ImageLIMS Help Guide 1.0

Bioinformatics Facility at Fox Chase Cancer Center

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I.   Lab Users

1.0   What is the imageLIMS?

The Image Laboratory Information Management System (ImageLIMS) is a web-accessed software system that gives users the ability to do the following:

• Log in securely.
• Create and manage experiment protocols.
• Retrieve and manage samples.
• Store protocols, experiments, and images in a regularly backed-up archive space.
• Organize protocols, experiment results, and images into projects and give the project creator the ability to add project collaborators from the set of imageLIMS users.
• Search the archive for samples.

2.0   Logging into the imageLIMS

To log into the imageLIMS, go to the following URL:

http://your_host:your_port/lims/Login.jsp

Use your Fox Chase Cancer Center (FCCC) username and password to log into the system. If successful, you will be sent to the welcome page. If you cannot log in, you will see the message ' Username and Password are not matched, please try again.'

On the Welcome page, load your data from the database by clicking the **Load Data** button. After clicking the **Load Data** button, the next page is the Project page. This page lists all of the projects accessible to you.

The Project page lists the projects you created. The left top shows your user name and the **Logout** button, and the right top shows four short-cut menu buttons, including the **Help** button, and the current date. The imageLIMS pages will contain a **Back** button, which will allow you to move back in imageLIMS order rather than browser order. In the lower part of the page, you will see a list of other projects not created by you, but to which you are assigned as the Co-Owner. You can view the contents of these projects, but you cannot modify them. From this page, you can also create new projects, or delete any existing projects that belong to you.

3.0   Search Samples

From the project page, experiment page, and protocol page, you have the ability to search for samples that are visible to you. You can search for the samples by any combination of Image_Name, Tumor_Name, Tissue_Name, Protein_Name, Stain_Name, and Cell_Name by the Boolean operation of either <u>AND</u>, or <u>OR</u>. If anything matches, the return page provides you with the links to the protocols and projects.

Enter any search criteria and press **Search**.

If no criteria or incorrect information is entered, then you will receive a "Nothing found" message.

If there is a match, the matched sample(s) will display. You can view the protocol and/or project it belongs to by clicking on the name of the project or protocol you want to see.

4.0   Protocols

The **Protocol** button on the menu links to the protocol page. Similar to the Project page, there is a list of previously created protocols. You can view, update, delete, or publish/hide the protocols. Selecting **Publish** means it will be visible to the public, and **Hide** means only you can see it. The Public Protocols section also lists protocols published by other imageLims users. You are only able to view and use, not modify, protocols belonging to other users.

4.1 Selecting a Protocol

Click the **Protocol** menu button to get to the Protocol page. You can use your own private protocols, or any of the protocols listed under Public Protocols.

Select the protocol you want to view and click on the name.

The protocol and its information will be displayed.

4.2 Creating a Protocol

Click the **Protocol** menu button to get to the Protocol page.

Enter a protocol name, and click the **Create** button.

The new protocol will appear in the Private section with options to publish or delete it. To publish, click **Publish**.

The published protocol will have a check beneath the Published header and you will now have the option to **Hide** it. Once published, other imageLIMS users will be able to access your protocol; however, the name will remain in the Private Protocols section.

4.3 Adding Samples to a Protocol

You can create (or remove) samples for protocols.

Click the name of protocol you generated, or any of the previously generated protocols.

When you add new samples, you will see a table listing menu items to define your sample. To see their details (description), move your mouse over the title. If the items are not listed in the system, click the link **Add temporary items to the List**; then you can add your own to the list. (They will be labeled in

red.)

Select the items that you need for your sample and press **Add New Sample**.

The new sample is listed at the bottom of the page under the Sample List for Protocol: [name]. It will also have the option to delete the sample.

5.0   Projects

Select a project, or create a new project. The Project page allows you to create, delete, and modify projects. You can also search samples from this page.

5.1 Creating New Projects

To create a new project, make sure you are on the Project page, then enter the project name in the 'Create New Project' input field and click the **Create** icon.

The newly created project will appear beneath the 'Project Name' heading. Now you can add an imageLIMS user as a Co-Owner, or remove one. Click on the name of the project you want to modify.

5.2 Adding Co-Owners

Click on the **Add/Remove** CoOwner button in the upper left corner. (If you are not already on the Project page, click **Project**, then press the name of the project you wish to modify.)

Select the name of the person you wish to add (or remove) and click the **Add** (or **Remove**) button.

The name of the person added will now appear in the 'Project Co-owners' column. Click on the **Project** button to return to the Project page.

The name of the co-owner will appear on the Project page.

6.0   Experiments

You can define and create experiments from the Project page.

Select a project and click on the name to reach the Experiment page.

When creating an experiment, you must select a protocol, if the necessary protocol does not exist then create one first (see 4.2 Creating a Protocol). Type in the name of the experiment and complete the other selections for Microscope, TimeCourse, and Zseries. Press the **Create Experiment** button.

The new experiment will now appear on the Experiment List for that project. Following the experiment

link, you will be able to append images here. For details, see 7.0 Adding Images.

7.0   Images

7.1 Adding Images

For each experiment, you can associate images with samples. You can add as many images as you want to the same sample. The image(s) must be jpeg, tiff, pic, or stk only.

If you are not on the experiment page, first click Project to get to the project page, then select the project where your experiment is and click the project name. You will now be on the page where experiments are listed. Click the name of the experiment where you want to add the image(s).

Click the **Add Image** link beneath the Image List heading to reach the Upload Image page.

On the Upload Image page, enter the parameters, and select an image(s) [jpeg, tiff, pic, and stk only] from your local machine by pressing the **Choose File** button. Then click the **Upload** button.

If the upload is successful, you will be sent back to the sample page, and an image icon with the image name will show up inside that sample. If you want to see the image immediately, click the **Process** icon to process this image.

Once the image is processed, a thumbnail will be displayed inside the sample. Clicking the thumbnail allows you to view the image in your web browser. The Delete button will remove the image from the sample.

7.2 Downloading Images

From the Image page, you can also download all image data for this experiment in a single compressed package grouped by the samples. Click on the thumbnail to get to the Download page. You can download the original image data by clicking **Download Image file [name]**; or download all layers of the image in jpeg format in a single package onto your local desktop by clicking **Download Jpeg Package**. Use the unzip tool to unzip it, use any web browser to open the index.html file.

7.3 Merging Images

From the Download page, you can view and merge images. You can merge multiple image pages (2 or 3 for this program) together into a single image. To begin, return to the Image page. (If you are not already on the page, click **Project** to get to the project page, then select the project where your experiment is, and click the project name. On the Experiment page, click the name of the experiment.)

 Click the sample thumbnail that you wish to view or merge.

From the Download page, select the pseudo color of the image and press **View Image**. If the image is a single page image, it will be displayed directly. If the image has multiple pages, you can view the image page by page, or all pages in the animation movie.

Click **Select** to choose the image for merging, then **Continue**. This will also return you to the Image

page, where the process repeats until you have all of your layers.

Click the sample thumbnail that you wish to merge.

Select the color of the image and press **View Image**.

Press **Continue**. This will return you to the Image page.

Once you have added all of the images you want to merge, press the **Merge** button.

The merged picture will be displayed.

II. Admin Users

- 1.0 imageLIMS Admin Roles
- 2.0 User Management
    - 2.1 LIMS Users
- 3.0 Lab Management
    - 3.1 Sample Criteria
    - 3.2 Experiment Criteria
    - 3.3 Image Criteria

1.0   imageLIMS Admin Roles

The main role of the imageLIMS admin is to set and manage common data elements used by all users, process the non-processed images in the system. The admin can also communicate with other lab users, and view the experiment and sample information for all users.

To log into the imageLIMS as an admin, go to the following URL:

http://your_host:your_port/lims/Login.jsp

Use the admin username, *root*, and your Fox Chase Cancer Center (FCCC) password to log into the system. If successful, you will be sent to the welcome page. If you cannot log in, you will see the message 'Username and Password are not matched, please try again.' Contact your configuration administrator.

On the Welcome page, load your data from the database by clicking the **Load Data** button. After clicking the **Load Data** button, the next page is the Main page. This page has links to the **LIMS Users** list and **Convert Images** pages, and all of the buttons to add/delete data options for protocols and experiments.

2.0   User Management

2.1 LIMS Users
Click on **LIMS Users** to see the list of people who have access to the system.

The page will display the users.

3.0   Lab Management

3.1 Sample Criteria
The admin is allowed to add proteins, tissues, stains, cells, and tumors to the system for project samples.

Click on the **Protein** button. You can enter the name and description of a protein, and add it to the list for creating project samples by pressing the **Add** button.

Click on the **Tissue** button. You can enter the name and description of a tissue, and add it to the list for creating project samples by pressing the **Add** button.

Click on the **Stain** button. Enter the name and description of a stain, and add it to the list for creating project samples by pressing the **Add** button.

Click on the **Cell** button. You can enter the name and description of a cell, and add it to the list for creating project samples by pressing the **Add** button.

Click on the **Tumor** button. You can enter the name and description of a tumor, and add it to the list for creating project samples.

3.2 Experiment Criteria

The admin is allowed to add or delete microscope settings to the system for project experiments.

Click on the **Microscope** button. Enter the description for a setting, and add it to the list for creating project experiments by pressing the **Add** button.

3.3 Image Criteria

The admin is allowed to add or delete image settings to the system for project samples.

Click on the **LightColor** button. You can enter the description for a setting, and add it to the list for creating project experiments by pressing the **Add** button.

Click on the **LightColor** button. Enter the description for a setting, and add it to the list for creating project experiments by pressing the **Add** button.