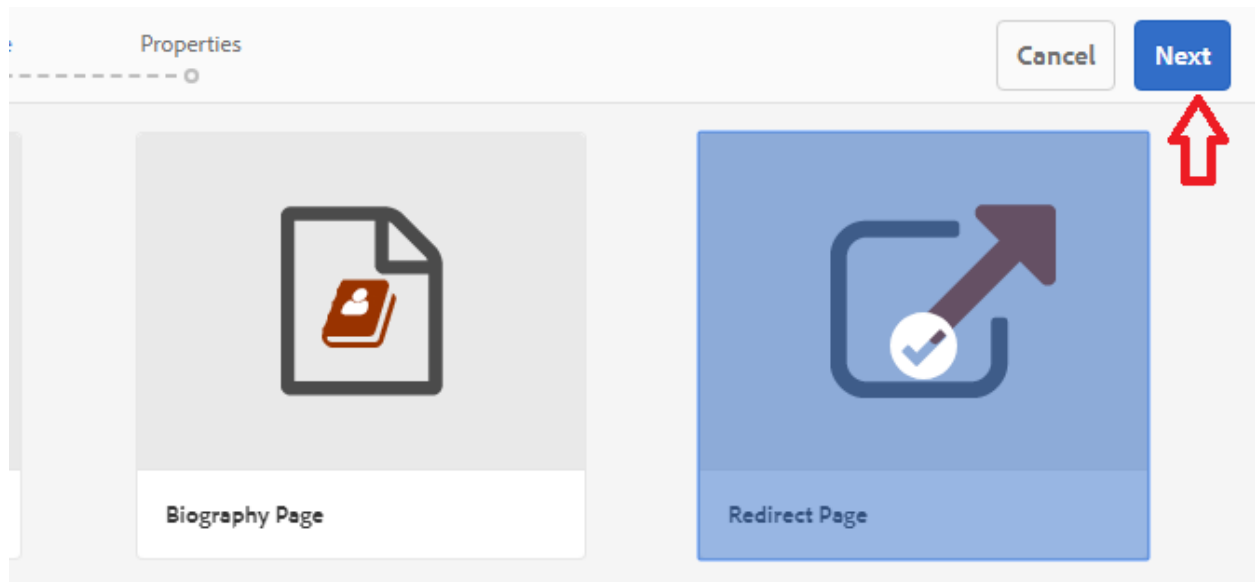


Figure 20. Creating a redirection page

Add the news story's title to the Title box and click 'Hide in Navigation'. You may add a description of the news story if you like, but this is not needed.

Then click 'Redirect Info'

The screenshot shows the 'Create Page' interface with the 'Redirect Info' tab selected. The 'Title, Tags, and Style' section is active, and the 'Title' field contains the text 'Drug hunters awarded \$2.8 million to develop a drug to treat multiple sclerosis'. The 'Hide in Navigation' checkbox is checked. The 'More Titles and Description' section is also visible, with the 'Description' field highlighted by a green arrow.

Figure 21. Adding setting to a redirect page

Add the URL of the news story you want to add and then click 'Create'. This creates the page.

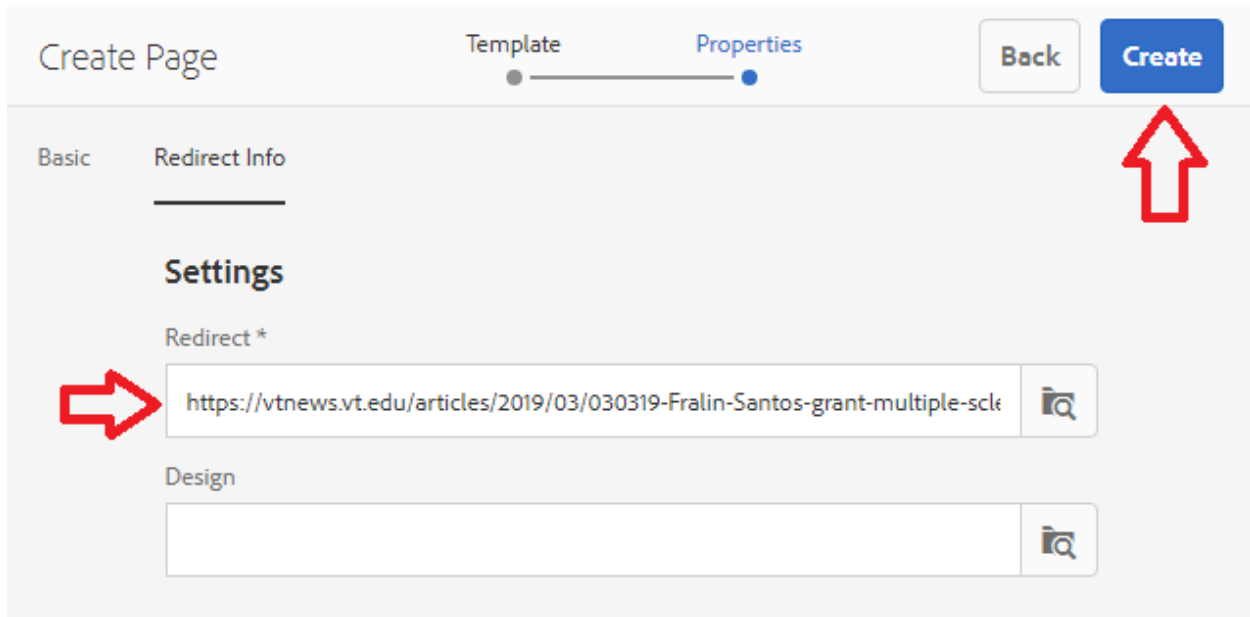


Figure 22. Adding the URL to the redirect page

Now we want to add a picture to this redirect page for it to show on the List component.

Click the top left side panel and click 'Open Properties'

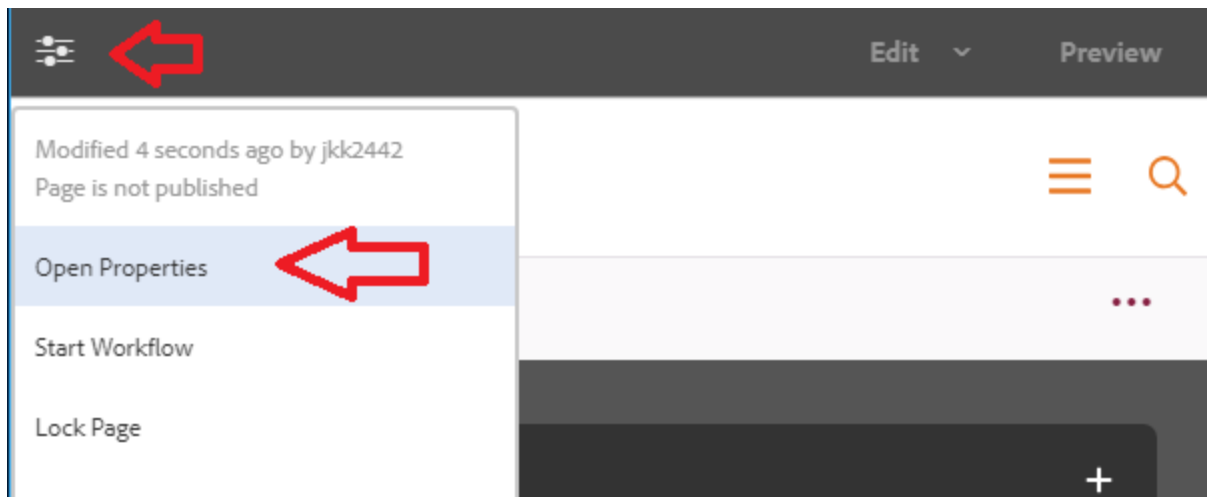


Figure 23. Opening the properties of a page

Click 'Page Image'

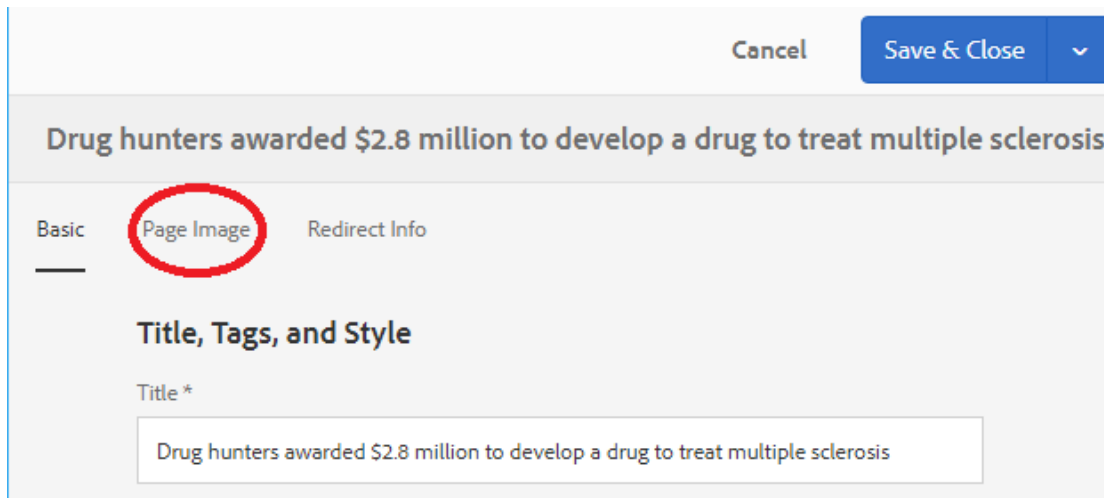


Figure 24. Opening the Page Image settings

Save the image from the news story and upload it. Then click 'Save & Close'

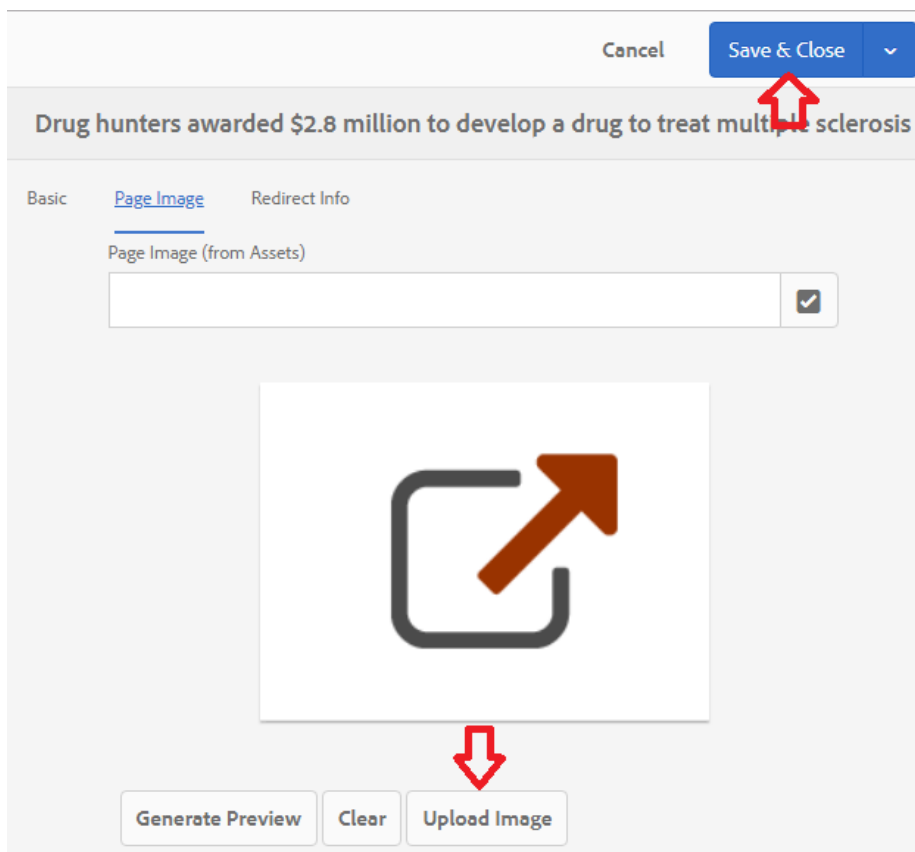


Figure 25. Adding an image to a page

The news page is now added. You will need to publish this page as well as the page that holds the list component(s) that will be using this page.

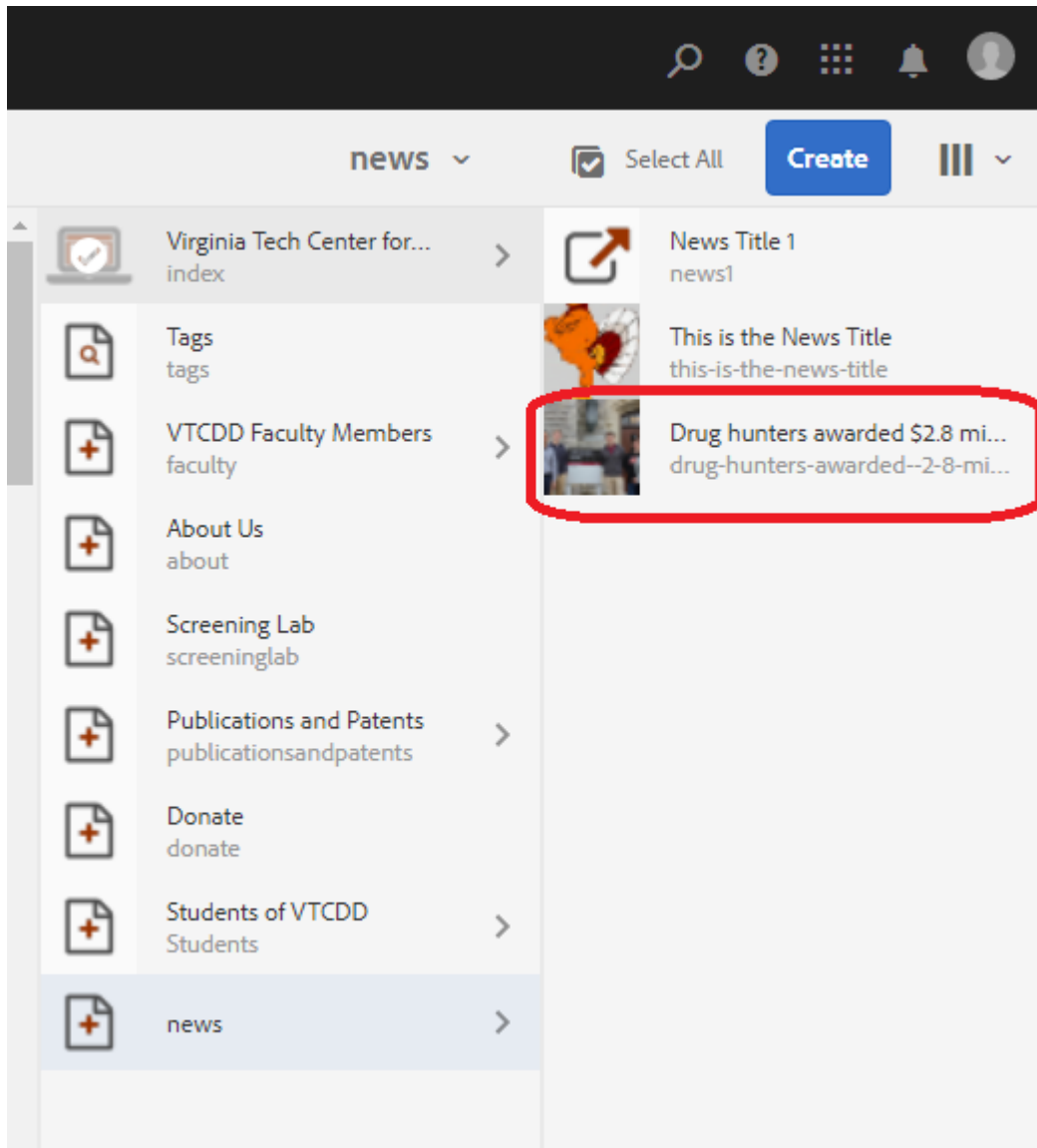


Figure 26. The added news page

5) Virginia Drug Discovery Consortium Website

The Virginia Drug Discovery Consortium website was already a finished product when the client got it. The client did not have any requests for me to work on this site besides some visual suggestions, therefore it was decided to run some usability testing on the website to show where the website needs some changes.

5.1) Usability Testing

Usability testing is done by creating tasks for the user to complete while navigating the website (i.e. Find the faculty page for X). The user will then provide some feedback regarding the difficulty in finding/accessing this information. The user will also provide general feedback on the website itself and how things are ordered. This allows the client and me to look at this data and find common problems that the users are finding, and then determine how we should fix them. This was done for both the VaDDC site and the VTCDD site.

6) Lessons Learned

This section reflects on the mistakes I have made and how I worked through them while completing the project.

6.1) Timeline and Scheduling

After meeting the client several times, I realized that the initial timelines that I made for the semester were not going to work. I could not have a fixed schedule as most of the work is not done by me, but the client instead. I was there solely to figure out the Ensemble CMS's features and adapt them for the client's website and teach her how to use them. This meant that I was not working for the client, but with the client, and I had to go with the client's pace. Maintaining these websites is not the client's main job, but something on top of her administrative duties.

I had to plan our meetings like a lesson plan instead of doing a demo like in normal capstone projects. As I cannot work on the live sites myself, I had to give the client work to do while I was not there, such as updating the biographies of every faculty member to include a picture to use for the List components. As new ideas were flowing in on how the client envisioned the website, my schedule had to be very flexible and the only hard deadline was the Final Report.

6.2) Problems and Solutions

Trying to get the Kingston website migrated was a slow and tedious task. When I figured out the problem, the client and I could not fix it directly. We had to ask VT4Help to move the files for us. This took almost two weeks to complete because of VT4Help's slow service as well as they had missed grabbing some files we requested.

The Ensemble interface had a visual update during the whole duration of Spring Break. This meant that I could not work on the Virginia Tech Drug Discovery website whatsoever as any changes made would be lost. This also meant that all the manuals I created for the site had to be redone completely because many of them were now visually different on the new interface. For this problem, I just had to suffer and redo the work.

6.4) Future Work

The Kingston site will be retired later this year so there will be no future work required after this semester. The Virginia Drug Discovery Consortium website will need work in the future, but that can be maintained by the client. The Virginia Tech Drug Discovery website will also need more work in the future as the faculty members will change. Likewise, there will be changes in the news story segments. This will be easy to maintain as I have written manuals for these exact situations. As long as Virginia Tech uses Ensemble, there should be no major need for drastic changes to the website except for the home page whenever there is an update to Ensemble.

7) Acknowledgements

Karen Iannacone:

kareni10@vtedu

Karen Iannacone was the client for this project. She was directly involved throughout the entire process of the project. We met several times a month in order for us to be on the same page as well as give feedback to each other on how we should proceed.

8) References

- [1] Adobe Experience Manager Core Components, accessed 30 April 2019. <<https://docs.adobe.com/content/help/en/experience-manager-core-components/using/introduction.html>> The Adobe Experience Manager (AEM) Core Components shows the components available in AEM, their features, and how to use them. Ensemble is based off of this but restricts the usage of these components. This is good background knowledge to have.
- [2] Ensemble Documentation, accessed 28 March 2019. <<https://ensemble.cms.vt.edu/>> The Ensemble Documentation is the only documentation available as Ensemble was built for Virginia Tech websites. Although the information in it is limited, it does provide some valuable information.
- [3] Kingston, accessed 28 March 2019. <<https://kingstonchem.wp.prod.es.cloud.vt.edu/>> This is the Kingston website that was worked on for the site migration.
- [4] Virginia Drug Discovery Consortium, accessed 28 March 2019. <<https://vaddc.org/>> This is the VaDDC website that was built in WordPress.
- [5] Virginia Tech Center for Drug Discovery, accessed 28 March 2019. <<https://www.vtcdd.science.vt.edu/>> This is the VTCDD website that was built in Ensemble.