

NEWS

# Finding the right (synaptic) partners

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Researchers are narrowing in on a pool of genes that may be involved in helping neurons find their targets, according to unpublished work presented today in a poster session at the **Society for Neuroscience meeting**.

The work focused on neurons in the mouse retina, the inner layer of the eye, but has implications for how a neuron finds its neighbors in other brain regions, said **Joshua Sanes**, a professor of cellular and molecular biology at Harvard Medical School, who led the work.

In the past decade, Sanes and collaborators have worked with chick embryos to uncover some of the recognition proteins — such as Sidekick and Down's syndrome cell adhesion molecule or DScam — that allow a neuron to find its proper target in the inner plexiform layer, an area of the retina with layers of cells that process visual input.

In the new study, the researchers found that mouse neurons are not as specific to different cell layers as are the neurons in chick embryos. Still, they were able to identify a handful of layer-specific cells in the retina, said Jeremy Kay, a postdoctoral fellow in Sanes's lab.

Each cell type uniquely expresses 50-70 genes, including transcription factors, cell-adhesion molecules, and extracellular matrix ligands and receptors, all of which are believed to play a role in synapse formation and cell recognition.

Kay plans to pinpoint the set of genes for each cell type, and determine whether the genes are important for helping the cells find specific layers.

Characterizing the genes that help neurons find targets may help researchers understand how the wiring of neuronal circuits can go awry in people with autism, Sanes said.

For all reports from the Society for Neuroscience annual meeting, [click here](#).

