

Access Overview

Under the **Access** tab on the navigation menu, users have the option to **Upload Data** and/or **Download Data**. Guest users (i.e. those without a SysBioCube account) will only see the [Download Data](#) option, but registered users (i.e. those with a SysBioCube account and whom are logged in), will also see the [Upload Data](#) option. The following provides an overview of how to navigate through these two features.

It is important to remember that the speed with which files will upload/download is directly related to the bandwidth accessible to the user, and larger files will take more time. File size information for those files stored in the SysBioCube can be accessed through the **Explore > Data Overview** features. To determine file size prior to upload, reference the file properties.

Download Data

Guest users have the ability to download publicly released data sets. A registered user, once logged in, has access to private project data sets based on their role within a project(s). Downloading files through **Access** is optimal when a user would like to download full data sets. For individual file downloads, it is recommended a user download the file(s) through the **Explore > Data Files** features. Refer to the **Explore SOP** under **Documents** on the SysBioCube for more details.

A screenshot of the "Data File Download" selection menu. It has two dropdown menus: "Study" (set to "Admin") and "Species" (set to "All"). Below each dropdown is a date range selector with "From" set to "2010-01-01" and "Until" set to "2019-04-17". To the right of the date range is a "Submit" button and a "Reset" button. A tooltip box titled "Instructions" appears, stating: "Please define your data set on the left and click 'Submit'." There is a small "x" icon in the top right corner of the tooltip box.

Figure 1. Data File Download Selection Menu

To download a file(s), select the appropriate **Study** and **Species** options from the drop down menus (Figure 1). The available options can be accessed by clicking the arrow on the right side of the data field's box. By default, the dates are set as 01 January 2010 to present day, but dates can be adjusted by either typing in new dates using the format YYYY-MM-DD, or clicking through the dynamic calendar icon. Once the correct dates are selected, click **Submit**.

All Available Data for Cancer in Human		
	STRAIN	all
	GROUP_NAME	Lung Cancer
	TISSUE	Lung
mRNA_Microarray	Analyzed	1
	Normalized	1
	Raw	1
Methylation	Analyzed	1
	Raw	1
MiRNA_Microarray	Analyzed	1
	Normalized	1
	Raw	1

Figure 2. Data File Download Data Matrix for Cancer in Human Project

Upon submission, the page will update with a data matrix (Figure 2) dynamically built for the selected project and user. Note that archived files are not included in these results. In the above example, *Cancer* and *Human* were selected for **Study** and **Species**, respectively, so the resulting information is appropriately entitled “*All Available Data for Cancer in Human*”. Select one or more of the blue boxes by clicking on each box; the box will change colors once selected. Once all desired files are selected, click **View Files**.

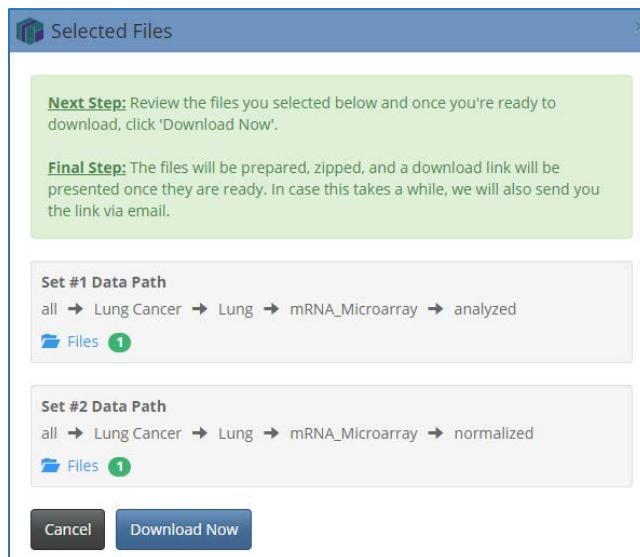


Figure 3. Sample File Download Pop-Up Window

A user will then be prompted with a window (Figure 3) noting that files will be prepared, zipped and then a download link will be provided. This link will also be emailed to registered users that are logged in. Data file processing will begin once the user clicks **Download Now** in the prompt.

Upload Data

Registered SysBioCube users can upload files to their authorized projects. The upload form gathers minimal information on the file metadata, which allows the SysBioCube to categorize, organize and provide fine-grained access control on each of the uploaded files. File metadata is then available to users in the **Data Files** tab of the **Explore** panel, as well as part of the data matrix for **Downloading Data** (as described previously).

The SysBioCube is a platform for sharing of data across complex teams. Currently, nineteen different file types can be uploaded to the repository:

Category	Allowable File Extensions
Graphics	bmp, gif, jpg, jpeg, png
MS Office	csv, doc, docx, xls, xlsx
Video	mp4
Text	pdf, txt
Data	biom, fasta, idat, mpa, ped, qual

Moreover, the SysBioCube is an adaptable capability and can accept data types beyond this list. If you are interested in uploading a new data type, contact SysBioCube@nih.gov to confirm compatibility with the systems security features.

To upload a file, fill in the metadata fields of the **Data File Upload** form using a combination of dropdown and free form options (Figure 4).

- The **Study**, **Species**, and **Strain** fields can only be filled in using the dropdown selection menu. To have new options added to these lists, contact the SysBioCube team (SysBioCube@nih.gov).
- The **Group**, **Experiment**, **Data Type**, and **Tissue** metadata fields are populated with previously selected options, but new options can be added by selecting **Other**, then filling in the text box. PIs are encouraged to discuss metadata field categories at the initiation of a project, to ensure all team members are categorizing files in a similar manner to allow for integration within the system.

Before selecting files for upload, PIs are strongly encouraged to designate a file naming convention for all team members to follow. The only requirement for the SysBioCube system is that file names not be duplicated, however, a clear file naming convention will ensure the longevity of the files for use by others in the future. The following is an example of a file naming schema:

*Date (YYYYMMDD)_Study_Species_tissue_group_assay_data type¹.xxx
20190115_ptsd_human_blood_C57_txp_raw.txt*

¹Data types could include: Raw, Normalized, Analyzed, indicative of the state of the data.

Data File Upload

The screenshot displays the 'Data File Upload' interface. It consists of several sections:

- Please Select Project Information:** Includes dropdown menus for Study (Admin), Species (All), Strain (--), and Group (--).
- Please Select File Information:** Includes dropdown menus for Experiment (--), Data Type (--), and Tissue (--).
- Analyst Information:** Fields for Name and Email.
- Institute & Location:** Fields for Name and Email.
- Principal Investigator:** Fields for Name and Email.
- Upload Files:** A section for uploading data/analysis files. It includes a 'Select files' button, a message to add files to the queue, a 'Drag files here.' area, and an 'Add Files' button.
- File Queue:** A table showing the uploaded files, with columns for Filename, Status, and Size. One entry is shown: 0% 0 kb.

Figure 4. Data File Upload Page with Metadata Fields