ezEML+MOTHER Overview Version 1.1

ezEML+MOTHER is a tool for assisting scientists with the specification of the metadata that must be supplied with the histology images to be shared. This tool leverages the ezEML tool, which was created by the Environmental Data Initiative (EDI), for data provenance and adds metadata specific for MOTHER. The use of the ezEML+MOTHER Web application requires a login, which can be automatically requested with email verification required. Then you can work on documents across sessions and can submit an image with metadata to MOTHER.

Navigation

Use the top navigation bar to create or open a document, or to upload/download an XML file.

Use the left navigation bar to enter in the various metadata. The left navigation bar indicates the high-level topics within the tool. Essentially, the items above the first line are the topics leveraged from ezEML, with the exception of Image, which has been redesigned for MOTHER. The Donor and Immunohistochemistry topics are specific to MOTHER.

NOTE: Items marked with an asterisk are required.

Title*: A unique title is required for your slide.

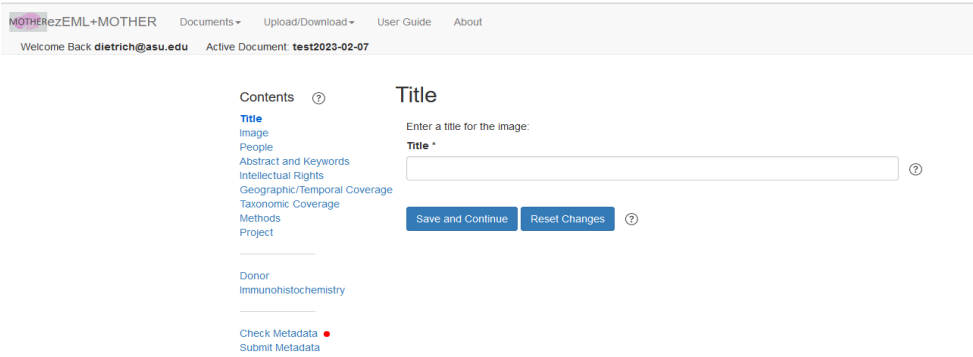
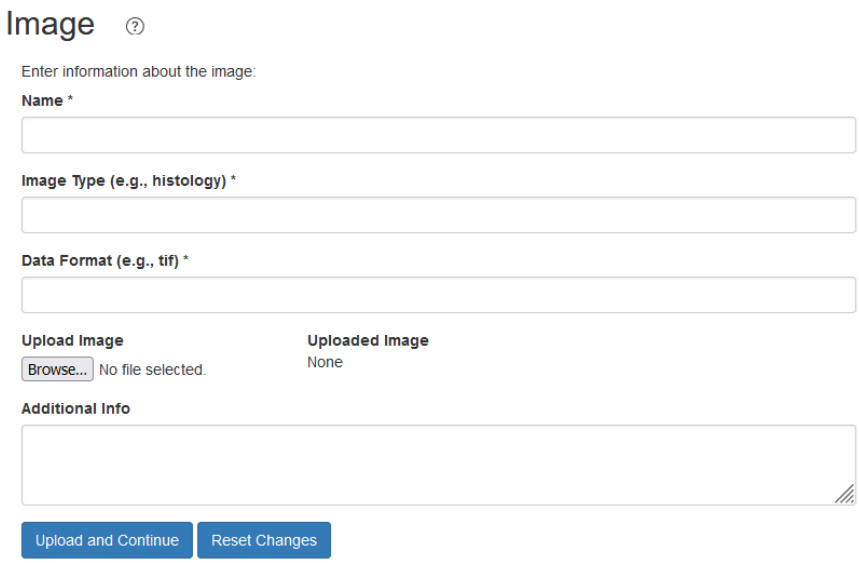


Image*:

The Name and Data Format fields will be automatically filled by the selection of the Upload Image. Image Type defaults to histology. Additional Info is a text area for any additional information to share about the image that is not in the Donor or Immunohistochemistry forms. For example, any citation to a published paper or measurements of the donor taken. Using a key:value syntax separated by ; opens up the possibility of accessing this information computationally in the future.



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People*: At least one creator and at least one contact is required. Must include at least one of the following: Last name, Organization, or Position Name.

- Creators: an author of the data, i.e. a person responsible for intellectual input into its creation
- Contacts: the designated contact for the data manager
- Associated Parties: involved with the data in some way, e.g., technicians, students, assistants
- Metadata Providers: producing or providing provided the metadata content

Abstract and Keywords:

- Abstract: include any information that does not fit into the structured metadata
- Keywords: terms in support of keyword search in MOTHERDB, e.g. any term describing treatment, disease, pathology, phenotype, toxicology,or toxin/toxicant exposure

Intellectual Rights*: CC0 or CC BY can be chosen with a radio button. Other licenses can be specified.

Geographic/Temporal Coverage: Specifications can be included if applicable for data related to the geographic or temporal information for the donor animal

Taxonomic Coverage*: Required specification of the taxa for the donor animal; Supports lookup in select taxonomic authorities based on the Taxon Scientific Name

Methods: Method steps are descriptions of specific steps of the method employed when collecting data. They are intended to be descriptive, i.e., human-readable rather than machine-readable. These may include text descriptions of the procedures, experiment, relevant literature, software, instrumentation, source data and any quality control measures taken.

Project: Documents the research context with a required title and optional abstract, and can include the specification of project personnel with various roles, funding awards, and related projects.

Donor*: Details information regarding the donor animal, including its life stage, reproduction cycle type, and stage of cycle. Also provides details on the histology slide, such as fixation, stain, and section thickness.

Immunohistochemistry: If the image is immunohistochemistry, provide the target protein, detection method, as well as primary and secondary antibodies.

Check Metadata: Checks the completeness of the metadata
red: errors exist; orange: warnings exist; green: no warnings or errors

Submit Metadata: Submits the metadata and the image file for curation into MOTHER. Please download the zip file for your records.

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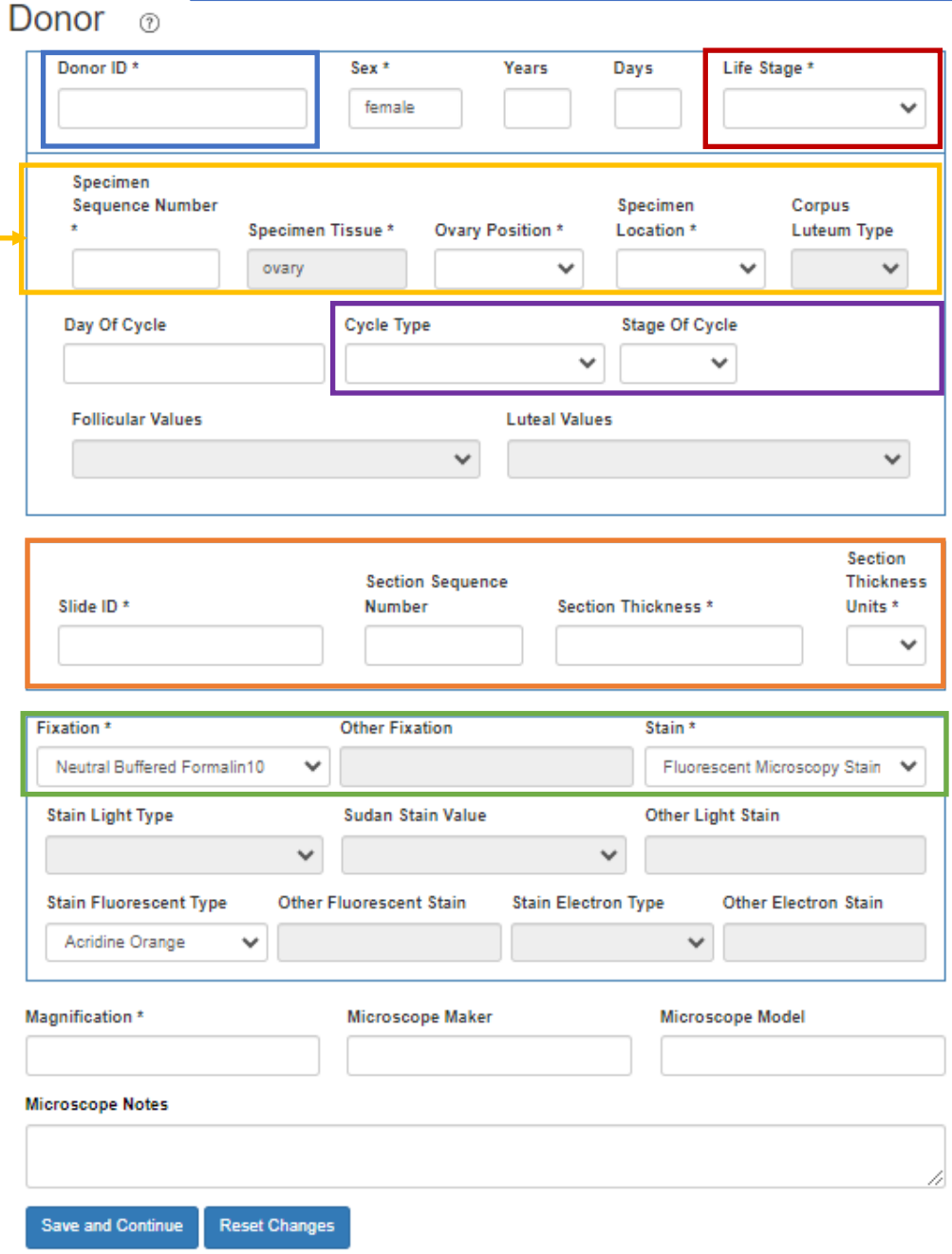
Donor ID must be a unique designation of the donor animal for the ovary image across *all* donors. Thus, this is not a simple number but should be an encoding of the Lab_GenusSpecies_AnimalID or Lab_GenusSpecies_date_sequence that uniquely identifies the donor.



Life Stage values are currently for mammals: *fetal, neonatal, prepubertal, pubertal, adult, aging*. However, a value of *unspecified* is included, if needed.

MOTHER needs input for life stages for other species.

Cycle Type values with stages to choose are currently: menstrual, estrous. Choose *other* to enter a stage manually.

MOTHER needs cycle types & stages for other species.

Slide ID: must be unique within Donor ID and Specimen Sequence Number. If you are contributing 2 images from the same physical slide, use a section number to uniquely identify, e.g. 1A, 1B

Section Sequence Number: only if submitting a collection of images allowing for a 3d reconstruction

Section Thickness Units: Microns, NM

Fixation and **Stain** are required. Selections enable/disable dropdowns.

Fixation: *Neutral Buffered Formalin 10, Paraformaldehyde, Davidsons, Neutral Buffered Formalin5 acetic Acid, Bouins, Other*

Stain: *Light, Fluorescent, Electron*

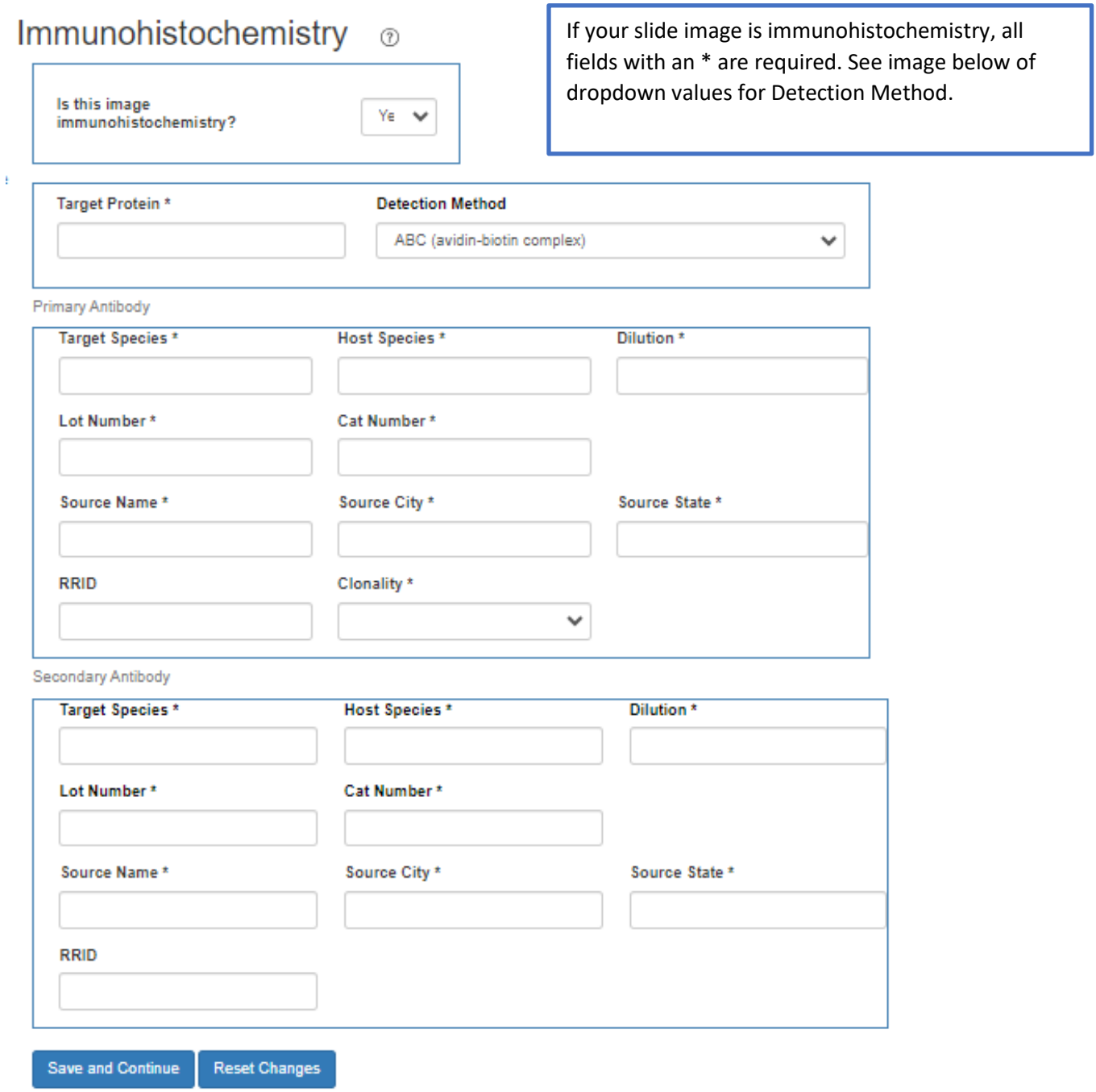
Specimen Sequence Number: This is typically 1, unless there are multiple ovaries collected for the same donor.

Ovary Position: *Left, Right, Unspecified*

Specimen Location: whole ovary, ovarian cortex, ovarian medulla, follicle, corpus luteum, unspecified

MOTHER needs input for other species for specimen location.

If your slide image is immunohistochemistry, all fields with an * are required. See image below of dropdown values for Detection Method.



Detection Methods Dropdown: