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

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