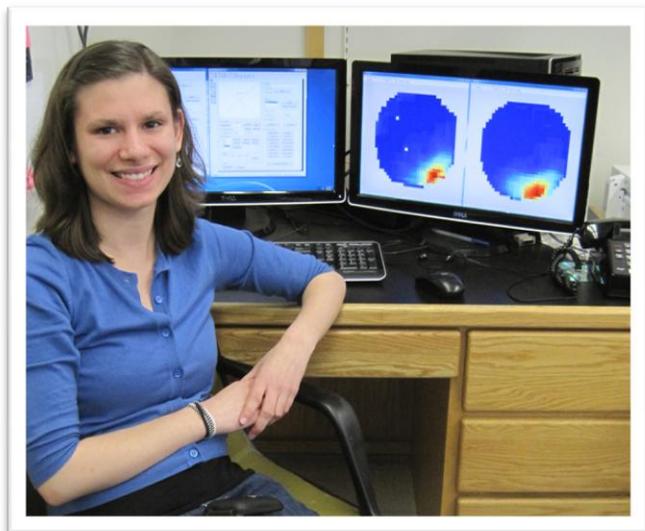




Student Research Spotlight: “Memory. What?”

An Interview with Jasmine Dickinson*, Department of Biology



Jasmine Dickinson, University of Oregon neurobiology student and *OUR Journal's* first featured student researcher, is a winner of the UO Center for Teaching and Learning's prestigious Undergraduate Research Fellowship, the UO Biology Department's Mary G. Alden Award, and the Paul and Helen Weiser Memorial Scholarship. She was selected to pursue her research at the UO's Summer Program for Undergraduate Research (SPUR), and her three years working in Dr. Cliff Kentros' neurobiology lab earned her authorship on a poster presented at the Society for Neuroscience's annual conference last November. This fall, she will present another poster in New Orleans as its first author—a tremendous accomplishment for an undergraduate just finishing her junior year.

What launched Jasmine's academic career? “Scary movies,” she says, as she toggles through screens cluttered with colorful data, feedback from hours of monitoring brain activity in mice. “I saw *The Exorcist* when I was ten, and was fascinated with how the neurologists tried to diagnose the demon-girl. The idea that something so complex as human behavior could have a scientific basis is incredibly interesting,” she told *OUR Journal*, adding that, “Obviously, real neuroscience doesn't have much to do with being possessed by demons.”

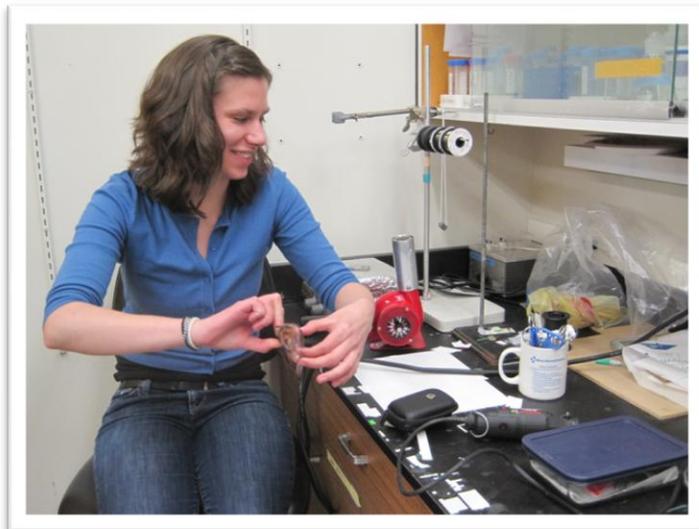
When *OUR Journal* visited Jasmine at work in the Kentros Lab, she wasn't wearing a white lab coat, peering into microscopes, or bubbling anything over a Bunsen burner. When Jasmine

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does research, she is often at a computer, running analyses and sifting through electrophysiological data in hopes of finding evidence of something called a “place cell.”

The Kentros lab studies place memory and spatial coding. Inside a part of your brain called the hippocampus (which is Greek for “seahorse,” although it looks more like a kidney bean), specific cells encode your location and movement. Ensembles of these cells form a map of the specific spaces you experienced. Because these “place cells” fire in the same pattern upon repeated exposures to the same space, neuroscientists can infer that these cells remember where you’ve been. The network dynamics of spatial coding gives neuroscientists like Jasmine a lens with which to analyze memory as a broader phenomenon, since the hippocampus is critical to the formation of new memories.

Jasmine’s project centers around the question of how cells that feed into the hippocampus, which code for space in general, translate that information into memories representing the particular places you have been.



Jasmine hasn’t forgotten how she got where she is today. “Science isn’t something that happens alone,” she explains, “There’s no solitary ‘Eureka!’ moment. It’s something you do every day, with a whole team.” One important teammate is Jasmine’s mentor, lab Research Assistant Aldis Weible.

“I am so completely indebted to Aldis and everything he’s taught me,” Jasmine says as she shows *OUR Journal* the repertoire of skills which, under Aldis’ guidance, she has developed in the Kentros lab. For example, Jasmine is able to wind wires into bundles thinner than a single strand of hair, which she then implants directly into mouse brains to measure the activity of individual living cells. “It’s really discouraging to spend hours trying to get the wires to do what you want, only to have them break or bend the wrong way. But you just keep going, and try not to make the same mistakes,” she says.

As her mentor, Aldis is patient in helping Jasmine learn from those mistakes. “I have the advantage of being on both sides. I did undergraduate research [and] that was a great opportunity; it let me have good hands-on experience with research.” But Aldis expects students to put as much effort into learning research techniques as he does in teaching them, saying, “When an undergraduate does apply themselves well to the task at hand, that is someone that I want to help see succeed...With respect to Jasmine, she *has* put the effort forth.”

And that effort is paying off. In October, Jasmine will travel to New Orleans to present her research to the Society for Neuroscience. “The conference will be an unofficial interview process for graduate schools. Plus...it’s New Orleans! Mostly I just hope not to make a fool of myself by talking to someone who’s really important without realizing who they are. Reading nametags will be key.”

And Jasmine’s advice to other undergraduates interested in research? Get started early and don’t give up:

“I’ve noticed a general misconception that you have to have to be a genius in order to be successful in science. Those people are definitely out there, but your engagement, work ethic, and willingness to learn matters so much more. Even if you’re not interested in being a scientist, you can still take an active interest in new research and the process of discovery.”

That’s a philosophy that *OUR Journal* can agree with, and so we are proud to present Jasmine Dickinson in our first student researcher spotlight.

OUR Journal would like to thank editors Alex Fus and Vishesh Khanna for compiling the research spotlight.