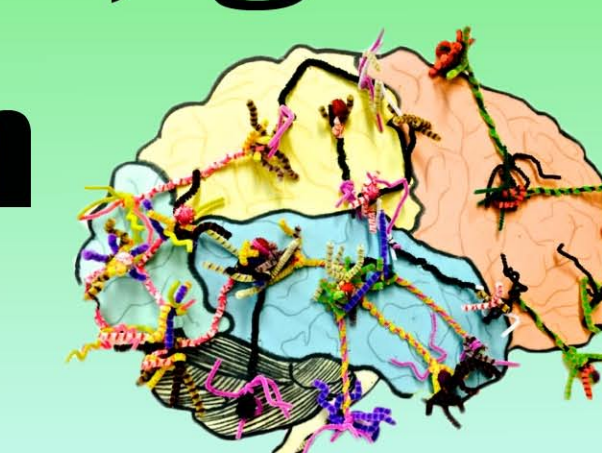
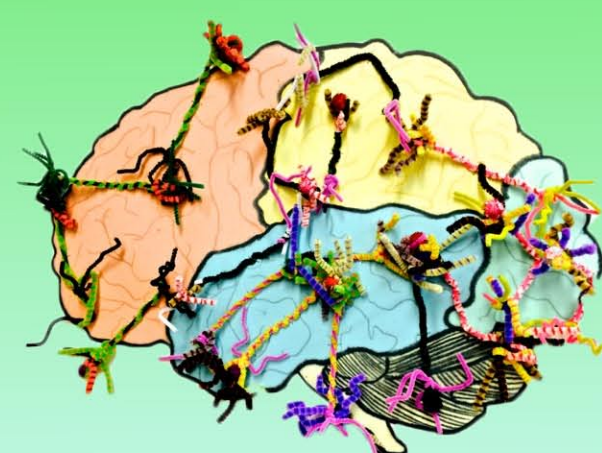


# NW Noggin: Collaborative neuroscience outreach in Portland and Vancouver - undergraduates, graduates, scientists, middle and high school students work together to learn about the brain



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## Growing In Networks!

In urban areas there are often several universities with thriving research and education programs in neuroscience, along with public schools teaching science to K-12 students. There are also, typically, several dedicated art colleges and organizations, and a vibrant arts community eager to contribute to STEM educational efforts (STEAM). Science relies on significant public investment, so engaging the broader community is key to communicating discovery in science, and building support for further investment in neuroscience research.

Yet despite a strong shared interest, these various students, disciplines and the broader public rarely have the opportunity to directly interact. Here we describe a successful effort ([nwnoggin.org](http://nwnoggin.org)) to involve them all in learning about the brain.

There are many positive reasons to get everyone together. Some neuroscience graduate students are isolated, because their institution lacks undergraduate programs, as in the case of Oregon Health & Science University (OHSU) in Portland, Oregon. Graduate students may struggle to gain teaching experience and share their work with a broader audience. They are less competitive for jobs that require classroom or outreach expertise.



Undergraduates are often curious about graduate opportunities in neuroscience, which may be scarce (or non-existent) at their own university. They have questions about what research entails, what experience they need to acquire before applying to programs, and what studies are currently funded and underway. The chance to work directly with graduate students improves their appreciation of graduate options, and exposes them to students involved in supported research. Outreach also benefits undergraduates by reinforcing neuroscience concepts learned in class.

In addition, studies suggest that, during middle and high school, students become excited or discouraged by science. Fostering enthusiasm for inquiry into the mechanics of the natural world, including the brain, can enhance interest in science. Efforts to reach the broader public about scientific discovery contributes to fascination, understanding and support for research and education about behavior, and the brain. Effective integration of art projects and activities into outreach efforts increases student engagement, makes learning personally relevant, and allows students to explore concepts by creating objects and images they can share with family and friends.

Last summer we brought together graduate students from OHSU and Washington State University in Vancouver (WSU-V), who participated in a supervised teaching practicum, with undergraduates from Psychology departments at Portland State University and WSU-V. The undergraduates enrolled in advanced neuroscience classes, and studied neuroscience concepts and techniques before working with the graduates.

Graduates and undergraduates, along with art students from the Pacific Northwest College of Art (PNCA), used this experience to collaboratively develop successful, sustained courses for students at three Portland Public middle schools during summer, 2014. We also partnered with a federal grant program, GEAR UP, to excite and inform 160 diverse, academic priority high school students about education, research and career opportunities in neuroscience and art. Students visited laboratories at OHSU, and met with working scientists at the Oregon National Primate Research Center.



Skyview High School



Gardner School of Arts and Sciences



CAM Junior and Senior High School



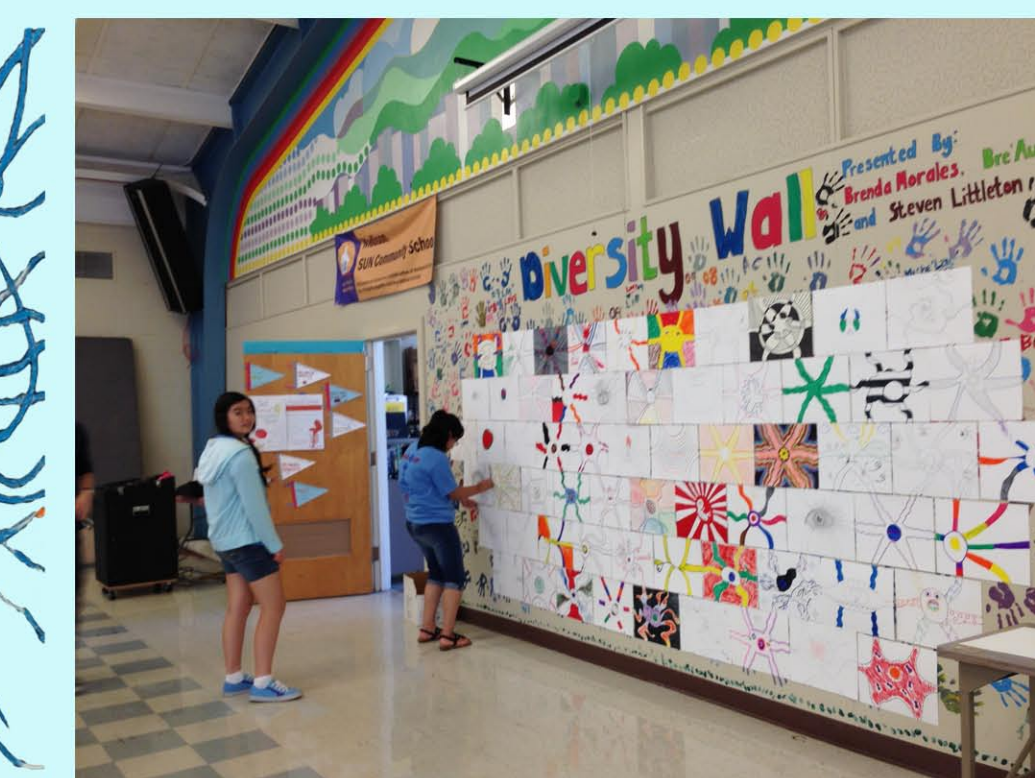
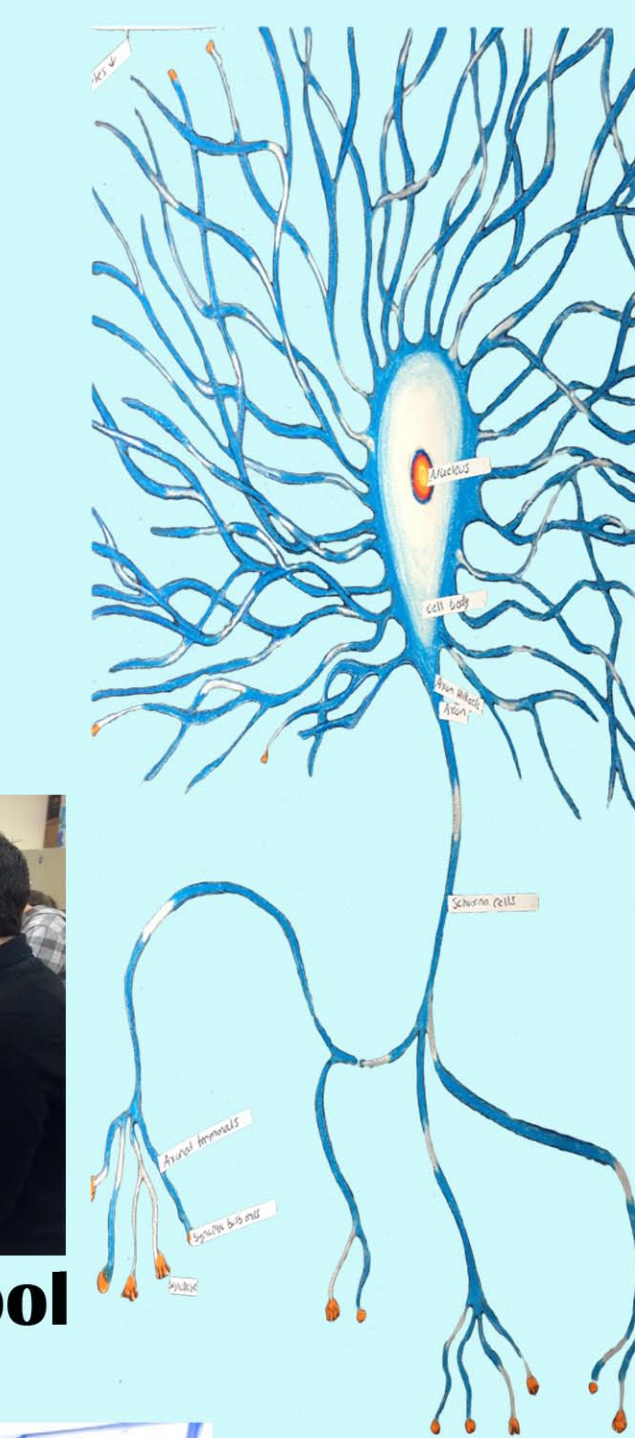
MESA Day



Velo Cult Lecture Series



Cascade Middle School



HeLa High School



Sabin K-8



Madison High School



Brain Awareness Lectures



Jason Lee Middle School



Patton Middle School



OMSI Brain Fair



Franklin High School



Harrison Park k-8

