

# Understanding Brains

Grant Type: **Dollar support**

Dollar Amount: **Multiyear grant, \$500,000 over 8 years**

Foundation Name: **Braude Foundation**

## What was your objective with the grant or initiative?

The purpose of this grant was to fund basic research into the fundamental workings of brain neurons. Neurons perform many functions and are complex— one mystery is what controls the growth of neurons and synapses. It is difficult to get grants that pay for expensive equipment. For example, the National Institutes of Health (NIH) grants cover salaries but not equipment; also, such grants are narrow and restrictive. So, the Braude Foundation made a multiyear grant for a principal researcher at Johns Hopkins University to buy a confocal spinning disk microscope so researchers in the lab could examine nerve cells over several days.

## What were the results of this grant or initiative?

Having an advanced microscope allowed the researchers to observe the growth of synapses. They discovered that a growth mechanism previously thought to happen only in embryos also occurred in adult nerve cells. The results were published in the academic journal *Cell*. This discovery led to a biological explanation of autism that characterizes autism spectrum disorders by key biochemical pathways and also led to further research into a blood test for autism.

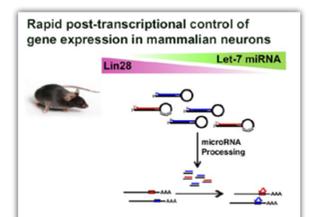
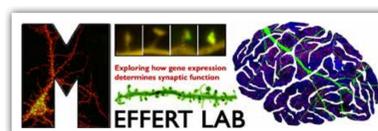
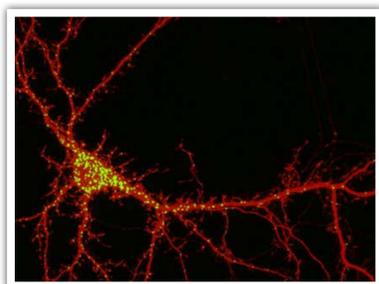
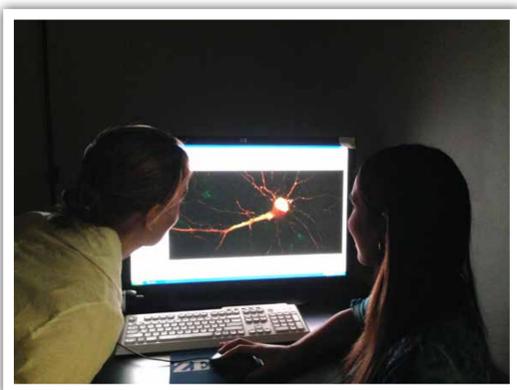
## Why would you say this grant or initiative had outsized impact?

This grant of more than \$500,000 over 8 years allowed a research team to make a discovery that might not have happened had they gone through the typical channels to request government funds. Now, because of the discovery, the researchers are able to seek funding from sources that fund autism.

One of the lab's scientists explained how this grant had an impact:

**Sustained, flexible support is invaluable.** Scientific questions usually do not yield their secrets immediately, and it takes sustained effort to reveal new mechanisms and pathways. Flexible support can better suit the needs of the lab and the science at a particular point in time and create greater impact. In addition, small funders can allow exploratory research to delve into innovative and promising areas where there is not yet sufficient data for NIH support.

**Interactions with small funders also provides a bidirectional educational experience.** From the perspective of a scientist, I see how your sustained interaction with our lab has helped trainees see the importance of understanding how to communicate with a broader audience (which has long-term impacts for society and the perceived value of science). This meaningful experience has catalyzed several members of our lab to engage in further interactions with community members outside of science.



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