

# Anatomic Gene Expression Atlas (AGEA)

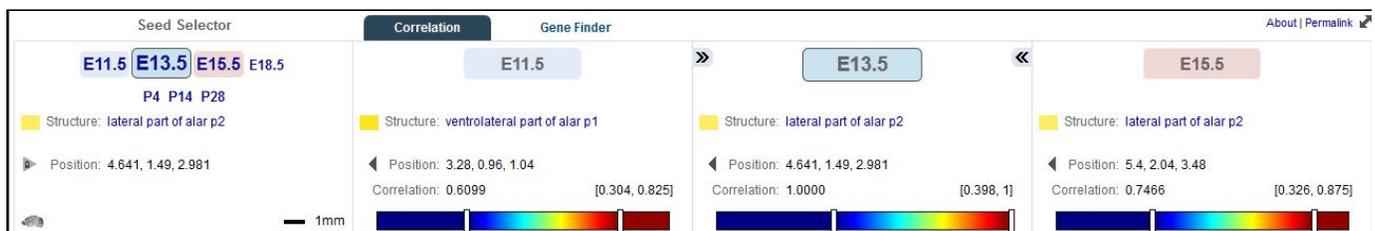
## DEVELOPMENTAL ANATOMIC GENE EXPRESSION ATLAS (AGEA)

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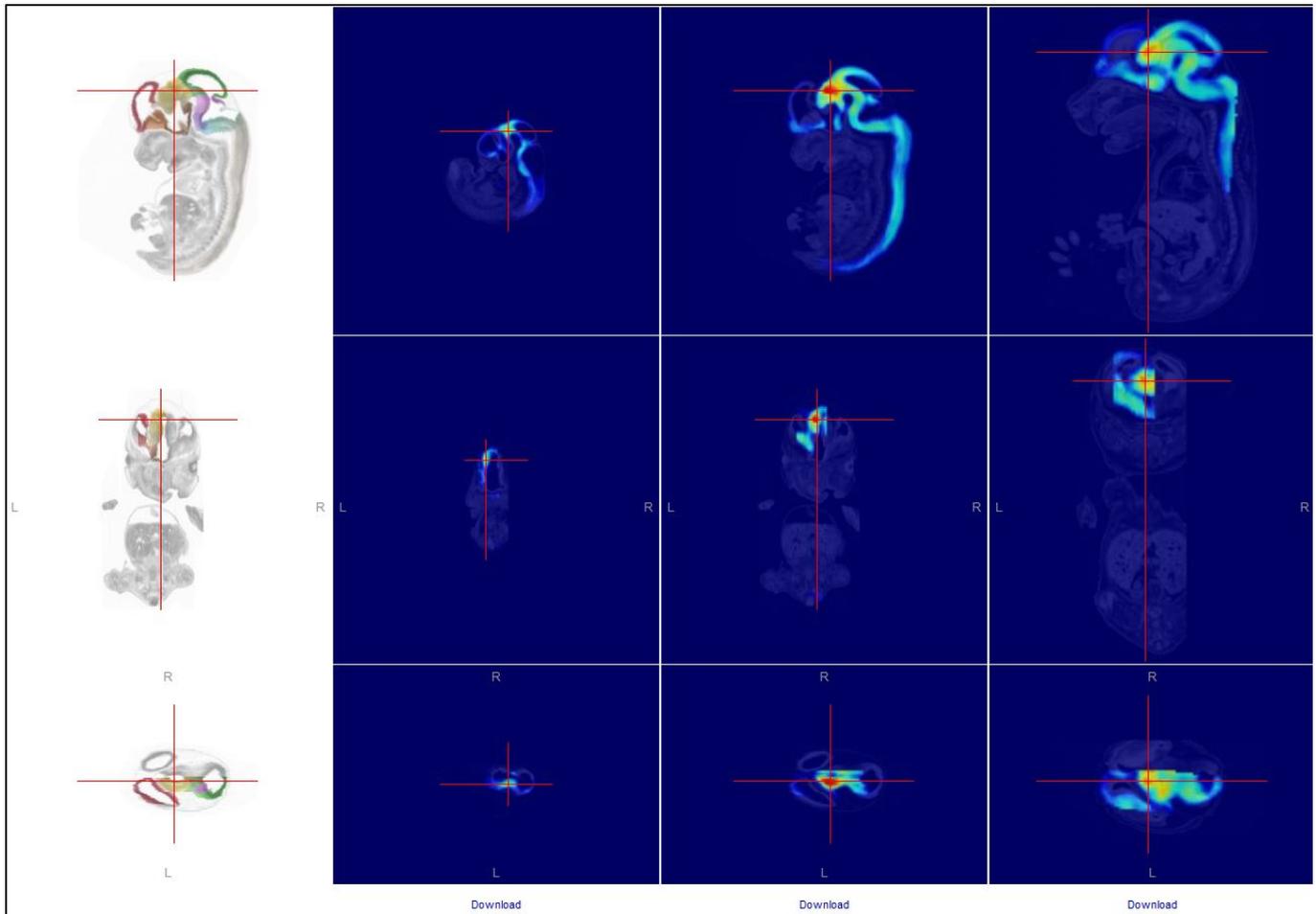
AGEA is an interactive relational atlas based on spatial correlations of gene expression data for ~2000 genes in the Allen Developing Mouse Brain Atlas.

AGEA for the Developing Mouse Brain is used to understand how voxels of the brain are related by gene expression (Correlation), and to find genes expressed at a particular voxel (Gene Finder). Click on the AGEA tab to get started.

### Correlation Mode



In correlation mode, use the seed selector to select a starting age by clicking on your age of interest. The next three columns will show you the age you selected flanked by the nearest developmental ages. Also shown in the column headers are the structure and location of the selected voxel and the Pearson's correlations (please see Informatics whitepaper available from the [Documentation](#) tab).



Select a "seed" voxel using the cross hairs in the left hand column from one of the planes of view. The three columns to the right show correlation maps of how other voxels are related to the seed voxel based upon the gene expression of approximately 2000 genes.

## Seed Selector

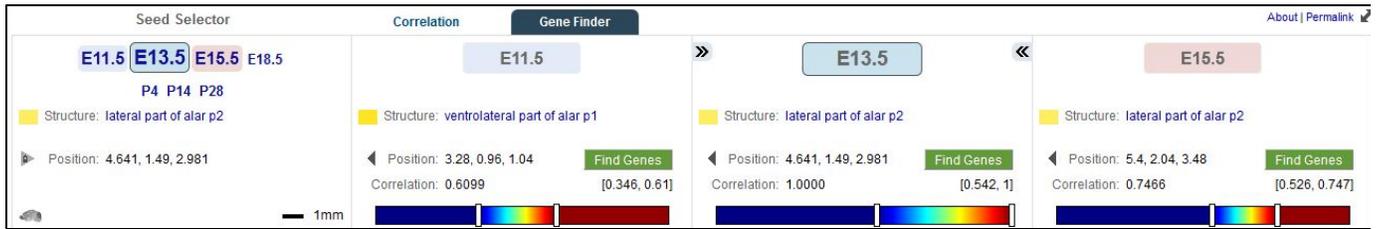
To begin, select an age from the upper left hand corner. Maps of the age-appropriate reference space are shown in sagittal, coronal and horizontal planes in the left-most column. Navigate by clicking on a spot in one plane of view; this will appropriately adjust the other planes of view. Click on the maps to position the red crosshairs on the voxel of interest. Maps are only available for one brain hemisphere, shown by the overlay of reference atlas colors on the Nissl reference space.

## Correlation Maps

The correlation maps are shown as heat maps (red is the highest correlation to the seed voxel) with one column for each age. The age chosen with the seed selector is shown, as well as the next youngest and the next oldest ages.

## Gene Finder

Once a seed is selected and correlation maps are shown, you can retrieve a list of genes enriched in the region correlated to the seed voxel.



First, click on the "Gene Finder" tab. Then, click on "Find Genes" for the particular age you are interested in.

## Search Results

Using the Gene Finder function in AGEA will return a list of genes that fit your search criteria. Searching for genes at an age other than the age chosen in the seed selector will return a list of genes that fit both ages.

- Gene Search
- Annotation Search
- Anatomic Search
- Temporal Search
- Extended Studies
- Gene Classification
- AGEA Gene Finder

Seed Point: 4600,1500,3000 Search ?

Expression Threshold (1):

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	Fold Change	Gene Sym.	Gene Name	Seed Location	Map Location
<input type="checkbox"/> E13.5 <input type="checkbox"/> E11.5	0.131	Tcf7l2	transcription factor 7 like 2, T cell specific, HMG box		
<input type="checkbox"/> E13.5 <input type="checkbox"/> E11.5	0.062	Irx1	Iroquois related homeobox 1 (Drosophila)		
<input type="checkbox"/> E13.5 <input type="checkbox"/> E11.5	0.062	Tal1	T cell acute lymphocytic leukemia 1		

Each column includes:

Column	Description
	Allows you to select one or more experiments to view by clicking "View Selections"
Fold Change	Fold change of the gene expression in the selected voxel over the thresholded voxels
Gene Symbol	Clicking on this link will take you to the <a href="#">Gene Detail</a> page
Gene Name	Clicking on this name will seed the right panel with the 3-D thumbnail images of this experiment, and allow you to search for other similar genes from the <a href="#">Correlation Search</a> box

Seed Location	A representative image from the age selected in the Seed Selector
Map Location	(If two ages were selected) A representative image from the age selected with Gene Finder

Please refer to the Informatics Data Processing white paper available from the [Documentation](#) tab for additional details.