

How to use the Comparative Pathology Workbench

This document outlines how to use the Comparative Pathology Workbench (CPW); terms are first described, with a brief overview of the system, followed by a more detailed description of the typical tasks a user would expect to achieve within the CPW.

1. What is the CPW?

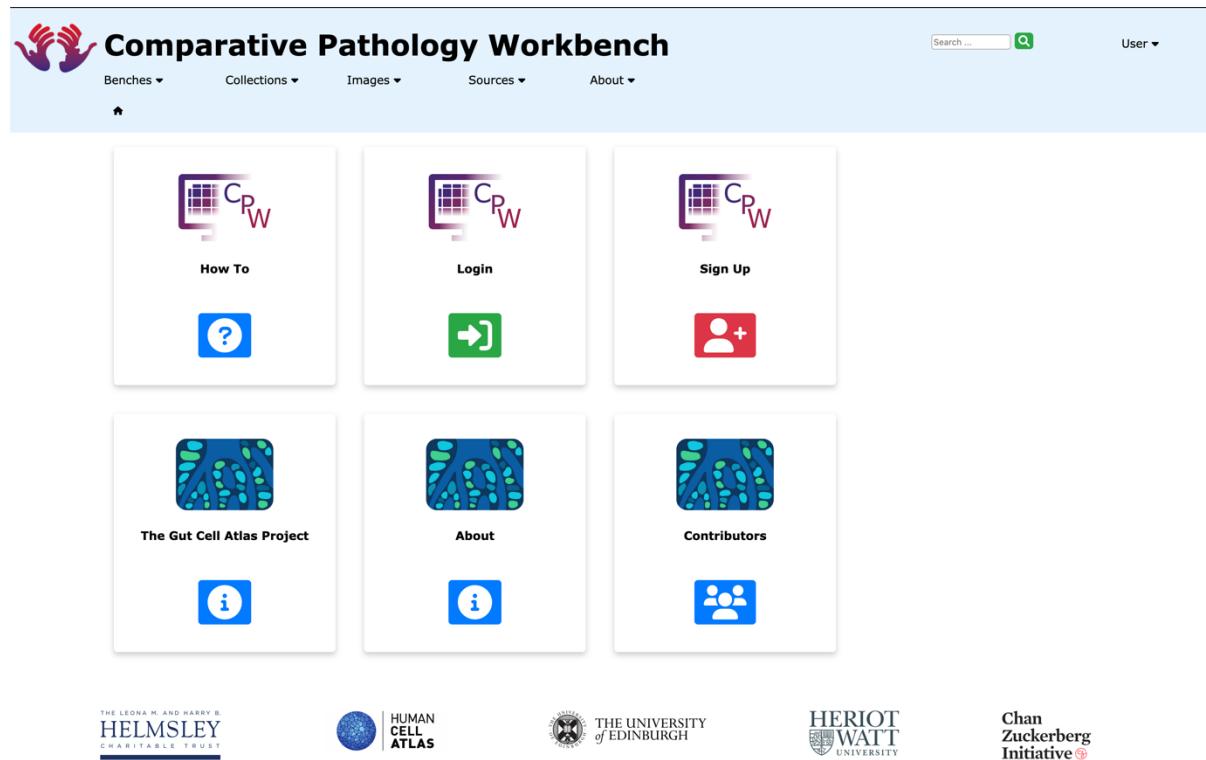


Figure 1 – The CPW Home Page

The CPW is intended to be used by Pathologists to organise histopathological image and other image-related related data and metadata from multiple disparate sources.

To this end, we have created the concept of a “Bench”; this is a user-configurable grid of Cells arranged in rows and columns (similar to the concept of a spreadsheet), that can be populated with data and metadata, as the User sees fit.

1.1 The CPW Header Panel



Figure 2 – The CPW Header Panel

At the top of every page in the CPW, there is a common header panel, which includes the following main menu options:

- Benches
 - This displays the List Benches page;
- Collections
 - This displays the List Collections page;
- Images
 - This displays the List Images page, either from your Active Collection or all your images from all your Collections;
- Sources
 - This displays the List Sources page;
- About
 - Displays further pages:
 - About (general information on the CPW),
 - People (involved in the creation and construction of the CPW) and
 - How To (use the CPW);
- Search Box
 - a general search box, that searches for Benches that contain the string supplied in their titles, descriptions, owners or authorities.
- User
 - If a User is Logged in, User account functions are displayed, including
 - Logout,
 - Bench Permissions (See later section on Sharing),
 - Collection Permissions (See later section on Sharing),
 - Change Password, and
 - My account (information).
 - If a User is not Logged in, only the Login and Registration options are displayed.

1.2 The Home Page

When no User is logged in, the Home page offers the following short cut functions via buttons within 6 “cards”:

“How To”, “Login”, “Register”, “About”, “Contributors” and “The Centre for Comparative Pathology”

When a User is logged in, the home page offers the following short cut functions via buttons within 6 “cards”:

“How To”, “Benches”, “Logout”, “About”, “Contributors” and “The Centre for Comparative Pathology”.

1.2.1 The Home Page Cards

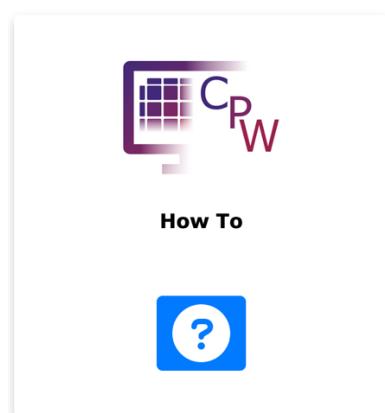


Figure 3 – The CPW Home Page Card – “How To”

Clicking on this is the same as clicking on the “About”, “How To” main menu option.

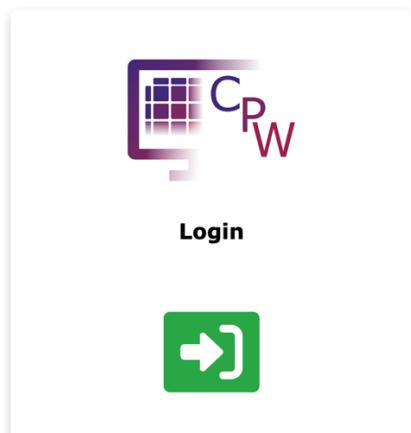


Figure 4 – The CPW Home Page Card – “Login”

Clicking on this is the same as clicking on the “User”, “Login” main menu option.

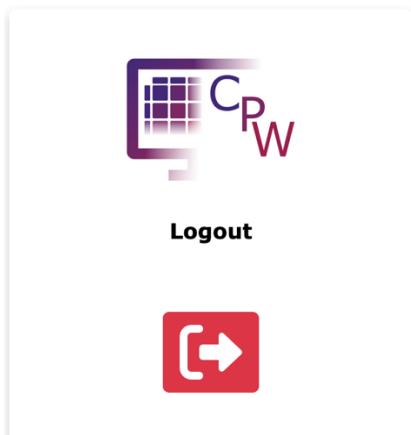


Figure 5 – The CPW Home Page Card – “Logout”

Clicking on this is the same as clicking on the “Usrr”, “Logout” main menu option.

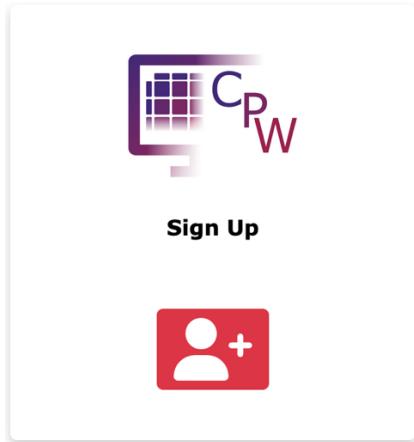


Figure 6 – The CPW Home Page Card – “Sign Up”

Clicking on this is the same as clicking on the “User”, “Sign Up” main menu option.

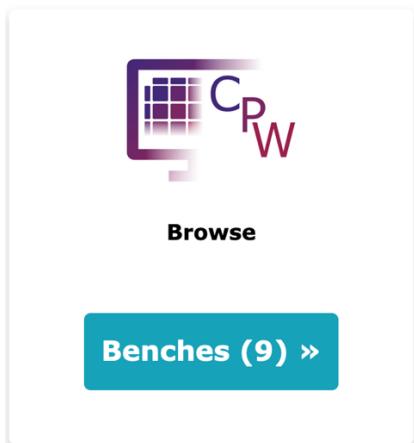


Figure 7 – The CPW Home Page Card – “Benches”

Clicking on this is the same as clicking on the “Benches” main menu option.

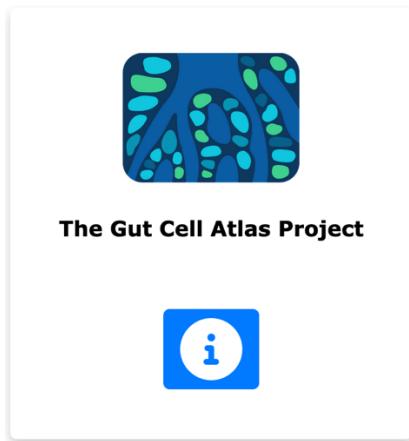


Figure 8 – The CPW Home Page Card – “The Gut Cell Atlas Project”

Clicking on this takes the User to The Gut Cell Atlas Project website.

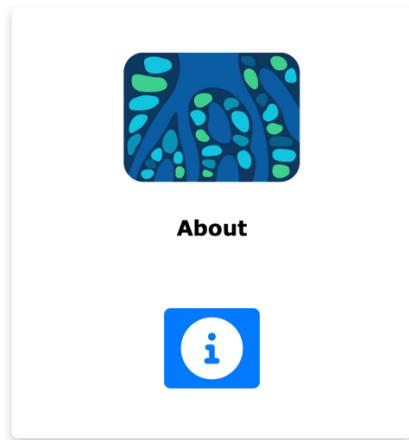


Figure 9 – The CPW Home Page Card – “About”

Clicking on this takes the User to The Gut Cell Atlas Project website, Summary Page.

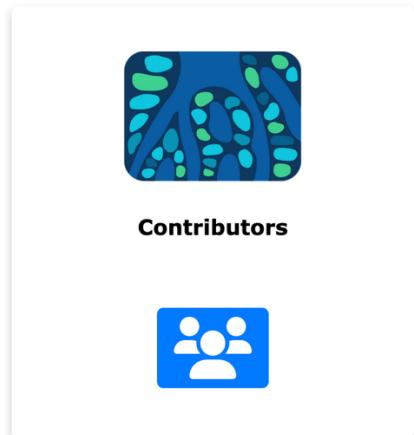


Figure 10 – The CPW Home Page Card – “Contributors”

Clicking on this takes the User to The Gut Cell Atlas Project website, The Team Page.

2. Nomenclature

The CPW uses the following terms to describe the components that it can manage and organise:

2.1 Sources

The list of available Sources can be viewed by selecting the “Sources” main menu option within the CPW.

There are 3 types of data source that the CPW can handle:

1. OMERO servers,
2. WordPress Media Libraries, and
3. The European Bioinformatics Institute (EBI) Single Cell Atlas (SCA).

The CPW can be updated to include as many of these types of data source as are required.

2.1.1 OMERO Servers

OMERO servers provide a JSON interface that allows the resources that it manages to be exposed, via unique URLs. The CPW uses this interface to provide a set of screens that enable easy navigation through the available resources.

The user of the CPW can drill down through as many available Groups, Projects and Datasets stored on an OMERO server, that the credentials stored with the source definition in the CPW, allows.

The User can upload image files (such as scanned histopathology sections, or photomicrographs of parts of sections, or macroscopic pathology images, or any other relevant image) to OMERO and then view the images, within a Dataset (and their Regions Of Interest (ROIs) if any), for bringing into and further processing by the CPW.

2.1.2 The EBI Single Cell Atlas (SCA)

The EBI Single Cell Atlas (SCA) provides a highly configurable set of URLs that precisely define “tSNE” and “UMAP” charts that it can provide to the User.

The CPW can generate charts from these URLs and store these charts as images. The User can select these images for further processing by the CPW.

2.1.3 WordPress Media Libraries

The CPW uses a WordPress server to provide a commentary facility; However, a WordPress server can also be used to store miscellaneous images. The User can select these images for further processing by the CPW.

2.2 Images

The list of available images can be viewed by selecting the “Images” main menu option within the CPW.

The CPW does not store any images locally within its system; instead, it stores references to images that are held on other systems. These references are to images held on the 3 types of system mentioned previously (OMERO servers, WordPress Servers, and the EBI SCA).

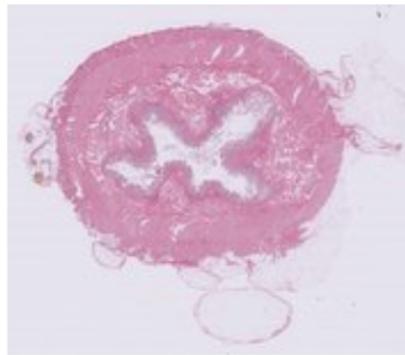
2021.03.12-SR149220...

Image Information

Image Name: 2021.03.12-SR149220_02_PSR_Healthy.ndpi [0]

Image Description: 680058

Image:



Dimensions (XY): 98304 x 86016

Pixels Type:

Pixels Size (XYZ) (μm): 0.2267 x 0.2267

Z-sections/Timepoints: 1 x 1



Figure 11 – An Image held on an OMERO Server



/ Sources / mwicks23@CompPathUofE / MVM / imagesFromOneDrive / images / ETGM10-A1.LI.ndpi [...]

Regions Of Interest (ROIs)

Image has 3 ROIs

ROI ID: 61

Coordinates: X: 19915, Y: 15456, Width: 2520, Height: 1456

Polygon

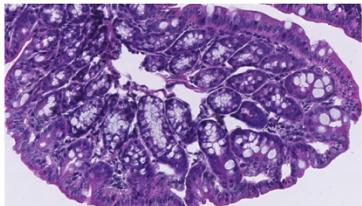


Figure 12 – An ROI from an Image held on an OMERO server

E-HCAD-11_CCL8_gene-expression

Image Information

Image Caption:

Image Description:

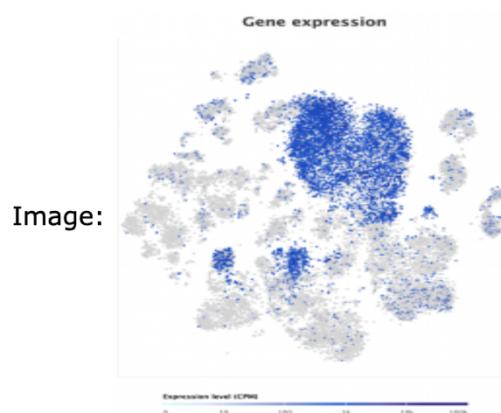
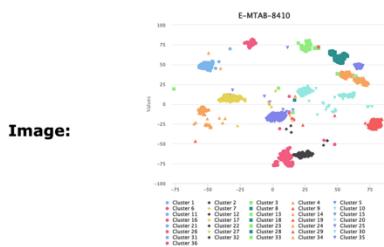


Figure 13 – A t-SNE image showing gene expression patterns held on a WordPress Server

Chart: 20220302-16:10:04.366 E-MTAB-8410 TSNE 20 36 NoGene

Image Information

Experiment: E-MTAB-8410
Chart Name: 20220302-16:10:04.366 E-MTAB-8410 TSNE 20 36 NoGene



Plot Type: TSNE
Perplexity: 20
Cluster By: 36
Gene: None

Figure 14 – A t-SNE Chart generated from a URL from the EBI SCA.

When the user of the CPW has found an image of interest, first the image must be added to a Collection.

2.3 Collections

The list of available Collections can be viewed by selecting the “Collections” main menu option within the CPW.

A Collection is a set of images that the user has gathered together in a single, named group.

Initially, a new user has NO collections, and must create one to start collecting images. Each collection must have a name and description. A collection can be marked as “Active”, if so, all the other collections that the user may have, are marked as “Inactive”. Setting the active collection can be done on the “List Collections” page.

When browsing the image sources that the CPW knows about, the user is offered the chance to add that image to a Collection, which is their Active Collection.

The images in collections can then be used by the User to populate a Bench.

Collection 14, "EBI SCA Collection"

You have collected 3 Images (Owned By mwicks23)

Action	ROI	Server	Image	Collection	Bench
 		mwicks23@CompPathUofE (omero-czi-cpw.mvm.ed.ac.uk)		 "Normal and Crohns Examples" (Owned By mwicks23) "EBI SCA Collection" (Owned By mwicks23) "A Simple Collection" (Owned By mwicks23)	 "Ileum Normal and Crohns" (Owned By mwicks23) "Irene" (Owned By mwicks23)
 		EBI Single Cell Atlas (www.ebi.ac.uk/gxa/sc)	 E-MTAB-8410	 "EBI SCA Collection" (Owned By mwicks23)	

Figure 15 – An example of a Collection with some images

2.4 Benches

The list of available Benches can be viewed by selecting the “Benches” main menu option within the CPW.

As described previously, a Bench is a grid of cells, which can house references to images; the Bench has a user definable title and description. On the creation of a Bench, the User may specify the initial number of rows and columns; the size of the cells in the grid is specified when the Bench is created, but can also be amended later as the User sees fit.

The row and column headers in the Bench can be given titles and descriptions, as the user requires. Benches can be increased or decreased in size by adding or removing rows and columns of cells.

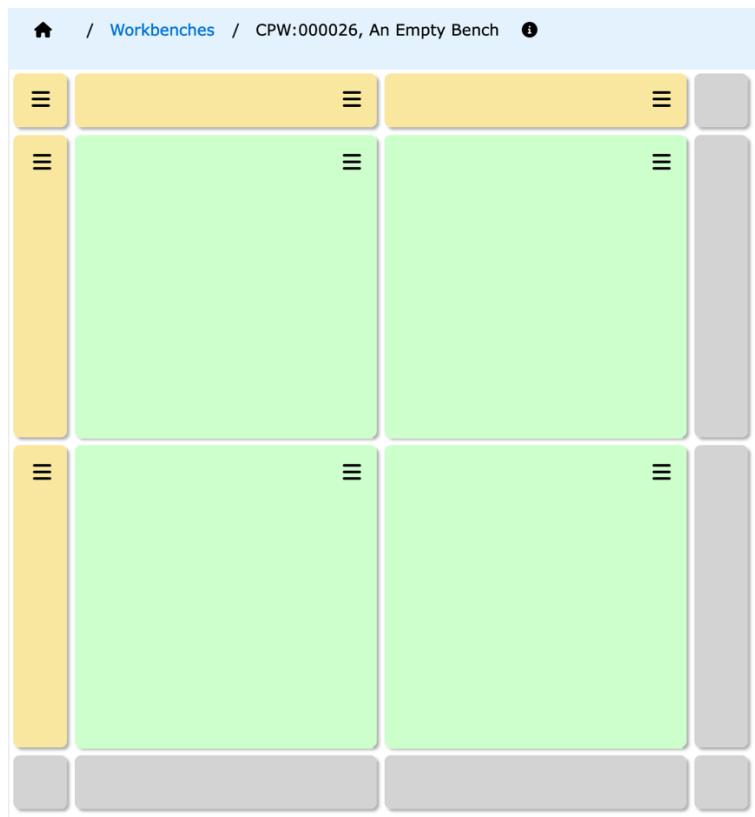


Figure 16 – An Empty Bench

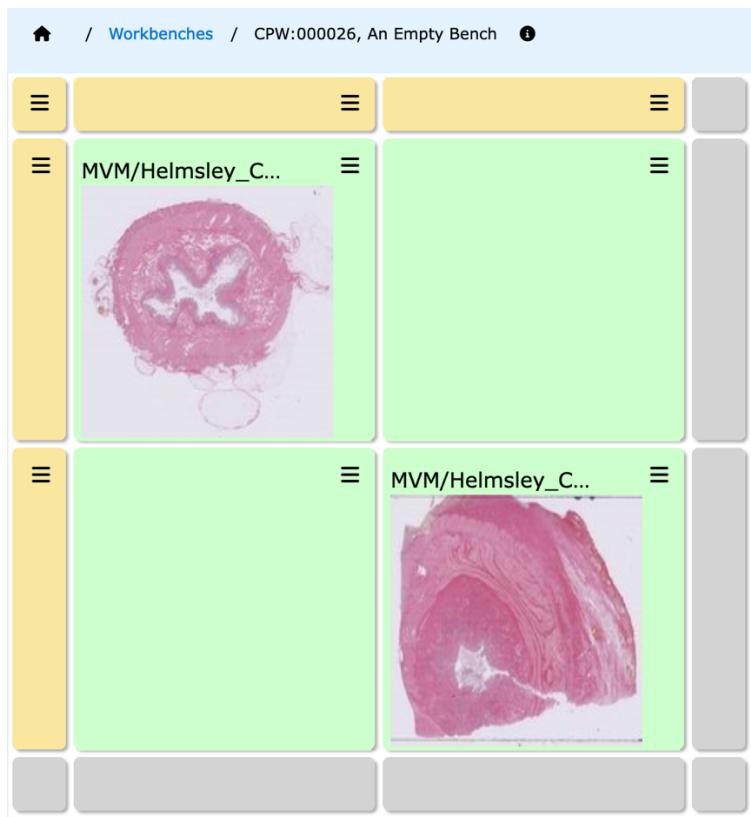


Figure 17 – A Bench with images

3. Tasks

There are a number of typical tasks that a User will want to achieve with the CPW:

3.1 Registering as a new User

On the Home page, the User can click on the red “Registration” button to register as a new user of the CPW. The User can then fill in the form and press “Sign Up”, with the registration confirmed by email.

The User of the CPW will also need to register on the Comparative Pathology WordPress site to ensure use of the full functionality of the Workbench. The CPW Administrator will provide instructions for the User to do this.

The User of the CPW must contact the CPW administrator for further instructions.

3.2 Logging into the CPW

From the Home page, the User must click on green “Login” button to login into the CPW.

3.3 Creating a Collection

From the Home page, the User must first click on the “Collections” main menu item to display the List Collections page.



Before the User can collect images to populate a Bench with, a Collection must be created, by pressing the green “Plus” icon on the List Collections page.

The User must supply a title and description for the Collection, and whether the new collection is to be the User’s Active Collection. The Active Collection is the collection that houses any images that are selected and saved by the User.



The User can choose a different Active collection on the List Collections page, by pressing the green “Bell” icon;



The red “Bell” icon indicates the currently active collection.

3.4 Finding Images & Adding Images to a Collection

From the Home page, the User must first click on the “Source” main menu option.



A list of sources is presented to the User, and clicking on the grey-green “Eye” icon next to a source of interest, allows the source to be browsed.

Depending on the type of source being browsed, different options are presented to the User.



Some types of Image Source, typically certain OMERO servers, require you to login separately in another tab in the same browser. If the User needs to do this, a green “Login” icon is displayed. Clicking on this prompts the CPW User to login to this external system, with the browser returning to the originating page in the CPW.

3.4.1 OMERO Images

For an OMERO source type, the User is presented with a list of Groups available on the OMERO server.

Clicking on a Group, shows the list of available Projects within the selected Group; clicking on the Project, shows the list of available Datasets within the selected Project; clicking on the Dataset shows the list of available Images within the selected Dataset; clicking on the Image shows the Image, its metadata and any Regions Of Interest, if available.

The selected image can be added to the User’s active collection, by pressing the green “Plus” button followed by the confirmation pop-up dialogue.

If the Image has Regions of Interest (ROIs), displayed by scrolling down from the image, then these can be added to the User’s active collection, by pressing the green “Plus” button followed by the confirmation pop-up dialogue.

On the image page, the User can press the grey-green “Eye” icon which displays the List Collection page; the List Collection page shows all the images in the Active collection.

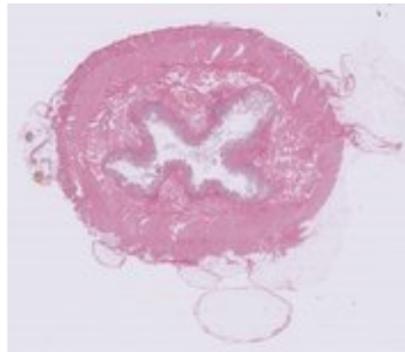
2021.03.12-SR149220...

Image Information

Image Name: 2021.03.12-SR149220_02_PSR_Healthy.ndpi [0]

Image Description: 680058

Image:



Dimensions (XY): 98304 x 86016

Pixels Type:

Pixels Size (XYZ) (μm): 0.2267 x 0.2267

Z-sections/Timepoints: 1 x 1



Figure 18 – The Image page

On the Dataset display page, a single Image can be added to the User's active collection, by pressing the green "Plus" button followed by the confirmation pop-up dialogue.

Home / Sources / mwicks23@CompPathUofE / MVM / Helmsley_CD

2021.03.12 - PSR_healthy_CD_ilium

Dataset contains 24 images

The screenshot shows a dataset page with five image thumbnails. Each thumbnail includes a green '+' button labeled 'Add to Active Collection?' and a small checkbox. The images are labeled as follows:

- 2021.03.12-SR149206_02_PSR_CD.ndpi [0]
- 2021.03.12-SR149206_02_PSR_CD.ndpi [macro image]
- 2021.03.12-SR149206_02_PSR_CD.ndpi [macro mask image]
- 2021.03.12-SR149207_02_PSR_CD.ndpi [0]
- 2021.03.12-SR149207_02_P [macro imag]

Figure 19 – The Dataset page



Also on the Dataset display page, multiple Images can be selected either by individually checking the check box associated with the Image, or by pressing the red “Tick” icon to select all the Images in the Dataset followed by pressing the green “Plus” icon. No confirmation dialogueue is generated with this option.

3.4.2 EBI SCA Charts

For an EBI SCA source type, the User is presented with a simple input box into which a URL from the EBI SCA must be pasted; pressing the red “Search” button generates the associated tSNE/UMAP chart, and this is displayed, together with its associated metadata.

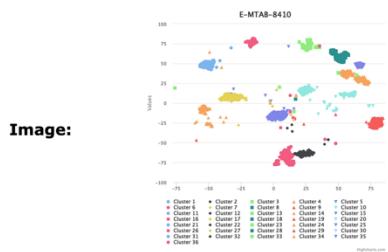
The screenshot shows the EBI Single Cell Atlas website. At the top, there is a navigation bar with a home icon, followed by "/ Sources / EBI Single Cell Atlas". Below this, the main title "EBI Single Cell Atlas" is displayed in large, bold, black font. Underneath the title, the section "Chart Search" is shown in bold black font. A text input field with the placeholder "Input a URL to find a Chart" is present. Below the input field, there is a label "Url string:" followed by a text input box. At the bottom of the search area, there are two buttons: a red "SEARCH" button and a green "CLEAR" button.

Figure 20 – The EBI SCA page

Chart: 20220302-16:10:04.366 E-MTAB-8410 TSNE 20 36 NoGene

Image Information

Experiment: E-MTAB-8410
Chart Name: 20220302-16:10:04.366 E-MTAB-8410 TSNE 20 36 NoGene



Plot Type: TSNE
Perplexity: 20
Cluster By: 36
Gene: None

Figure 21.1 – The EBI SCA Chart page

Experiment Metadata

Type: Baseline
Description: Single cell sequencing of colorectal tumors and adjacent non-malignant colon tissue
Load Date: 16-07-2020
Last Update: 01-09-2020
Number Of Assays: 60383
Number Of Contrasts: None
Species: Homo sapiens
Kingdom: animals
Technology Type: 10xv2
Experimental Factors: sampling site, inferred cell type - authors labels, inferred cell type - ontology labels
Project: None



Figure 21.2 – The EBI SCA Chart page

This chart can be added to the User's active collection, by pressing the green "Plus" button followed by the confirmation pop-up dialogue.

On the image page, the User can press the grey-green "Eye" icon which displays the List Collection page; the List Collection page shows all the images in the Active collection.

3.4.3. WordPress Images

For a WordPress source type, the User is presented with a list of images from the User's WordPress Media Library.

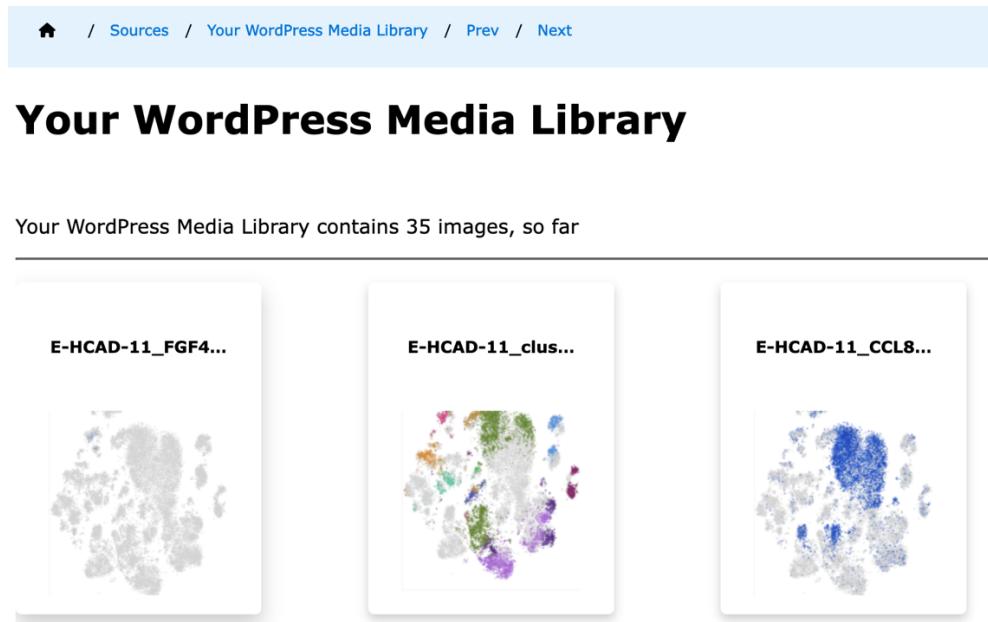


Figure 22 – The WordPress Media Library page

By clicking on an image, the User is presented with the image. This image can be added to the User's active collection, by pressing the green "Plus" button followed by the confirmation pop-up dialogue.

E-HCAD-11_clusters

Image Information

Image Caption:

Image Description:



Figure 23 – The WordPress Image page

On the image page, the User can press the grey-green “Eye” icon which displays the List Collection page, which shows all the images in the Active collection.

3.5 Creating a Bench

From the Home page, the User must first click on the “Benches” main menu option, or the grey-green “Benches” button.

A list of the User’s Benches is presented in the “List Benches” page.



A Bench is created, by pressing the green “Plus” icon on the “List Benches” page.

When a Bench is created a title and description must be supplied; optionally the cell width and height can be specified as well as the number of rows and columns, if the default values are not satisfactory.

On creation the Bench page is displayed.

CPW:000020, Ileum Normal and Crohns						
≡	Normal	≡	Healthy ROIs	≡	CCL8	≡
	Healthy Ileum 1					
	Healthy Ileum 2					CD Ileum 2

Figure 24 – The Bench page

3.5.1 Bench page components

The Bench page consists of 2 panels: the currently Active Collection is displayed to the immediate left of the page; and the Bench itself to the right of the Active Collection.

In addition, the CPW Header in the Bench page is amended to include a Bench Information Panel; information on the current Bench is displayed by clicking on the black “Info” icon.

The screenshot shows a light blue header bar with a house icon, a slash, "Workbenches", another slash, "CPW:000020, Ileum Normal and Crohns", and an info icon. Below this is a table with the following data:

Id:	CPW:000020
Title:	Ileum Normal and Crohns
Description:	Example Images from both Normal Ileum and Crohns Diseased Ileum
Owner:	mwicks23
Cell Height:	200
Cell Width:	200
Created:	2021-05-17 13:49:37
Last Modified:	2022-03-23 10:37:57

Figure 25 – The Bench Information Panel

3.5.1.2 The Active Collection

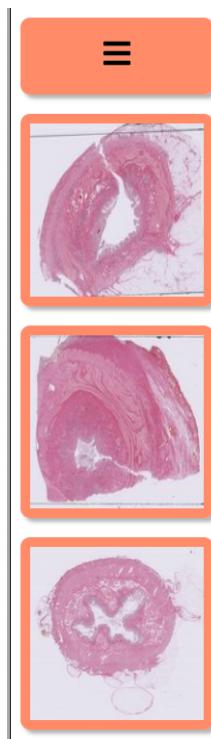


Figure 26 – The Active Collection on the Bench page

The Active collection is displayed as a vertical series of orange cells, with a Menu in the topmost orange cell, with each Image from the collection in the orange cells below.

The Collection Panel Menu is accessed by clicking on the “Hamburger” icon (3 short lines), offers the User a list of all the available collections, each with a red “Tick” icon, and the currently Active Collection topmost with a grey-green “Eye” icon.

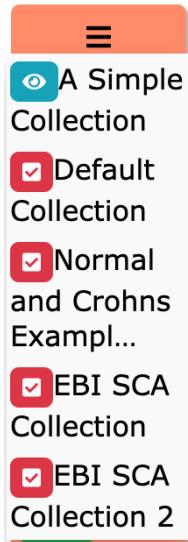


Figure 26 – The Collection Panel Menu



Clicking on the red “Tick” icon will select that collection as the new Active Collection.



Clicking on the grey-green “Eye” icon will show List Collection page, which lists all the images in the Active Collection.

3.5.1.3 The Bench

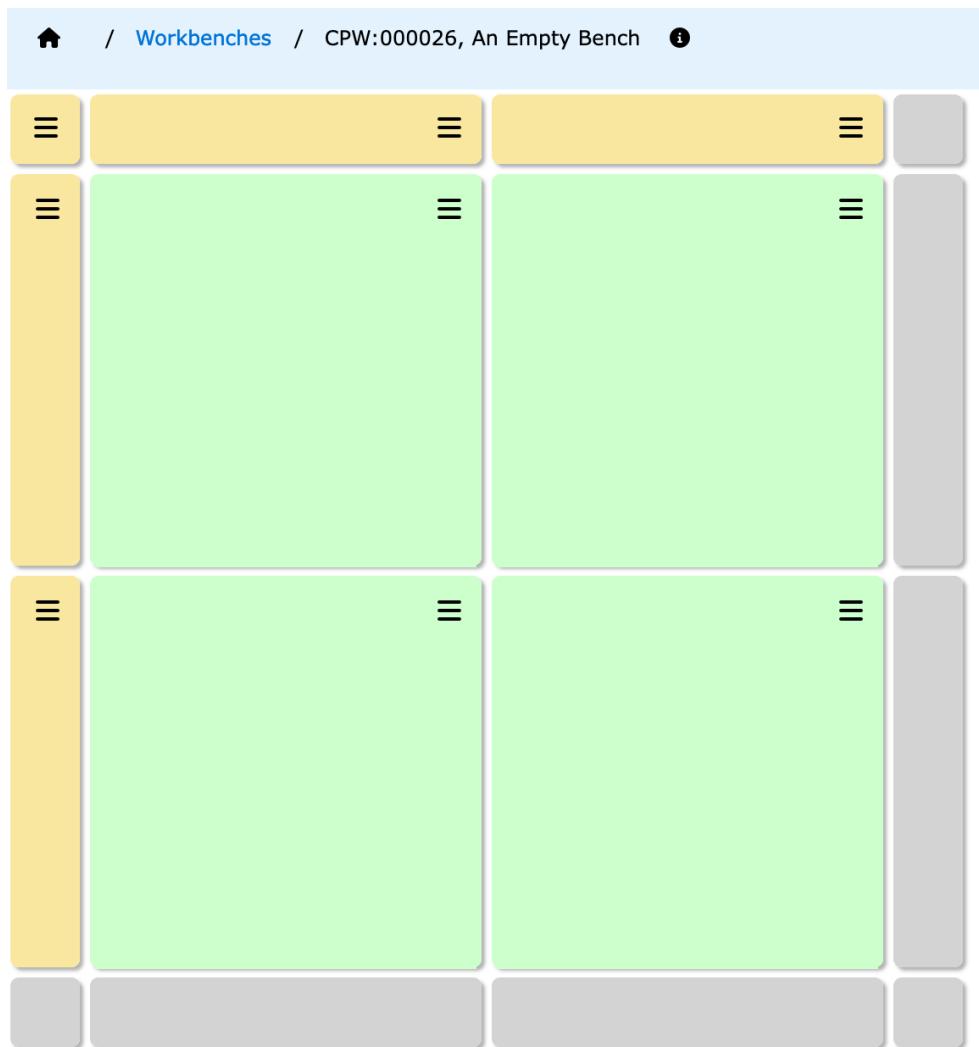


Figure 27 – An initial Bench, created using the system provided defaults

There are 4 types of Cell that make up a Bench:

- A Yellow “Master” cell,
- Yellow column and row “Header” cells,
- Grey “Footer” cells and,
- Green “Ordinary” cells.

3.5.1.3.1 The Master Cell



Figure 28 - The Master Cell

The “Master” cell provides the main control functions for the Bench, with these available via the master cell menu;

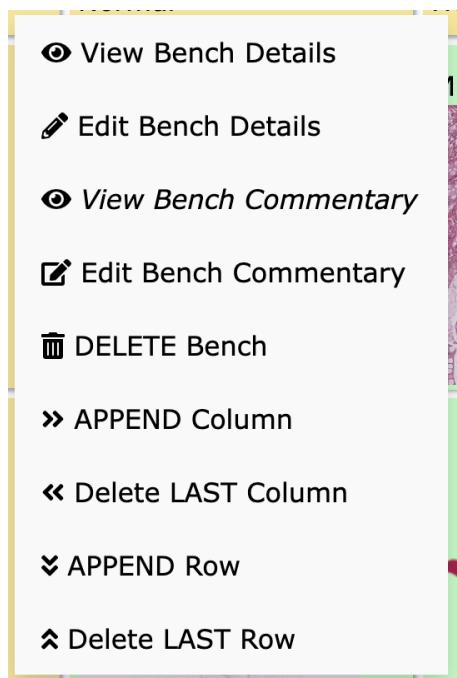


Figure 29 – The Master Cell Menu Items

The menu is accessed by clicking on the “Hamburger” icon, and offers the following functions:

- View Bench Details
 - Shows the information about the Bench, as provided on creation or at last edit (identical information is shown in the Bench Information Panel).
- Edit Bench Details
 - Allows the information about the Bench to be edited.
- View Bench Commentary
 - Displays a pop-up window with a summary of the commentary stored for this Bench.
- Edit Bench Commentary
 - Displays a page to allow more commentary to be added to the Bench Commentary.
- Delete Bench
 - Deletes the Bench after a confirmatory dialogue.
- Append Column
 - Adds a new column of cells after the right most column.

- Delete Last Column
 - Deletes the right most column of cells after a confirmatory dialogue.
- Append Row
 - Adds a new row of cells after the bottom most row.
- Delete Last Row
 - Deletes the bottom most row of cells after a confirmatory dialogue.

3.5.1.3.2 Row and Column Header Cells

Row and Column Header cells provide row and column level functions, as well as allowing the User to label Rows and Columns of Ordinary cells, with a Title and Description, as required.

Figure 30 – A Column Header Cell

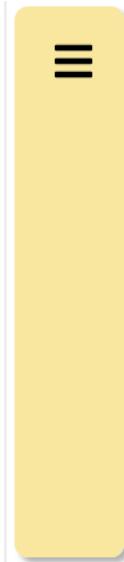


Figure 31 – A Row Header Cell

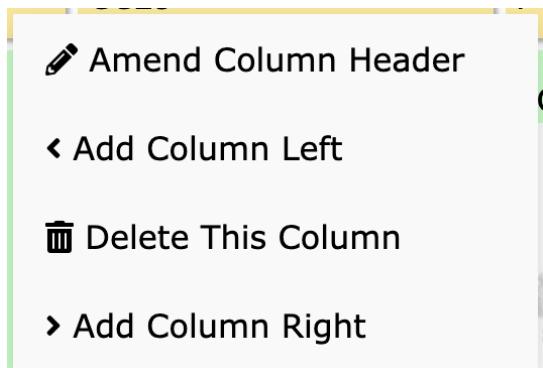


Figure 32 – Column Header Menu Items

The menu is accessed by clicking on the “Hamburger” icon, and offers the following functions:

- Amend Column Header
 - Allows a Column Title and Description to be added.
- Add Column Left
 - Adds a new column of cells to the immediate left of this column.
- Delete this Column
 - Deletes this column of cells after a confirmatory dialogue.
- Add Column Right
 - Adds a new column of cells to the immediate right of this column.

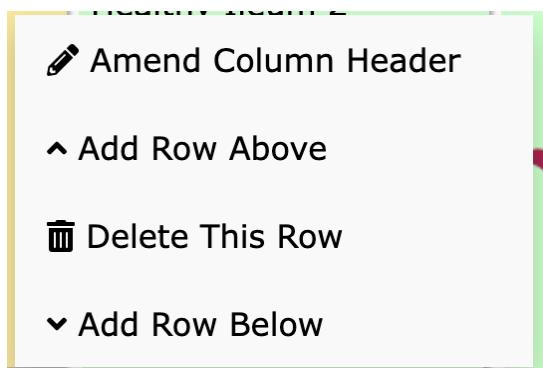


Figure 33 – Row Header Menu Items

The menu is accessed by clicking on the “Hamburger” icon, and offers the following functions:

- Amend Row Header
 - Allows a Row Title and Description to be added.
- Add Row Above
 - Adds a new row of cells to the immediately above this row.

- Delete this Row
 - Deletes this row of cells after a confirmatory dialogue.
- Add Row Below
 - Adds a new row of cells to the immediately below this row.

3.5.1.3.3 Footer Cells

Footer cells are simply place holder cells, that provide “targets” for the dropping of dragged cells. Green “Ordinary” cells can be dragged and dropped to expand the Bench, in addition to the functions available in the master cell, column header cells and row header cells.



Figure 34 – A Column Footer Cell

Dragging a green “ordinary” cell adds a row to the Bench, if the target of the drop is a row footer cell.



Figure 35 – A Row Footer Cell

Dragging a green “ordinary” cell adds a row to the Bench, if the target of the drop is a row footer cell.

3.5.1.3.4 Ordinary Cells



Figure 36 – An “ordinary” Bench Cell

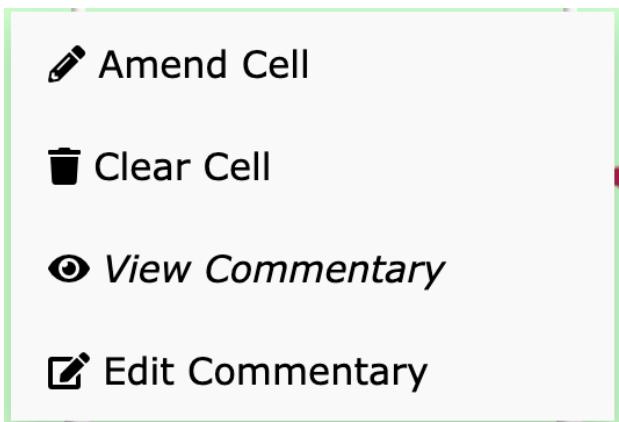


Figure 37 – An “ordinary” Bench Cell Menu

The menu is accessed by clicking on the “Hamburger” icon, and offers the following functions:

- Amend Cell
 - Displays the Amend Cell page.
- Clear Cell
 - If there is an image associated with the cell, this option allows the cell to be emptied with the image returning to the active collection.
- View Commentary
 - Displays the cell commentary as a Pop-up dialogue.
- Edit Commentary
 - Displays the Edit Cell Commentary page, to allow more commentary to be added to the Cell Commentary.

3.6 Adding an Image to a Bench

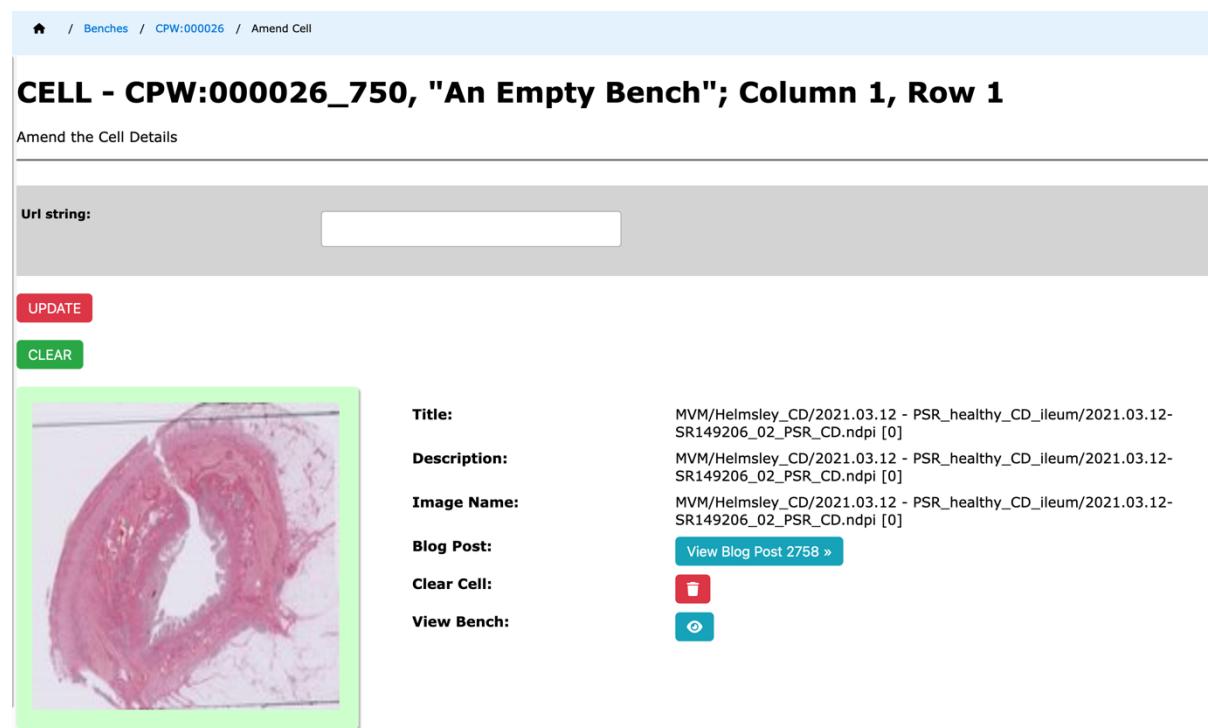
There are 2 ways to add an image to a Bench cell, Bench Drag'n'Drop and Amend Cell Drag'n'Drop:

3.6.1 Bench page Drag'n'Drop

The Bench page displays the currently active Collection and the Bench; Images can be dragged from the Collection to ordinary green cells in the Bench.

The User is prompted to “Import” the image, or “Close” the dialogue – Import being a confirmation, Close cancels the import.

3.6.2 Amend Cell Drag'n'Drop



The screenshot shows the 'Amend Cell' page for a specific cell. At the top, there's a navigation bar with icons for home, benches, and the current cell ID (CPW:000026). Below the navigation is the title 'CELL - CPW:000026_750, "An Empty Bench"; Column 1, Row 1'. A sub-header 'Amend the Cell Details' follows. On the left, there's a 'Url string:' input field with a placeholder and a red 'UPDATE' button below it. To the right of the input field is a green 'CLEAR' button. In the center, there's a large image of a histological section, which is a circular cross-section of tissue stained with hematoxylin. To the right of the image are several data fields: 'Title' (MVM/Helmsley_CD/2021.03.12 - PSR_healthy_CD_ilium/2021.03.12-SR149206_02_PSR_CD.ndpi [0]), 'Description' (MVM/Helmsley_CD/2021.03.12 - PSR_healthy_CD_ilium/2021.03.12-SR149206_02_PSR_CD.ndpi [0]), 'Image Name' (MVM/Helmsley_CD/2021.03.12 - PSR_healthy_CD_ilium/2021.03.12-SR149206_02_PSR_CD.ndpi [0]), 'Blog Post' (a blue button labeled 'View Blog Post 2758 »'), 'Clear Cell' (a red trash bin icon), and 'View Bench' (a blue circular icon).

Figure 38 – The Amend Cell page

The Amend Cell page offers a similar drag and Drop method, except to update a single cell from the currently active collection.

 The Cell Title and Description can be amended by hovering over each, and clicking on the “pencil” icon.

A URL Box and update button is provided as well, should the User want to use a URL from an OMERO server or the EBI SCA to update the cell directly.

In addition, Cells can be moved by “Drag and Drop” to rearrange the Bench.

3.6.3 Moving Cells within a Bench

An ordinary green Bench cell can be dragged and dropped onto another ordinary cell, with a confirmatory dialogue prompt.

The User is prompted to “Swap”, “Cut”, “Copy” the cell, or “Close” the dialogue.

- “Swap”
 - simply swaps around the source and target cells;
- “Cut”
 - moves the source cell to the target cell, overwrites the target cell, and empties the source cell;
- “Copy”
 - moves the source cell to the target cell, overwrites the target cell, but leaves the source cell in place;
- “Close”
 - cancels the import.

Dragging an ordinary green cell to a grey row footer cell will expand the Bench by another row, without a confirmatory dialogue.

Dragging an ordinary green cell to a grey column footer cell will expand the Bench by another column, without a confirmatory dialogue.

3.7 Adding Commentary

Commentary can be added to a cell or the Bench in general, by the Edit Commentary or Edit Bench Commentary Menu options.

Home / Workbenches / CPW:000020 / Bench Commentary

CPW:000020, "Ileum Normal and Crohns"

Bench Commentary

Browse the Bench Commentary

Date	Time	Author	Post	Action
2021-05-17	13:49:37	mwicks23	Example Images from both Normal Ileum and Crohns Diseased Ileum	View >
Date	Time	Author	Comment	Action
2021-06-01	09:55:27	marends	Normal terminal ileum section shows normal lymphoid aggregates as Mucosa Associated Lymphoid Tissue (MALT) usually located spanning both mucosa and submucosa. No abnormal inflammatory cell infiltrates.	View >
2021-06-01	09:57:01	marends	Ileum with Crohn's disease shows moderate to marked fibrosis involving mostly submucosa and serosa and also some increased fibrosis in the muscularis propria and in the (partly ulcerated) mucosa.	View >

Post a Comment:

Comment: Required.

[COMMENT](#) [Back](#)

Figure 39 – The Edit Bench Commentary page

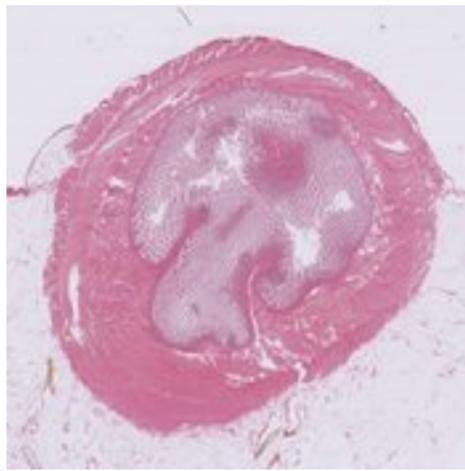
Home / Workbenches / CPW:000020 / Cell Commentary

CPW:000020_501, "Ileum Normal and Crohns"

Cell Commentary

Browse the Bench Commentary

Date	Time	Author	Post	Action
2021-05-17	13:51:00	mwicks23	Healthy Ileum 1	View >



No Comments!

Figure 40.1 – The Edit Cell Commentary page

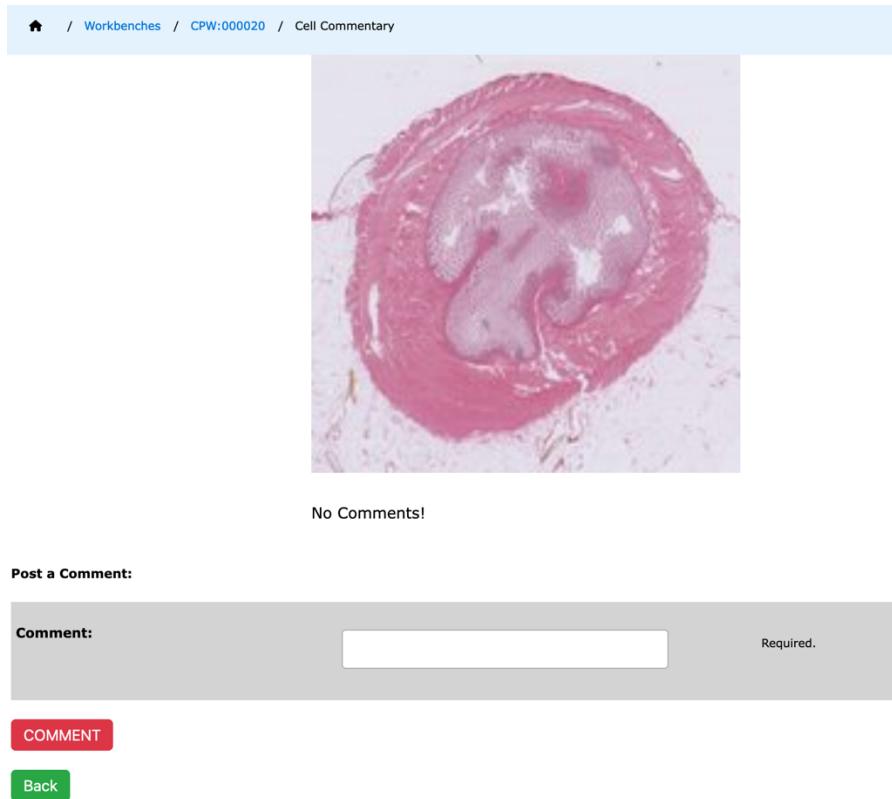


Figure 40.2 – The Edit Cell Commentary page

The User simply adds their comment in the grey box and presses the read “Comment” button. The page is updated in place.

These 2 pages are displayed in new browser tabs, to allow the user to easily reference the Bench as a whole on the previous tab, while adding a new comment to the commentary.

Closing these extra tabs is recommended after update, together with a refresh of the original Bench page.

3.8 A Quick Search for a Bench



Figure 40.3 – Main Menu Header Search Box

In the Main Header panel, there is a simple text search box, which takes the supplied text and returns a list of Benches, whose title, description, owner or authority contains the supplied string, to which the current User has access.

3.9 Searching for a Bench

From the Home page, the User must first click on the “Benches” main menu option, or the grey-green “Benches” button.

A screenshot of the 'Benches' list page. At the top, there's a breadcrumb navigation showing a home icon followed by '/ Benches'. The main title is 'Benches'. Below the title is a search bar with placeholder text 'Search the list of Benches'. Underneath the search bar are several filter input fields: 'Title:' (text box), 'Description:' (text box), 'Owner:' (dropdown), 'Authority:' (dropdown), 'Created before:' (text box), 'Created after:' (text box), 'Modified before:' (text box), and 'Modified after:' (text box). There are also 'Paginate by:' dropdowns set to '10' and buttons for 'Search' (green) and 'Clear' (red). The main content area displays a table of bench data. The table has columns: 'Action' (with icons for edit, delete, etc.), 'Bench Id' (sorted by ascending ID), 'Title', 'Created On', 'Updated On', 'Owner', and 'Authority'. Eight rows of data are listed, each corresponding to a different bench entry. At the bottom of the page is a navigation bar with links for '<<', '<', '1', '2', '>', and '>>'.

Figure 41 – The List Benches page

The List Benches page provides a search facility for the User to list Benches, depending on the following criteria:

- Title
 - The Title of the Bench contains the supplied sting in the matching text box.
- Description
 - The Description of the Bench contains the supplied sting in the matching text box.
- Owner

- The Owner of the Bench is chosen from the list of available users.
- Authority
 - The Authority assigned to the User over the Bench is chosen from the list of available authorities (“VIEWER” or “EDITOR”).
- Created Before
 - A Date before the Bench was created.
- Created After
 - A Date after the Bench was created.
- Modified Before
 - A Date before the Bench was last modified.
- Modified After
 - A Date after the Bench was last modified.

The Pagination amount for the List Benches page can also be controlled here, as well as providing controls for page selection:



- “<<”
 - Go to the First page
- “<”
 - Go to the Previous page
- <a number>
 - Go to page N
- “>”
 - Go to the Next page
- “>>”
 - Go to the Last page

Each Bench provides a number of icons to access the Bench:



View the Bench.



View the Bench Details.



Edit the Bench Details.



Delete the Bench.



View the Permissions for the Bench.



Create a new Bench can be created.

3.10 Searching for a Collection

From the Home page, the User must first click on the “Collections” main menu option.

The screenshot shows the 'Collections' page. At the top, there is a search bar with fields for 'Title', 'Description', 'Owner', 'Authority', and a 'Paginate by' dropdown set to 10. Below the search bar are two buttons: 'Search' (green) and 'Clear' (red). The main area displays a table of collections with the following columns: Action, Collection Id, Title, Activity, Images, Owner, and Authority. The table contains the following data:

Action	Collection Id	Title	Activity	Images	Owner	Authority
	5	Default Collection	False	34	mwicks23	OWNER
	11	Normal and Crohns Examples	False	14	mwicks23	OWNER
	14	EBI SCA Collection	False	3	mwicks23	OWNER
	15	EBI SCA Collection 2	False	15	mwicks23	OWNER
	16	A Simple Collection	True	7	mwicks23	OWNER

Figure 42 – The List Collections page

The List Collections page provides a search facility for the User to list Collections, depending on the following criteria:

- Title
 - The Title of the Collection contains the supplied sting in the matching text box.
- Description
 - The Description of the Collection contains the supplied sting in the matching text box.
- Owner
 - The Owner of the Collection is chosen from the list of available users.
- Authority
 - The Authority assigned to the User over the Collection is chosen from the list of available authorities (“VIEWER” only).

The Pagination amount for the List Collections page can also be controlled here, as well as providing controls for page selection:



- “<<”
 - Go to the First page
- “<”
 - Go to the Previous page
- <a number>
 - Go to page N
- “>”
 - Go to the Next page
- “>>”
 - Go to the Last page

Each Collection provides a number of icons to access the Collection:



View the Collection.



View the Collection Details.



Edit the Collection Details.



Delete the Collection.



View the Permissions for the Collection.



Create a new Collection can be created.

3.11 Sharing

Benches and Collections can be shared between Users.

All data is owned by an individual User, and that user can determine who can view or edit their data, be it a Bench or a Collection.

A User can add permissions for other users to view or edit a Bench owned by the User.

A User can add permissions for other users to view a Collection owned by the User.

3.11.1 Sharing a Bench

The List Benches page provides a sharing facility for the User to share a Bench



- Pressing the grey-green “people” icon next to a specific Bench, displays the Browse Bench Permissions page for that Bench.

A screenshot of a web application interface. At the top, there is a navigation bar with icons for home, list benches, and a specific bench's permissions. The main title is "Browse Permissions for Bench CPW:000020". Below the title, a sub-header says "Browse the list of Permissions for Bench CPW:000020". A table follows, showing the following data:

Action	Bench	Owner	Permitted	Authority
	CPW:000020	mwicks23	marends	EDITOR
	CPW:000020	mwicks23	rballock	EDITOR
	CPW:000020	mwicks23	guest	VIEWER
	CPW:000020	mwicks23	mglinka	EDITOR



Figure 43 – The Browse Bench Permissions page



Pressing the green “Plus” icon, allows the User to add new permission for other Users.

The New Bench Permission page allows the CPW use to choose a bench from a drop-down list of their collections, a user they wish to grant a permission to from a second drop-down,

and an authority level they wish to grant from a third and final drop-down (Viewer or Editor).

The Browse Bench Permissions page for that Bench is updated with a new Permission, specifying the Bench Title and ID, Owner (the User), Permitted (who this permission has been granted to), and to what Authority (“Viewer” or Editor).

Each Bench Permission provides a number of icons to manage the Bench Permission:



View the Bench Permission Details.



Edit the Bench Permission Details.



Delete the Bench Permission.

All the Bench Permissions of the User can be accessed from the User Main Menu option in the Main Header Panel.

3.11.2 Sharing a Collection

The List Collections page provides a sharing facility for the User to share a Collection.



Pressing the grey-green “people” next to a specific Collection, displays the Browse Collection Permissions page for that Collection.

Browse Permissions for Collection:000011

Browse the list of Permissions for Collection:000011

Action	Collection	Owner	Permitted	Authority
	11	mwicks23	marends	VIEWER

Figure 44 – The Browse Collection Permissions page



Pressing the green “Plus”, allows the User to add new permission for other Users.

The New Collection Permission page allows the CPW user to choose a Collection from a drop-down list of their collections, a user they wish to grant a permission to from a second drop-down, and an authority level they wish to grant from a third and final drop-down (for Collections only the View permission is available).

The Browse Collection Permissions page for that Collection is updated with a new Permission, specifying the Collection Title and ID, Owner (the User), Permitted (who this permission has been granted to), and to what Authority (“Viewer” only for Collections).

Each Collection Permission provides a number of icons to manage the Collection Permission:



View the Collection Permission Details.



Edit the Collection Permission Details.



Delete the Collection Permission.

All the Collection Permissions of the User can be accessed from the User Main Menu option in the Main Header Panel.

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