

# Data Model

## DATA MODEL

- [Key Models](#)
- [Images](#)

RMA

The data model includes entities from molecular biology, anatomic atlases, laboratory artifacts, experiments, and annotations. Refer to the [Class Hierarchy and Class List](#) for the models' details, including their members and associations. Use [RESTful Model Access \(RMA\)](#) to retrieve details for instances of the models.

### Key Models

<a href="#">Product</a>	Allen Institute experimental study or reference data, provides context for the data
<a href="#">Donor</a>	Mouse, Human or NHP donors
<a href="#">Specimen</a>	Tissue from the donor used in an experiment or for histology
<a href="#">SectionDataSet</a>	Collection of images' metadata for a gene expression experiment or histological purposes
<a href="#">MicroarrayDataSet</a>	Microarray experiments' metadata
<a href="#">AtlasDataSet</a>	Collection of annotated reference atlas images' metadata
<a href="#">Structure</a>	Member of an anatomic structure ontology
<a href="#">StereotaxicInjection</a>	Identifies the primary structure into which a viral tracer was introduced
<a href="#">Gene</a>	Defined by an authority, associated with one or more probes used in experiments
<a href="#">TransgenicLine</a>	Transgenic mouse line
<a href="#">SectionImage</a>	Image that is a member of a SectionDataSet
<a href="#">AtlasImage</a>	Image that is a member of a AtlasDataSet

### Images

Image-based experiments are modeled as SectionDataSets. One SectionDataSet represents a single experiment associated with a Specimen. A SectionDataSet has an ordered set of SectionImages, each representing one section.

Multiple experiments may be associated with one Specimen. Typically, the sectioning scheme divided the specimen into interleaving SectionDataSets with a specific sampling density. The SectionImage.section\_number attribute can be used to order SectionImages in the context of the whole Specimen.

The image data associated with a SectionImage object are stored in an internal hierarchical tile based format. Users can [download high resolution images](#) for every experiment. These images are typically large. The Image Service supports requests for specific regions of interest and/or lower image resolutions.

Depending on the scanning system, the original image file may contain one or more tissue sections. If there are several sections, a SectionImage is defined by a bounding box (attributes: x, y, width, height) on the image containing multiple sections. The SectionImage.resolution attribute reports the pixel dimension in microns at the full resolution.