

“Plays nice with others”: Integrating with Mouse Gene Index and other Resources

Harry Hochheiser

Scenario

- Developmental Genomics and Aging Section @ NIA has lots of image data
 - Mouse in-situ
 - Developing embryo
 - Images for 91 genes for 7 developmental stage
 - Yoshikawa, et al. **High-throughput screen for genes predominantly expressed in the ICM of mouse blastocysts by whole mount in situ hybridization.** Gene Expression Patterns, 2006
- Goal: Use OME to provide/display supplemental data
- Related : Magdaleno, et al., BGEM: An In Situ Hybridization Database of Gene Expression in the Embryonic and Adult Mouse Nervous System, PLOS Biology, April 2006

Example

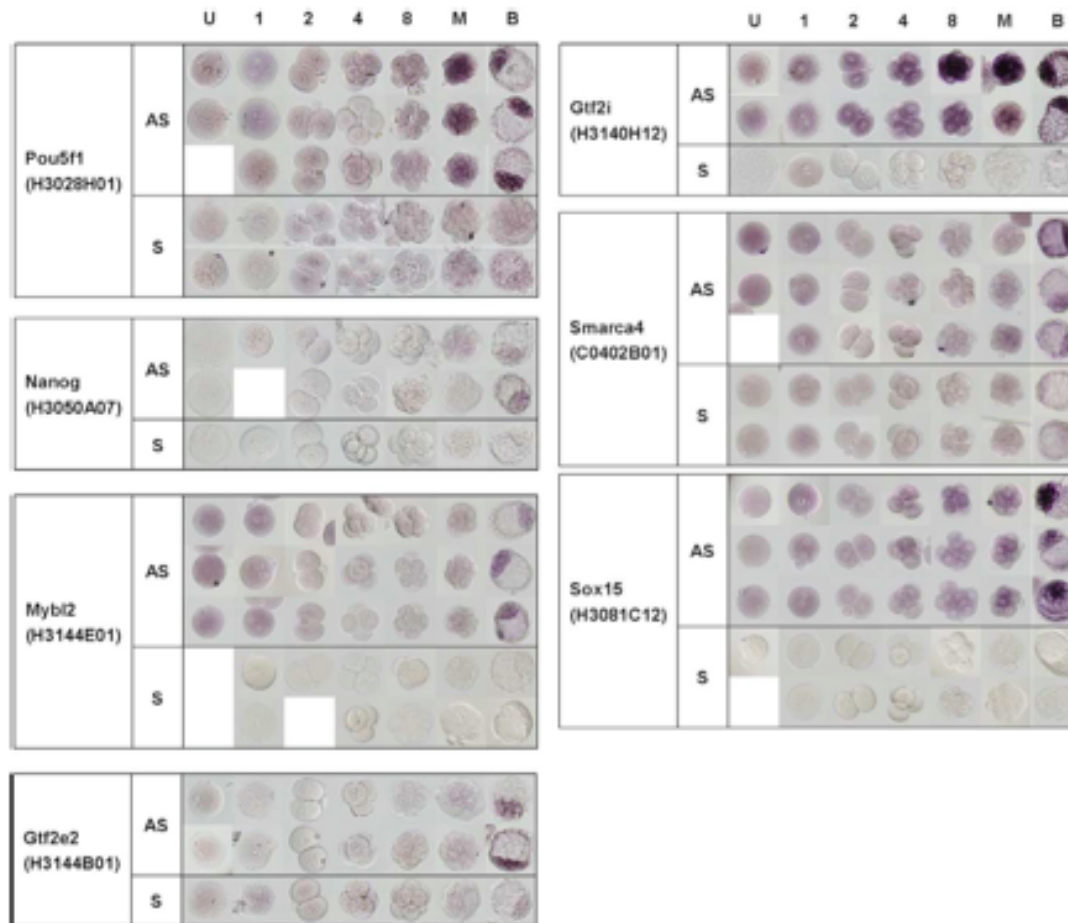


Fig. 3. WISH results of 7 genes during preimplantation development. AS; antisense probe, S; sense probe

- Can we do this with OME?

In OME...




















OME: Image Annotation Table

Welcome, Harry Hochheiser
Recently viewed project: Apoptosis (Popup)
Recently viewed Dataset: yong2 (Popup)

Open Microscopy Environment v2.4.1

Home -> Mouse Annotations -> View AnnotationTable

Rows: Gene Columns: EmbryoStage
Category Group: Localization Category: All
Gene: sp1,mizl,AA6 Update Display

		1-Cell Info..	4-Cell Info..	8-Cell Info..	Morula Info..	Blastocyst Info..
sp1 MGI	C0608A05-AS Info..	 Nuclear	 Nuclear		 Nuclear	 Nuclear
	C0827H10-AS Info..	 Mosaic		 Mosaic	 Mosaic	 Mosaic
mizl MGI	C0608A05-AS Info..	 Nuclear	 Nuclear		 Nuclear	 Nuclear
	J0019E10-AS Info..	 Cytoplasm	 Mosaic	 Nuclear	 Other	 Cytoplasm
AA606869 MGI	J0019E10-S Info..	 Nuclear	 Nuclear			

Find: swedlow Find Next Find Previous Highlight all Match case Reached end of page, continued from top

- Color code based on categorizations
- Outlinks to MGI

Image Detail Display

OME: Image Annotation Details

Suggested Topics and For...

Programme and Agenda

OME: Image Annotation Table


OME: Image Annotation Deta...

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Open Microscopy Environment v2.4.1



Create

Project

Dataset

Category Group

Other

Search

Projects

Datasets

Images

Category Group

Module Executions

Chain Executions

Other

Annotation

Create a Template

Annotate Images

Search by Annotation

Import Spreadsheet

Mouse Annotations

Annotate Images

View

AnnotationTable

Images

Import

Export Image(s)

Analysis

Find Spots

Import Modules

Execute Chain

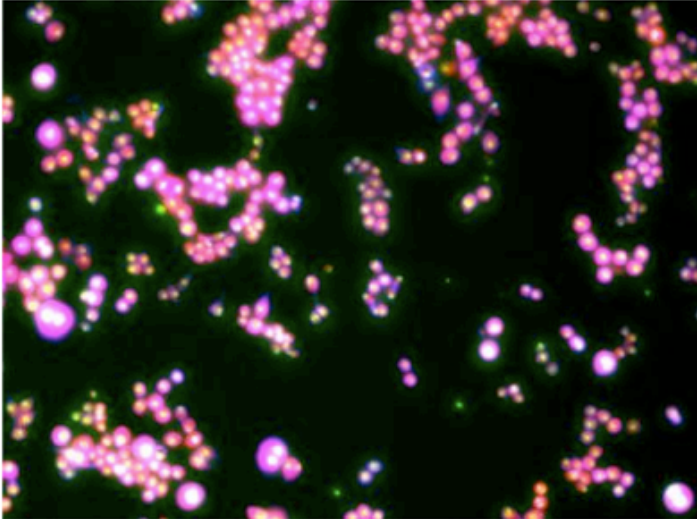
View Chain Results

Options

Tasks

Logout

Home -> -> Image Annotation Details



ID: 812

Title: [010B1-011B1 Morph Well...](#)

Owner: [Harry Hochheiser](#)

Group: [OME](#)

Created: 2004-05-26 00:41:10

Description:

- EmbryoStage: [1-Cell](#)
- EmbryoStage: [4-Cell](#)
- Probe: [J0019E10-S](#)
 - Gene: [AA606869](#)
- Probe: [C0608A05-AS](#)
 - Gene: [sp1](#)
 - Gene: [mizl](#)
 - Gene: [Krt2-8](#)
- Localization: [Nuclear](#)

X Find:

Find Next Find Previous Highlight all Match case Reached end of page, continued from top

Done 5.896s siteadvisor Apache/1.3.33 Adblock


Image Annotation

OME: Annotate Images

Suggested Topics and Formats Discus... : Programme and Agenda OME: Image Annotation Table OME: Annotate Images

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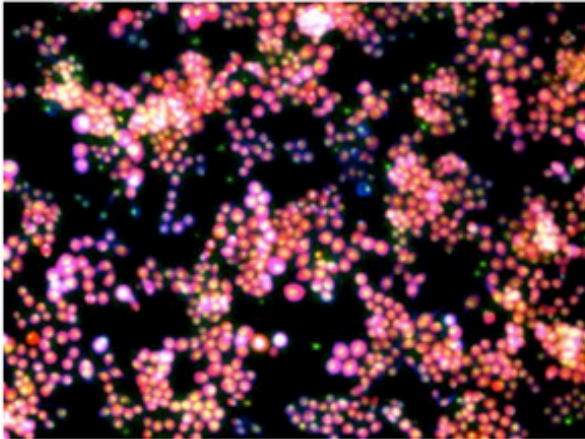
Options

Tasks

Logout

Home -> Mouse Annotations -> Annotate Images

Search for images to annotate



ID: 1185
Title: 010B1-011B1 Morph Well...
Owner: Harry Hochheiser
Group: OME
Created: 2004-05-26 01:28:01
Description:
Comments:


Suitable for publication? ☐

Classification	Value	Add New Value
Probe	...	
EmbryoStage	...	
Localization	...	

Create a new Probe:
Probe Name:
Probe Type: Antisense
Gene: 1110054H05Rik
Create Probe
Create a new Gene:
Gene Name:
Create Gene

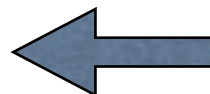
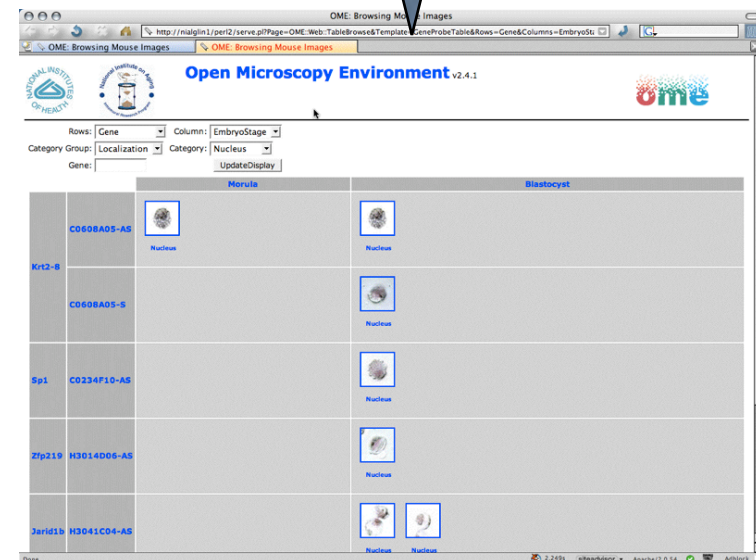
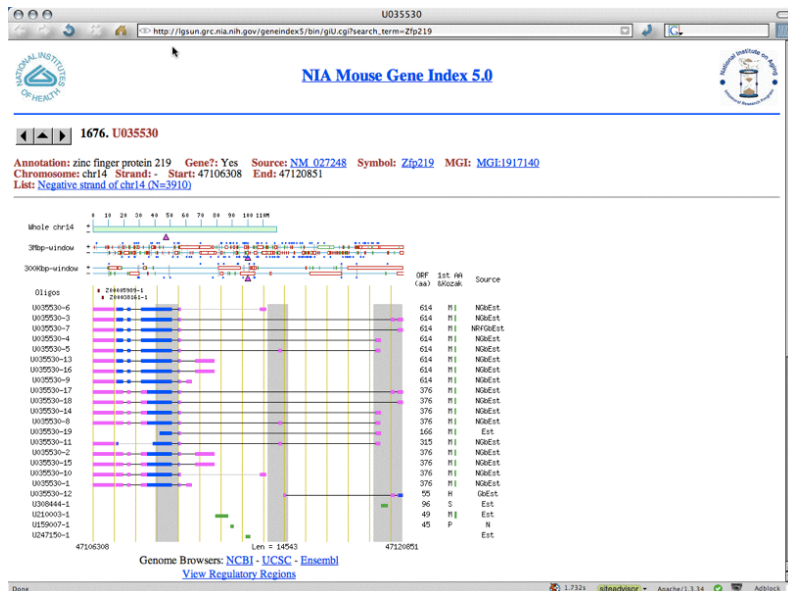
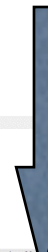
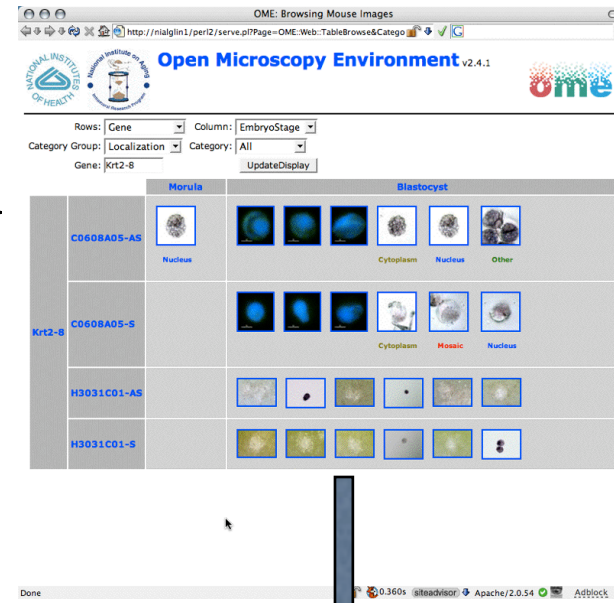
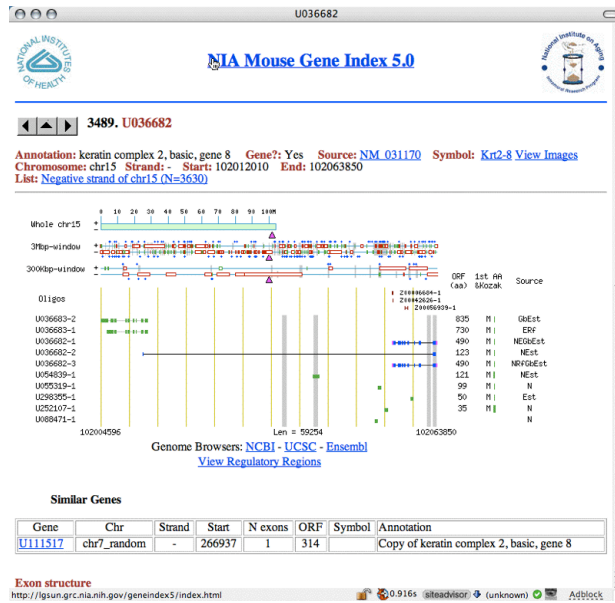
Save & Next Add Categories

Images left to annotate:

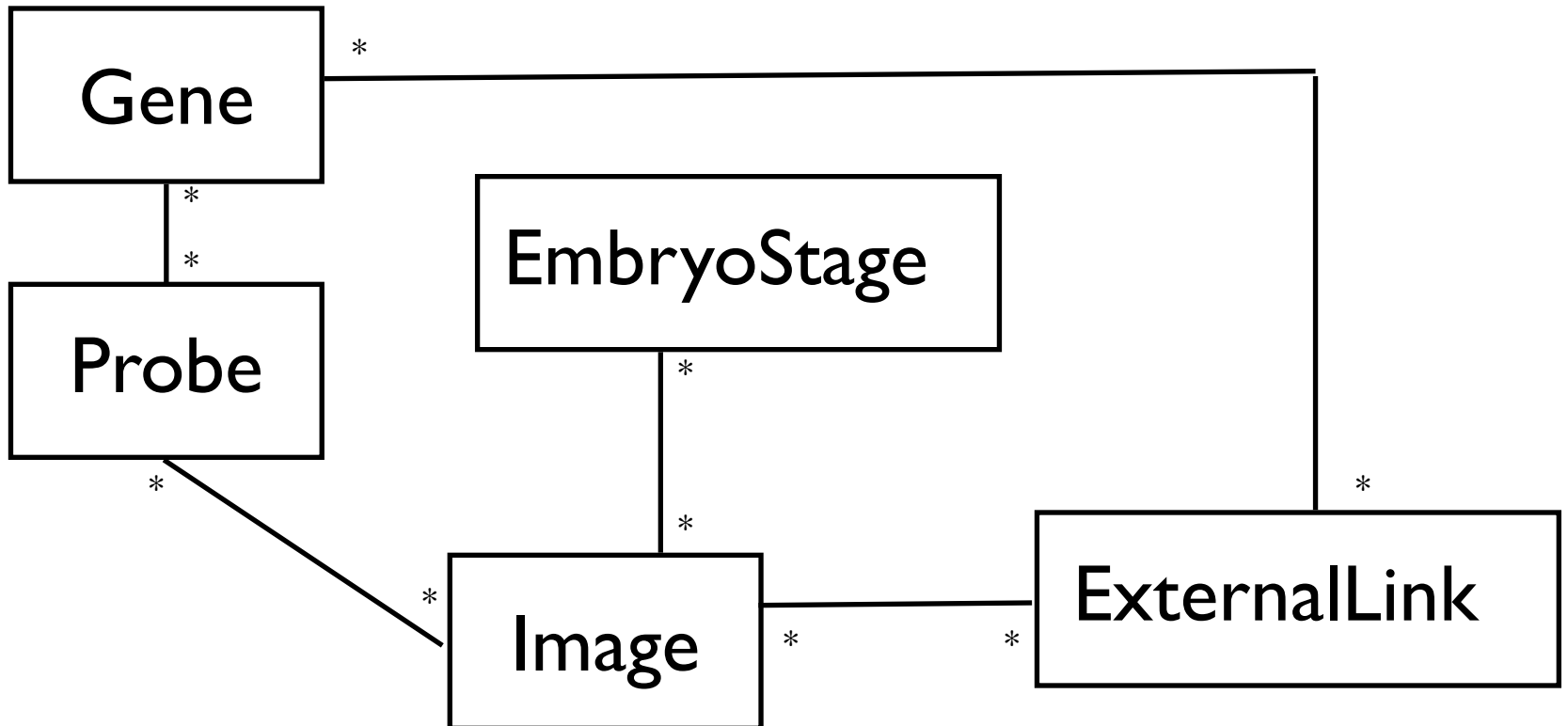


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"Closing the Loop"



Data Model



Modeling External Data: What's in a Link?

- External ID
- Description
- URL

- What else do we need?
- How do we link to other Resources?
 - GeneOntology?

- General Question: OME and ontology integration??
 - OME in OWL?

A General Methodology for OME Web UI applications

- Identify specific problem and goals
 - User or designer-driven
- Write requirements/specs
 - usage scenarios
- Prototype
- Discuss with users and revise
- Generality:
 - Design appropriate data models
 - Use templates
 - Generalizable custom code – configuration specifics in templates, not in code

Towards a more usable Web Interface

- Goal: make OME more usable for more people
 - Not: make it do everything for everyone
 - Not: throw it all out and start from scratch
- Apply this methodology to core tasks
 - Importing images – selection, process feedback, etc.
 - Annotations: revision of existing pages?
 - Browsing Data structure: screens/plates, projects/datasets, etc.?
 - quasi-hierarchical?
 - Running analyses and interpreting results