

# **ezEML+MOTHER User Guide**

## **Version 1.2.1**

### **Introduction**

Sharing an ovary histology image with MOTHER requires the submission of its associated metadata. The Web-based tool, called ezEML+MOTHER, assists the user with the specification of the metadata. This tool leverages the ezEML tool, developed by Environmental Data Initiative (EDI), for the data provenance of the image (e.g., Contact, Project, Intellectual Rights, etc.) and adds specific metadata for MOTHER. Using ezEML+MOTHER, the image with its metadata can be submitted to the MOTHER project one image at a time. Alternatively, to share a collection of histology images, consider creating a project on the Open Science Framework (OSF) at [osf.io](https://osf.io) and uploading the images and metadata to a project there, which creates an additional opportunity for discovery of your data. Let MOTHER know when you are ready to share your OSF project. MOTHER can then upload all images and metadata for your project, provided that you add [motherdbosf@gmail.com](mailto:motherdbosf@gmail.com) to the project with read and write privileges.

## Create an ezEML+MOTHER account

The use of the ezEML+MOTHER Web application requires a login, which can be automatically requested with email verification required. This login allows you to work on documents across multiple sessions, in addition to being able to upload an image with its associated metadata. If you have not created an account with ezEML+MOTHER, click “Log In” to be redirected to the login page, then click “Sign up” below the continue button. After entering an email and password, you will receive a confirmation email to complete the process.



### Welcome

Log in to dev-lg5ivznk to continue to MotherDB.



[Forgot password?](#)

Continue

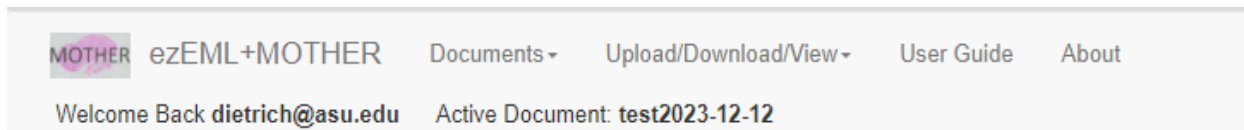
Don't have an account? [Sign up](#)

## Navigation in ezEML+MOTHER

You can think of using ezEML+MOTHER as filling out one big form that's organized as a number of separate content pages. The **ezEML+MOTHER** link at the top left of each page serves as a "Home" button. Your work is saved in the context of a Document, which can be worked on across sessions. There is a navigation toolbar at the top of the page to essentially navigate documents, and a content navigation on the left-hand side of the page to navigate the content pages within a document.

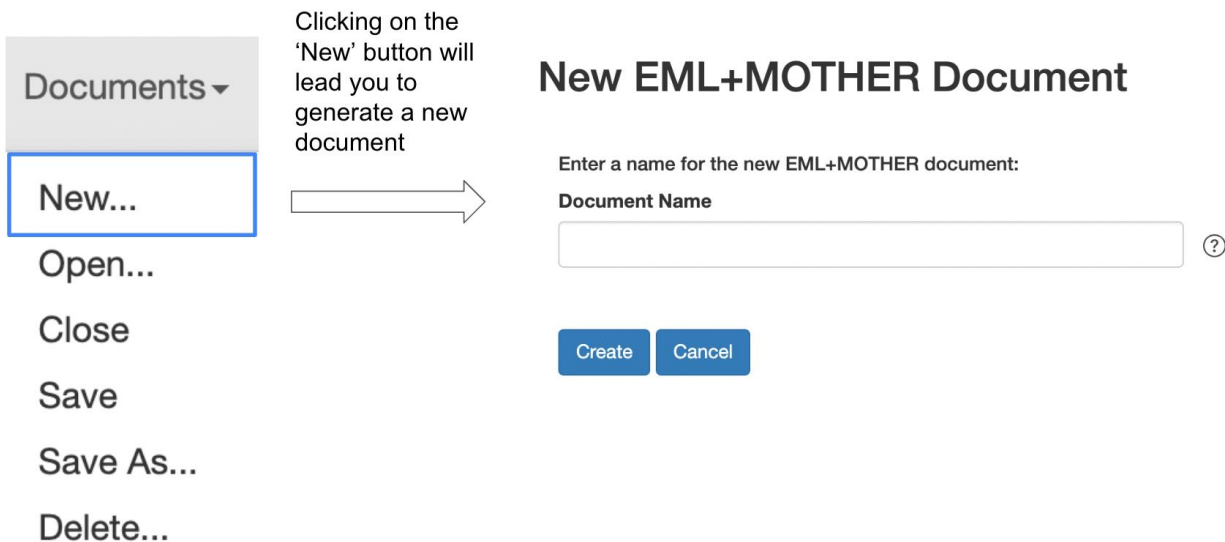
### Top Navigation Toolbar

The top toolbar in ezEML+MOTHER provides access to creating or opening **Documents**, **Upload/Download/View** of xml metadata files, the **User Guide** for the tool, and an **About** informational page.



### Documents

Select *New* to create a new document, which will ask for a name for the document. *Open* will open an existing document that you have already saved in ezEML+MOTHER. *Close* exits out of the current open document. *Save* will save the current open document as is, while *Save As* will allow you to change the current document name.

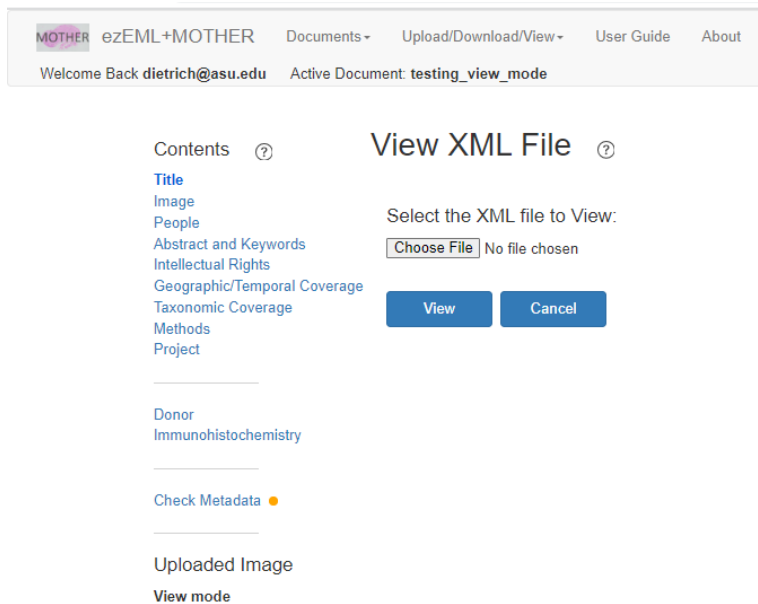


The name of the document will be set as the name of the project folder when downloaded. Thus, only letter, digits, \_, and - are allowed. No spaces or special characters.

## Upload/Download/View

The metadata generated by the tool consists of an XML file that conforms to the requirements of the Ecological Metadata Language (EML) for data provenance and MOTHER's additional metadata requirements. Although your document will be stored across sessions, you may want to *Download* the XML metadata as a backup or as a template for slides from the same donor animal. For subsequent slides, you can create a *New* document and *Upload* the downloaded metadata for that donor. The upload will automatically complete the form with the saved information, requiring you to only enter the title and slide id for that image along with uploading the new histology image.

The **View** option allows choosing a file to only view its metadata. First, create a New document in which to view the XML file. Select **View XML File** from the Upload/Download/View dropdown. **Choose File** to select the file to view, then **View**. The tool enters view mode, disabling any edit features. A "View Next" button will be available to navigate the contents of the XML file.



## User Guide


The ezEML+MOTHER User Guide is essentially this document broken down into sections to access within the tool. There is also a quick overview for ezEML+MOTHER.

## About

About provides a brief overview of the background of ezEML+MOTHER.

## Navigation of Contents

The left navigation bar indicates the high-level content pages within the tool. Essentially, the items above the first line, are the topics leveraged from ezEML, whereas the Donor and Immunohistochemistry pages are specific to MOTHER.

Contents 

Title

Image

People

Abstract and Keywords

Intellectual Rights

Geographic/Temporal Coverage

Taxonomic Coverage

Methods

Project

---

Donor

Immunohistochemistry

---

Check Metadata 

Submit Metadata

As you move from page to page using the **Save and Continue** button, your changes are automatically retained. There is a **Cancel** button if you decide to exit the page without saving. You can select a **Contents** topic on the left to jump to that page. Just make sure that you have saved any changes on the current page. It's usually best to refrain from using your browser's forward and back buttons. Using them may cause you to lose unsaved edits.

### Required Fields \*

On each content page, the fields on the form that are required are marked by an asterisk (\*).



### Help Hints

There are also helpful hints on the form that can be selected for reminders, which are indicated by the ? symbol enclosed in a circle.

## Title

EML requires that there is a unique title for each slide. Thus, you should use a descriptive title that also includes information about the lab, the species, and the unique donor and slide designation.

Examples:

- Zelinski Lab: Rhesus macaque 14736 Unspecified Ovary 020a
- Busycotypus canaliculatus reproductive data, Nantucket Sound, 2020: BC\_2020-08-25\_2\_F 002

## Title

Enter a title for the image:

Title \*



Save and Continue

Reset Changes



## Image

The histology image is uploaded on this page from your local computer. The **Name** and **Data Format** are automatically filled in based on the name of the file and its file extension that you upload, under **Upload Image**. The **Image Type** is by default *histology*, since MOTHER is only accepting histology images at this time. Note that **Additional Info** is an optional field where you may want to include information about the image that is not already specified as part of MOTHER on the Donor and Immunohistochemistry forms.

For example, are there any standard measurements of the donor taken that you have as part of your own metadata? The following example shows measurements typically taken for whelk using a JavaScript Object Notation (JSON)-like syntax, which uses **key: value** pairs separated by semicolons. The use of this format instead of free-form text opens up the future possibility of accessing this information computationally. Note that units have been included as part of the key.

Body Weight (g): 96.75; Gonad Weight (g): 2.13; Shell Length (cm): 13.5; Shell Width (cm): 8.9; Gonad Length (cm): 4

As another example, is this image part of a published study? If so, you can include a citation to the paper here using an appropriate citation style for your discipline.

Zelinski-Wooten, M. B., Hess, D. L., Wolf, D. P. Stouffer, R. L. (1994). Steroid reduction during ovarian stimulation impairs oocyte fertilization, but not folliculogenesis, in rhesus monkeys. *Fertility and Sterility* 61, 1147-1155.

## Image ?

Enter information about the image:

Name \*

Image Type (e.g., histology) \*

Data Format (e.g., tif) \*

Upload Image

No file chosen

Uploaded Image

None

Additional Info



Upload and Continue

Reset Changes

# People

There are many types of people that can be associated with an histology image: Creators, Contacts, Associated Parties, and Metadata Providers. At least one Creator and one Contact is required by EML, while Associated Parties and Metadata Providers are optional. All People share a similar form as shown below, except that an Associated Party has an additional **Role** field. The EML specification requires the specification of at least one of the following fields: Last Name, Organization, or Position Name.

*MOTHER strongly recommends providing the first name and last name with organization for any person entered. For a scientist, it is also highly recommended to include their ORCID for unique identification. The MOTHER database currently stores the contact, metadata providers, and investigative personnel on a funding award associated with the image. The Web search displays the information for the contact.*

*At least one of the following is required: Last Name, Organization, or Position Name.*

|                            |                          |  |
|----------------------------|--------------------------|--|
| Last Name (Recommended)    |                          | ORCID ID (Recommended)                                 |
| <input type="text"/>       |                          | <input type="text" value="e.g., 0000-0002-5143-7857"/> |
| Salutation (Optional)      | First Name (Recommended) | Middle Name/Initial (Optional)                         |
| <input type="text"/>       | <input type="text"/>     | <input type="text"/>                                   |
| Organization (Recommended) | Org ID (Optional)        | Org ID Type (Required for Org ID)                      |
| <input type="text"/>       | <input type="text"/>     | <input type="text" value="v"/>                         |
| Position Name              |                          |  |
| <input type="text"/>       |                          |  |

|                      |                       |                        |
|----------------------|-----------------------|------------------------|
| Email (Recommended)  | Online URL (Optional) |                        |
| <input type="text"/> | <input type="text"/>  |                        |
| Address 1 (Optional) |                       |                        |
| <input type="text"/> |                       |                        |
| Address 2 (Optional) |                       |                        |
| <input type="text"/> |                       |                        |
| City (Optional)      | State (Optional)      | Postal Code (Optional) |
| <input type="text"/> | <input type="text"/>  | <input type="text"/>   |
| Country (Optional)   | Phone (Optional)      | Fax (Optional)         |
| <input type="text"/> | <input type="text"/>  | <input type="text"/>   |



## Creators

The creator is considered to be the owner of the image, i.e. the person(s) responsible for its creation. At least one creator is required.

## Contacts

Include here people that researchers looking to use your data can reach out to. Ideally, you'll want to include the person responsible for managing the data. At least one contact is required.

## Associated Parties

Associated parties can include lab technicians who performed work on the slides, lab assistants, other students or professors involved with the project, etc. Associated parties are not required. However, if specified, there is a required Role field, e.g. scanned slide.

### Associated Party

*At least one of the following is required: Last Name, Organization, or Position Name. Role is also required.*

|  |                          |  |
|--|--------------------------|--|
| Last Name (Recommended)                          |                          | ORCID ID (Recommended)                                 |
| <input type="text"/>                             |                          | <input type="text" value="e.g., 0000-0002-5143-7857"/> |
| Salutation (Optional)                            | First Name (Recommended) | Middle Name/Initial (Optional)                         |
| <input type="text"/>                             | <input type="text"/>     | <input type="text"/>                                   |
| Organization (Recommended)                       | Org ID (Optional)        | Org ID Type (Required for Org ID)                      |
| <input type="text"/>                             | <input type="text"/>     | <input type="text" value=""/>                          |
| Position Name                                    |                          |  |
| <input type="text"/>                             |                          |  |
| Role *   |                          |  |
| <input type="text"/>                             |                          |  |
| Email (Recommended)                              |                          | Online URL (Optional)                                  |
| <input type="text"/>                             |                          | <input type="text"/>                                   |
| Address 1 (Optional)                             |                          |  |
| <input type="text"/>                             |                          |  |
| Address 2 (Optional)                             |                          |  |
| <input type="text"/>                             |                          |  |
| City (Optional)                                  | State (Optional)         | Postal Code (Optional)                                 |
| <input type="text"/>                             | <input type="text"/>     | <input type="text"/>                                   |
| Country (Optional)                               | Phone (Optional)         | Fax (Optional)   |
| <input type="text"/>                             | <input type="text"/>     | <input type="text"/>                                   |
| <input type="button" value="Save and Continue"/> |                          | <input type="button" value="Cancel"/>                  |

## Metadata Providers

These are the people responsible for creating or providing the metadata itself. Metadata providers are not required.

## Abstract and Keywords

Both an abstract and keywords are optional, though it is highly recommended to include both to make it easier for researchers to search for your image.

### Abstract

Enter the abstract text below:

**Abstract (Recommended)**



Save and Continue

Reset Changes

### Keywords

Keyword

Add Keyword

Save and Continue

Note that Keywords are entered one at a time by choosing the **Add Keyword** button. Choose keywords that will likely be used in a textual search for your image.

### Keyword

Enter a keyword below:

**Keyword \***

Save and Continue

Cancel

# Intellectual Rights

We recommend that the data you provide comes with few or no use restrictions to maximize accessibility for future research. As such, it is encouraged that collaborators release their data under one of the two provided Creative Commons License options, CC0 or CC BY. CC0 is a declaration that you waive copyright claims to the data, that the data falls under the category of the public domain, and the data DOES NOT require users to use proper citations.

CC BY, on the other hand, requires users to provide appropriate credit for your work and indicate if they made any changes to your work. Both licenses allow for commercial use by users. If you decide to release your data under another license, you can input the description in the "Other" text field. For more about all the different types of Creative Commons licenses, visit <https://creativecommons.org/about/cclicenses/>.

MOTHER requires the specification of intellectual rights.

## Intellectual Rights

Choose from one of the intellectual rights options shown below:

- ☐ This data package is released to the "public domain" under Creative Commons CC0 1.0 "No Rights Reserved" (see: <https://creativecommons.org/publicdomain/zero/1.0/>). It is considered professional etiquette to provide attribution of the original work if this data package is shared in whole or by individual components. A generic citation is provided for this data package on the website <https://portal.edirepository.org> (herein "website") in the summary metadata page. Communication (and collaboration) with the creators of this data package is recommended to prevent duplicate research or publication. This data package (and its components) is made available "as is" and with no warranty of accuracy or fitness for use. The creators of this data package and the website shall not be liable for any damages resulting from misinterpretation or misuse of the data package or its components. Periodic updates of this data package may be available from the website. Thank you.
- ☐ This information is released under the Creative Commons license - Attribution - CC BY (<https://creativecommons.org/licenses/by/4.0/>). The consumer of these data ("Data User" herein) is required to cite it appropriately in any publication that results from its use. The Data User should realize that these data may be actively used by others for ongoing research and that coordination may be necessary to prevent duplicate publication. The Data User is urged to contact the authors of these data if any questions about methodology or results occur. Where appropriate, the Data User is encouraged to consider collaboration or co-authorship with the authors. The Data User should realize that misinterpretation of data may occur if used out of context of the original study. While substantial efforts are made to ensure the accuracy of data and associated documentation, complete accuracy of data sets cannot be guaranteed. All data are made available "as is." The Data User should be aware, however, that data are updated periodically and it is the responsibility of the Data User to check for new versions of the data. The data authors and the repository where these data were obtained shall not be liable for damages resulting from any use or misinterpretation of the data. Thank you.
- ☐ Other (Enter text below)

Save and Continue

Reset Changes

## Geographic/Temporal Coverage

Geographic and Temporal Coverage is optional. However, for some images this may be an important component of your metadata. For example, if the donors were retrieved at a particular geographic location on a specific date, this can be captured as part of the metadata.

### Geographic

#### Geographic Coverage ?

| Geographic Description                  | Bounding Coordinates (W, E, N, S)                                     |
|---|---|
| <a href="#">Add Geographic Coverage</a> | <a href="#">Load Geographic Coverage from CSV File</a> <span>?</span> |
| <a href="#">Save and Continue</a>       |   |

If you know the general geographic location where the donor was found, you can provide the bounding coordinates as latitude and longitude values. All coordinates are typed as decimals. Use latitude as the North and South bounding coordinate, and longitude as the West and East bounding coordinate. East should be greater than or equal to West and North should be greater than or equal to South. Since all four elements are required, a bounding area that is a single point should use the same latitude values for North Bounding Coordinate and South Bounding Coordinate, and the same longitude for West Bounding Coordinate and East Bounding Coordinate.

# Geographic Coverage ?

Enter the geographic description and bounding coordinates below:

Geographic Description \*

?

West Bounding Coordinate \*

East Bounding Coordinate \*

?

North Bounding Coordinate \*

South Bounding Coordinate \*

**Bounding Altitudes (Optional)** *Bounding Altitudes is optional, but if any fields are filled in, they all must be.*

Minimum Altitude

Maximum Altitude

Altitude Units

?

Save and Continue

Cancel

## Temporal

Likewise, if you have the time period in which your donors were collected, you can provide it here. For a single collection date, enter the start date and leave the end date blank.

### Temporal Coverage ?

Begin Date

Add Temporal Coverage

Save and Continue

#### Temporal Coverage

Temporal Coverage represents the period of time the data were collected, not the year the study was conducted if it uses retrospective or historical data.

Two formats are allowed, either a 4-digit year, or a date in ISO format: YYYY-MM-DD.

### Temporal Coverage

Enter the begin and end dates in year (YYYY) or date (YYYY-MM-DD) format. To enter a single date, you may leave the end date blank.

Begin Date \*

YYYY or YYYY-MM-DD

End Date

YYYY or YYYY-MM-DD

Save and Continue

Cancel


## Taxonomic Coverage

Taxonomic Coverage is required for MOTHER, which records the Genus and Species. For a taxonomic search on species, enter the binomial name. Upon entering the binomial name into the “Taxon Scientific Name” field, you will need to specify its taxonomic rank. You can also automatically create the hierarchy by specifying which Taxonomic Authority to reference and then clicking “Fill Hierarchy”.

## Taxonomic Coverage

Enter a description of the range of taxa addressed in the data set or collection. For example, "All vascular plants were identified to family or species, mosses and lichens were identified as moss or lichen."

General Taxonomic Coverage (Optional)

Enter the most specific relevant taxon, below, then click "Fill Hierarchy." Taxon Rank will be filled in automatically, unless the taxon is unknown to the Taxonomic Authority. Filling the hierarchy takes a few seconds. 

| Taxon Scientific Name                       | Taxon Rank                           | Taxonomic Authority  |   |
|---|--------------------------------------|--|---|
| <input type="text" value="macaca mulatta"/> | <input type="text" value="Species"/> | <input type="text" value="NCBI - National Center for Biotechnology Inform"/> | <input type="button" value="Fill Hierarchy"/> |

| Taxon Rank  | Taxon Name       | Common Name       | Links                         |
|-------------|------------------|-------------------|-------------------------------|
| Species     | Macaca mulatta   | Rhesus monkey     | <a href="#">External Link</a> |
| Genus       | Macaca           | macaques          | <a href="#">External Link</a> |
| Subfamily   | Cercopithecinae  |                   | <a href="#">External Link</a> |
| Family      | Cercopithecidae  | Old World monkeys | <a href="#">External Link</a> |
| Superfamily | Cercopithecoidea |                   | <a href="#">External Link</a> |
| Infraorder  | Simiiformes      |                   | <a href="#">External Link</a> |
| Suborder    | Haplorrhini      |                   | <a href="#">External Link</a> |
| Order       | Primates         |                   | <a href="#">External Link</a> |
| Superorder  | Euarchontoglires |                   | <a href="#">External Link</a> |
| Class       | Mammalia         | mammals           | <a href="#">External Link</a> |
| Superclass  | Sarcopterygii    |                   | <a href="#">External Link</a> |
| Subphylum   | Craniata         |                   | <a href="#">External Link</a> |
| Phylum      | Chordata         | chordates         | <a href="#">External Link</a> |
| Kingdom     | Metazoa          | metazoans         | <a href="#">External Link</a> |

To proceed when the taxon scientific name cannot be found in the system, simply enter the taxon scientific name and taxonomic rank, and click on the ‘Save and Continue’ button. Please contact MOTHER if you have manually entered in the taxonomic coverage.

## 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. The method steps document a series of procedures followed. These may include text descriptions of the procedures for an experiment, relevant literature, software, instrumentation, source data and any quality control measures taken. Methods are not required. However, if a Method Step is added, then a description is required.

### Method Steps ?

| Method Step Description | Method Step Instrumentation |
|-------------------------|-----------------------------|
|-------------------------|-----------------------------|

[Add Method Step](#)

[Save and Continue](#)

Select **Add Method Step** to add for a step that requires at least a method step description.

### Method Step

Enter the method step description and (optionally) instrumentation and data sources below:

Description \*

?

Instrumentation (Optional)

?

Data Sources (Optional)

?

[Save and Continue](#)

[Cancel](#)



## Project

If the contributed histology image is related to a project, then include information about the project, including its title, abstract, project personnel, funding awards, and related projects. While the 'Project' element is optional, if included, it must contain a 'Project Title' and 'Project Personnel' information. If you have decided to skip the project element, you may proceed to the next element, 'Donor', by clicking on it.

Note that after entering **Project Personnel**, **Funding Awards**, or **Related Projects**, you need to select **Back to Project** to access the other components of the project.

### Project ?

Enter the project information below:

**Project Title \***

MOTHER: Multispecies Ovary Tissue Histology Electronic Repository ?

**Project Abstract (Optional)**

Project Personnel

Funding Awards

Related Projects

Save and Continue

Reset Changes

## Project Personnel

Project Personnel is similar to the People content pages (Creators, Contacts, Associated Parties, Metadata Providers) and should include people/organizations that were involved in the research project. You must also include their Role should you choose to include Project Personnel, such as PI, Co-PI, Senior Personnel, etc.

### Project Personnel

*At least one of the following is required: Last Name, Organization, or Position Name. Role is also required.*

|                            |                          |  |
|----------------------------|--------------------------|--|
| Last Name (Recommended)    |                          | ORCID ID (Recommended)                                 |
| <input type="text"/>       |                          | <input type="text" value="e.g., 0000-0002-5143-7857"/> |
| Salutation (Optional)      | First Name (Recommended) | Middle Name/Initial (Optional)                         |
| <input type="text"/>       | <input type="text"/>     | <input type="text"/>                                   |
| Organization (Recommended) | Org ID (Optional)        | Org ID Type (Required for Org ID)                      |
| <input type="text"/>       | <input type="text"/>     | <input type="text" value="v"/>                         |
| Position Name              |                          |  |
| <input type="text"/>       |                          |  |

Role \*

Email (Recommended)

Online URL (Optional)

Address 1 (Optional)

Address 2 (Optional)

City (Optional)

State (Optional)

Postal Code (Optional)

Country (Optional)

Phone (Optional)

Fax (Optional)

Save and Continue

Cancel

**Save and Continue** shows the Project Personnel page with the added personnel. The order of the personnel can be updated using the up/down arrow icons. You can also **Edit** or **Remove** personnel.

## Project Personnel ?

| Project Personnel   |   |   |      |        |
|---|---|---|------|--------|
| Karen Watanabe, Arizona State University, PI                  |   | ▼ | Edit | Remove |
| Suzanne Dietrich, Professor, Arizona State University, co-PI  | ▲ | ▼ | Edit | Remove |
| Mary Zelinski, Oregon National Primate Research Center, co-PI | ▲ | ▼ | Edit | Remove |
| James Sluka, Indiana University, co-PI                        | ▲ |   | Edit | Remove |

Add Project Personnel

Back to Project

Select **Back to Project** to add Funding Awards or Related Projects.

## Funding Awards

The funding awards for the project. Each funding award is described by the name of the funding agency, the title of the award, and its award number. Optional fields are provided as well for the Open Funder Registry identifiers for the agency and program that made the award and the URL to the award page describing the award.

### Project Funding Award ?

Enter the funding award information below:

Funder Name \*



Award Title \*



Funder Identifier(s) (Optional)



Award Number \*



Award URL (Optional)

[Save and Continue](#)[Cancel](#)

Once entered, the Funding Awards page shows the funder name and award title. Select **Back to Project** to add Related Projects, if any.

### Funding Awards ?

| Funder Name                 | Award Title   |   |
|-----------------------------|---|---|
| National Science Foundation | CIBR Multispecies Ovary Tissue Histology Electronic Repository (MOTHER) | <a href="#">Edit</a> <a href="#">Remove</a> |

[Add Funding Award](#)[Back to Project](#)

## Related Project

Include citations to projects that are associated with or similar to yours. EML treats one project as the main or primary project, which can then have one or more related projects as "children". Splitting projects up in this way lets you associate different funding awards with different Principal Investigators.

### Related Projects

Project Title

Add Related Project

Back to Primary Project

Select **Add Related Project** to add details on a Related Project, which can have Project Personnel and Funding Awards.

### Related Project

Enter the project information below:

Project Title \*



Project Abstract (Optional)

Project Personnel

Funding Awards

Save and Continue

Reset Changes

## Donor

The Donor content is unique to ezEML+MOTHER. Recall that all fields marked with an asterisk on the form are required.

### Donor ID\*

The Donor ID must be unique across ALL donors in the MOTHER database. Thus, this is NOT a simple number but an encoding of various information about the donor. The recommendation is to use the following information separated by an underscore:

- Initials for the lab or creator associated with the donor.
- The first letter of the genus and species of the donor.
- A unique identification for the donor used by the scientist. This can be the animal id for a lab animal. If the donor was collected from the field, it may be the combination of the date collected and its sequence number in the collection.

Some examples:

- A Rhesus Macaque (*macaque mulatta*) donor assigned an animal id of 12345 by the lab/creator MZ can be assigned a donor id of MZ\_MM\_12345.
- A whelk donor that was obtained on 14 September 2020 with a sequence number of 97 collected on that date can be assigned a donor id of JS\_BC\_2020-09-14\_097 where JS are the lab/creator's initials, BC stands for the first letter of the genus (*busycotypus*) and species (*canaliculatus*), followed by the collection date, and sequence number.

### Sex\*

Currently, *female* is the only value since MOTHER is storing only ovarian histology images.

### Years and Days

You can specify the age of the donor, if known, as either just years, just days, or a combination of years and days.

### Life Stage\*

Values for life stage include: *fetal*, *neonatal*, *prepubertal*, *pubertal*, *adult*, *aging*, and *unspecified*. If you choose *unspecified*, please contact the MOTHER team with details for the life stage values for the donor species so that this information can be incorporated in future versions.

### Specimen Sequence Number\*

The specimen sequence number is typically 1. However, a donor may have multiple ovaries. If you are contributing slides from two ovaries of the same donor, then the specimen sequence number differentiates between the ovaries.

### Specimen Tissue\*

Currently, *ovary* is the only tissue for which MOTHER is storing histology images.

### Ovary Position\*

Choose *Left*, *Right*, or *Unspecified* from the drop-down.

### Specimen Location\*

The current values for specimen location are *whole ovary*, *ovarian cortex*, *ovarian medulla*, *follicle*, *corpus luteum*, *unspecified*.

If the specimen location is chosen as corpus luteum, then the **Corpus Luteum Type** drop-down will be enabled to choose one of the following values: *early*, *mid*, *late*, *albicans*

If these values do not capture the location within the ovary of your donor, please contact the MOTHER team.

### Day of Cycle

If known, enter the reproductive cycle day that the specimen was collected.

### Cycle Type and Stage of Cycle

MOTHER currently supports the stages of the *menstrual* cycle and the *estrous* cycle in the drop down.

- menstrual stage values: *follicular*, *pre-ovulatory*, *ovulation*, *luteal*, *unspecified*.
  - If follicular, then the **Follicular Values** drop-down is enabled with the following values: *early*, *mid*, *late*.
  - If luteal, then the **Luteal Values** drop-down is enabled with the following values: *early*, *mid*, *late*, *albicans*.
- estrous stage values: *proestrus*, *estrus*, *metestrus*, *diestrus*, *anestrus*, *unspecified*

There is also an *other* cycle type if your donor does not use menstrual or estrous cycles. Choose *other* and enter the stage of cycle manually. Please contact the MOTHER team so that the cycle type and stages for the donor species can be incorporated in future versions.

**Slide ID\***

The slide ID must be unique within the donor and specimen sequence number. If you are contributing multiple images from the same physical slide, then the slide id value must be identified by the physical slide number and the section designation of the image. For example, if slide 1 has sections A and B and you want to contribute both images, then the slide id for the image for section A is 1A whereas the slide id for the image for section B is 1B.

**Experimental Treatment\***

You must choose a value from the dropdown: No Treatment, Control mock treatment, Control no treatment, Treatment. *No Treatment* may be a field collected sample or a normal animal not involved in a treatment experiment. *Control no treatment* are specimens that are part of an experiment. *Control mock treatment* are animals that are part of an experiment that have a mock treatment, e.g. vehicle control or mock surgery. *Treatment* are animals that have been treated in some way, e.g. drugs, toxicants, or surgery.

**Compound, dose, route, duration**

If the Experimental Treatment option selected is *Treatment* or *Control mock treatment*, you must enter a brief description for compound, dose, route, duration; e.g. 10 ug ethinylestradiol administered orally once per day for 30 days.

**Other Pathology**

Specify whether the donor animal had any other pathologies due to diet, infection, genetic background, etc. For example, obesity or cancer of some type. In some species these may be related to the particular animal strain (e.g, Obese mice).

**Section Sequence Number**

If you are submitting a collection of images that allow for a 3d reconstruction of the ovary, then please enter its section sequence number for the reconstruction.

**Section Thickness\***

Enter the thickness of the section on the slide.

**Section Thickness Units\***

Choose *Microns* or *NM* from the drop-down.



### Fixation\*

Choose a fixation drop-down value: *Neutral Buffered Formalin 10, Paraformaldehyde, Davidsons, Neutral Buffered Formalin5 acetic Acid, Bouins, Other*

If *Other* is selected, enter the name of the fixation used in the **Other Fixation** field.

### Stain\*

Choose a stain drop-down value: *Light Microscopy Stain, Fluorescent Microscopy Stain, Electron Microscopy Stain*. The appropriate drop-down will be enabled based on the type of microscopy chosen:

- **Stain Light Type** values: *Eosin only, Hematoxylin only, Hematoxylin and Eosin, Masons Trichrome, Mallorys Trichrome, Periodic Acid Schiff, Sudan, Acid Fuschin, Alcian Blue, Azan Trichrome, Casans Trichrome, Cresyl VioletNissl, Giemsa, Methylene Blue, Neutral Red, Nile Blue, Nile Red, Orcein, Reticulin, Toluidine Blue, Van Gieson, Other*
  - If *Sudan*, choose the **Sudan Stain Value**: *III, IV, Black B, Oil Red O, Osmium tetroxide*
  - If *Other*, enter the name of the **Other Light Stain**
- **Stain Fluorescent Type** values: *Acridine Orange, Calcein, DAPI, Hoechst, Propidium Iodide, Rhodamine, TUNEL, Other*
  - If *Other*, enter the name of the **Other Fluorescent Stain**
- **Stain Electron Type** values: *Colloidal Gold, Osmium tetroxide, Phosphotundstic Acid, Silver Nitrate, Other*
  - If *Other*, enter the name of the **Other Electron Stain**

### Magnification\*

Enter the magnification value used to digitize the image.

### Microscope Maker, Microscope Model, Microscope Notes

Enter the information about the microscope, if known.

Donor ?

|                      |                                     |                      |                      |                      |
|----------------------|-------------------------------------|----------------------|----------------------|----------------------|
| Donor ID *           | Sex *                               | Years                | Days                 | Life Stage *         |
| <input type="text"/> | <input type="text" value="female"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |

|                            |                                    |                      |                      |                      |
|----------------------------|------------------------------------|----------------------|----------------------|----------------------|
| Specimen Sequence Number * | Specimen Tissue *                  | Ovary Position *     | Specimen Location *  | Corpus Luteum Type   |
| <input type="text"/>       | <input type="text" value="ovary"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |
| Day Of Cycle               | Cycle Type                         | Stage Of Cycle       |                      |                      |
| <input type="text"/>       | <input type="text"/>               | <input type="text"/> |                      |                      |
| Follicular Values          |                                    | Luteal Values        |                      |                      |
| <input type="text"/>       |                                    | <input type="text"/> |                      |                      |

|                      |                          |                                 |                           |  |
|----------------------|--------------------------|---------------------------------|---------------------------|--|
| Slide ID *           | Experimental Treatment * | Compound, dose, route, duration |                           |  |
| <input type="text"/> | <input type="text"/>     | <input type="text"/>            |                           |  |
| Other Pathology      | Section Sequence Number  | Section Thickness *             | Section Thickness Units * |  |
| <input type="text"/> | <input type="text"/>     | <input type="text"/>            | <input type="text"/>      |  |

|                        |                         |                      |                      |
|------------------------|-------------------------|----------------------|----------------------|
| Fixation *             | Other Fixation          | Stain *              |                      |
| <input type="text"/>   | <input type="text"/>    | <input type="text"/> |                      |
| Stain Light Type       | Sudan Stain Value       | Other Light Stain    |                      |
| <input type="text"/>   | <input type="text"/>    | <input type="text"/> |                      |
| Stain Fluorescent Type | Other Fluorescent Stain | Stain Electron Type  | Other Electron Stain |
| <input type="text"/>   | <input type="text"/>    | <input type="text"/> | <input type="text"/> |

|                      |                      |                      |
|----------------------|----------------------|----------------------|
| Magnification *      | Microscope Maker     | Microscope Model     |
| <input type="text"/> | <input type="text"/> | <input type="text"/> |

Microscope Notes

Save and Continue

Reset Changes

## Immunohistochemistry

This section is only required to fill out if immunohistochemistry was used on the slide. If you did not, you will just need to answer “No” to the top question.

**Target Protein:** Enter the name and description, e.g. CD

**Detection Method Values:** *ABC (avidin-biotin complex), Alkaline Phosphatase, Diaminobenzidine, FITC, Horseradish Peroxidase, LSAB (labeled streptavidin-biotin), RPE*

For each antibody, enter the following: **Target Species, Host Species, Dilution, Lot Number, Cat Number, Source Name, Source City, Source State, and RRID**

For the primary antibody, choose its **Clonality**: *monoclonal, polyclonal*

### Immunohistochemistry ?

|   |                      |                      |
|---|----------------------|----------------------|
| Is this image immunohistochemistry? <span>Ye ▾</span> |                      |                      |
| Target Protein *                                      |                      | Detection Method *   |
| <input type="text"/>                                  |                      | <input type="text"/> |
| Primary Antibody                                      |                      |                      |
| Target Species *                                      | Host Species *       | Dilution *           |
| <input type="text"/>                                  | <input type="text"/> | <input type="text"/> |
| Lot Number *  | Cat Number *         |                      |
| <input type="text"/>                                  | <input type="text"/> |                      |
| Source Name *   | Source City *        | Source State *       |
| <input type="text"/>                                  | <input type="text"/> | <input type="text"/> |
| RRID  | Clonality *          |                      |
| <input type="text"/>                                  | <input type="text"/> |                      |
| Secondary Antibody                                    |                      |                      |
| Target Species *                                      | Host Species *       | Dilution *           |
| <input type="text"/>                                  | <input type="text"/> | <input type="text"/> |
| Lot Number *  | Cat Number *         |                      |
| <input type="text"/>                                  | <input type="text"/> |                      |
| Source Name *   | Source City *        | Source State *       |
| <input type="text"/>                                  | <input type="text"/> | <input type="text"/> |
| RRID  |                      |                      |
| <input type="text"/>                                  |                      |                      |

Save and ContinueReset Changes

# Check Metadata

Once you've gone through all of the sections listed above, you may be ready to submit your metadata. You'll notice a colored circle next to **Check Metadata** on the right. **Red** means that you have an error, most often being a missing section that is required to be filled out. **Orange-Yellow** means you only have warnings, usually a recommendation to add or improve upon your metadata. **Green** means there are neither any errors or warnings and that your metadata is ready to be submitted. You may submit your metadata with warnings. However, you should review each warning before submission.

Contents ?

[Title](#)  
[Image](#)  
[People](#)  
[Abstract and Keywords](#)  
[Intellectual Rights](#)  
[Geographic/Temporal Coverage](#)  
[Taxonomic Coverage](#)  
[Methods](#)  
[Project](#)

[Donor](#)  
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**Check Metadata** ●  
[Submit Metadata](#)

## Check Metadata: Results

[Back](#)

### Title

| Item                  | Severity | Reason   | Explanation                        |
|-----------------------|----------|----------|------------------------------------|
| <a href="#">Title</a> | Error    | Required | An image <b>Title</b> is required. |

### Creators

| Item                     | Severity | Reason   | Explanation                                    |
|--------------------------|----------|----------|--|
| <a href="#">Creators</a> | Error    | Required | At least one image <b>Creator</b> is required. |

### Contacts

| Item                     | Severity | Reason   | Explanation                              |
|--------------------------|----------|----------|--|
| <a href="#">Contacts</a> | Error    | Required | At least one <b>Contact</b> is required. |

### Abstract

| Item                     | Severity | Reason      | Explanation                                  |
|--------------------------|----------|-------------|--|
| <a href="#">Abstract</a> | Warning  | Recommended | An image <b>Abstract</b> should be provided. |

### Keywords

| Item                     | Severity | Reason      | Explanation   |
|--------------------------|----------|-------------|---|
| <a href="#">Keywords</a> | Warning  | Recommended | Consider adding more <b>Keywords</b> to make the image more discoverable. |

## Submit Metadata

After clicking on the **Submit Metadata** text, a window will appear displaying the name of the Image File and its XML File. The Submit Metadata button creates a zip of these two files, named with the Document Name – not the Image name, and submits the zip to MOTHER.

*NOTE: In order to submit, there must be an image file loaded and the metadata must not contain any errors. If these conditions are not met, then the Submit Metadata button is disabled.*

**Submit Metadata** ?

| Image File                  | XML File                    |
|-----------------------------|-----------------------------|
| 32685_S5L-SC_omen_71x10.tif | 32685_S5L-SC_omen_71x10.xml |

Submit Metadata

Cancel

The successful submission will give you the opportunity to download the ZIP file submitted to MOTHER. This step is highly recommended for you to maintain a record of the submitted zip.

## Submit Metadata ?

Your data has been submitted successfully. You may download the submitted data here:

[Click me](#)

When you have submitted all of the images that you want to contribute, please contact the MOTHER team to start the curation process.

## Summary of Required/Optional Metadata for ezEML+MOTHER

*NOTE: Please provide as much information that you have available for your shared histology image. The complete metadata will be downloadable with the image. For example, although keywords are optional, they are highly recommended and will allow for discoverability using a keyword search on the MOTHER Web site. Also, please provide any additional information for an image, e.g. publication information or other measurements, which are not already specified as part of MOTHER.*

| Topic/Contents<br><small>* indicates required</small>   | EML              |                                       | MOTHER                               |                                 |
|---|------------------|---------------------------------------|--------------------------------------|---------------------------------|
|   | Required         | Optional                              | Required                             | Optional                        |
| <b>Title*</b>   | ✓                |                                       |                                      |                                 |
| <b>Image*</b>   |                  |                                       | Name, Image Type, Data Format, Image | Additional Info                 |
| <b>People*</b><br><i>[MOTHER Recommended: ORCID, last name, first name, organization, email]</i><br><i>[EML Required: At least last name, organization, or position name]</i> | Contact, Creator | Associated Parties, Metadata Provider |                                      |                                 |
| <b>Abstract and Keywords</b>  |                  | Abstract, Keywords                    |                                      |                                 |
| <b>Intellectual Rights*</b>   |                  |                                       | ✓                                    |                                 |
| <b>Geographic/ Temporal Coverage</b>  |                  | Geographic, Temporal                  |                                      |                                 |
| <b>Taxonomic Coverage*</b>  |                  |                                       | ✓                                    |                                 |
| <b>Methods</b>  |                  |                                       |                                      |                                 |
| <b>Project</b>  | Project Title    | Project Abstract                      |                                      |                                 |
|   |                  | Personnel                             |                                      |                                 |
|   |                  | Funding Awards                        |                                      |                                 |
|   |                  | Related Projects                      |                                      |                                 |
| <b>Donor*</b><br><i>[NOTE: Compound, dose, route, duration is required IF the Experimental Treatment is Treatment or Control Mock Treatment]</i>                              |                  |                                       | Donor ID                             | Years                           |
|   |                  |                                       | Sex                                  | Days                            |
|   |                  |                                       | Life Stage                           | Day of Cycle                    |
|   |                  |                                       | Specimen Seq Number                  | Stage of Cycle                  |
|   |                  |                                       | Specimen Tissue                      | SectionSeqNumber                |
|   |                  |                                       | Ovary Position                       | Microscope Maker                |
|   |                  |                                       | Specimen Location                    | Microscope Model                |
|   |                  |                                       | Slide ID                             | Microscope Notes                |
|   |                  |                                       | Experimental Treatment               | Compound, dose, route, duration |
|   |                  |                                       | Section Thickness                    | Other Pathology                 |
|   |                  |                                       | Section Units                        |                                 |
|   |                  |                                       | Fixation                             |                                 |
| <b>Immunohistochemistry</b><br>[primary & secondary antibody]   |                  |                                       | Stain                                |                                 |
|   |                  |                                       | Magnification                        |                                 |
|   |                  |                                       | Target Protein                       | RRID                            |
|   |                  |                                       | Detection Method                     |                                 |
|   |                  |                                       | Target Species                       |                                 |
|   |                  |                                       | Host Species                         |                                 |
|   |                  |                                       | Dilution                             |                                 |
|   |                  |                                       | Lot Number                           |                                 |
|   |                  |                                       | Cat Number                           |                                 |
|   |                  |                                       | Source Name, City, State             |                                 |
|   |                  |                                       | Clonality [primary]                  |                                 |

