NEWS

Video: Playing with light to manipulate the brain

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Observing the effect of genes on behavior used to be limited to one long and irreversible step. Researchers would painstakingly create a mouse lacking a gene and then observe the resulting behavior. These days, **optogenetics** allows researchers to turn genes on and off almost instantly in a live animal using waves of light.

The technique was first introduced more than five years ago. But if the throngs of students around the optogenetics posters at the **2012 Society for Neuroscience annual meeting** in New Orleans are any indication, excitement over the technique has not waned.

Edward Boyden, associate professor of bioengineering at the Massachusetts Institute of Technology, played a big part in **raising optogenetics' profile**. His laboratory had a hand in 16 optogenetics posters presented at the meeting.

In a video interview with SFARI.org on Monday, Boyden discussed new tools his lab is developing to refine optogenetics.

These include a non-invasive technique that allows researchers to target neurons in the brain without puncturing the skull, and new molecules that respond to light in the far spectrum of the color range. The latter will allow researchers to control two types of neurons at a time.