As a non-tenure track teaching faculty (NTTF) member and neuroscience educator, I strive to provide my students with in-depth, relevant instruction and mentoring in neurophysiological psychology. My work is informed by knowledge of the brain and behavior, and by the conviction that students learn best through direct engagement and multi-generational, cross-disciplinary creative exploration of concepts and ideas. These learning experiences attract diverse students, build confidence and implicit skills, and lead to better understanding, retention and discovery.

Over the last five years, my goal has been to contribute to the quality of the undergraduate program in Psychology by creating an immersive undergraduate “world” organized around behavioral neuroscience. This “world” not only includes sequenced courses but also incorporates a range of field-based opportunities for learning and mentoring for our students. I work to promote active, engaged, and applied learning by involving students in extensive K-12 and community outreach and participation in research and professional conferences. My efforts are aimed at public science that promotes student connection and inclusion through diverse experiences, including social media, policy links, and photography. With my collaborators, I strive to create innovative, arts-integrated opportunities for students to use their growing knowledge to engage with the broader world.

This narrative addresses the six criteria described in Psychology’s PRT Guidelines for consideration for promotion from Senior Instructor I to Senior Instructor II: (1) excellence in undergraduate instruction, (2) high quality undergraduate mentoring and advising, (3) maintaining and expanding disciplinary expertise and breadth, relevant to instructional roles, (4) ongoing professional development and engagement with the pedagogy of the discipline, (5) the ability to play a lead role in improving the undergraduate experience and program, and (6) engaged participation and leadership in departmental and self-governance activities.

1. Excellence in Undergraduate Instruction

I am committed to excellence in teaching. I care about my undergraduate students, who are discovering their interests, and I enjoy inspiring and sharing their developing enthusiasm for learning about the brain and behaviour - why we feel and perceive and act the way we do - through critical analysis of brain research. To provide evidence of excellence in undergraduate instruction, I present and discuss my course evaluations, describe my teaching philosophy and classroom practices, and end with a statement explaining my commitment to diversity and inclusion.

Evidence of excellence in teaching. My teaching has been recognized by four John Eliot Allen Outstanding Teaching Awards, including two in Psychology (2017 and 2013), and two in Speech & Hearing Sciences (2010 and 2007), where I developed and then taught the Neurology of Speech and Hearing course (SPHR 451) from 2001 through 2012.

Course evaluations. I teach three courses per quarter, with a cumulative rating (on a scale of 1-6) of 5.6 for Introduction to Neurophysiological Psychology, 5.6 for Advanced Neurophysiological Psychology, 5.5 for Perception, and 5.8 for Psychopharmacology. As shown in Figure 1, my student course evaluations are consistently in line with or above departmental averages for expertise regarding content, course organization, quality of assessments, course management, and classroom instruction.

Overall, students have generally been positive about their experiences in my classes. Students seem to appreciate my enthusiasm, knowledge of course material, and integration of multidisciplinary approaches. Representative positive open-ended feedback from students includes:

• “Really loved this course. Bill’s enthusiasm is infectious. The mix of art and science made the
class a lot more interesting. Gave me a different perspective on the world and crystallized career objectives." –from Perception (PSY 347), Spring 2018

- “The strengths of this course are that the material is presented in an interesting, engaging way. The instructor knows what he is talking about, speaking passionately and answering questions effectively.” –from Psychology as Natural Science (PSY 200), Spring 2018

- “Passionate professor – really cared about the students and ensured that general concepts were internalized by the students. Everything about this course was great.” –from Psychology as Natural Science (PSY 200), Spring 2018

- “Love Prof. Griesar. This is the class I struggled in the most, but also learned the most in. His passion for the material is inspiring.” –Psychopharmacology (PSY 410), Spring 2018

- “Challenging material is presented in a clear and enthusiastic manner. Questions are always encouraged and the professor is always very passionate about teaching.” –Advanced Neurophysiological Psychology (PSY 410), Winter 2018

At the same time, I have also been able to use students’ feedback to improve my teaching. Representative critical open-ended feedback from students includes:

- “I would have liked an opportunity to do a deep dive on a chosen topic with a research paper.” –from Perception (PSY 347), Spring 2018

- “More quizzes to help grades.” –from Psychology as Natural Science (PSY 200), Spring 2018

- “At times the instructor seemed to be easily sidetracked by questions during lectures.” – from Psychology as Natural Science (PSY 200), Spring 2018

- “I would improve on this course by more “hands on” or “peer-based discussion.” –Psychopharmacology (PSY 410), Spring 2018

- “Could use an intro course to basic neuroscience so that this class doesn’t need to teach the basics. It is a nice refresher though.” –Psychopharmacology (PSY 410), Spring 2018

- “A little bit more clarity on what and how things were graded. Overall I understood the expectations but got a little bit confused on the details. And Bill speaks faster than anyone I’ve ever encountered!” –Advanced Neurophysiological Psychology (PSY 410), Winter 2018

In reflecting on students’ concerns, I acknowledge that I’ve struggled to balance my desire to cover all of the required course material while also devoting significant class time to answering student questions. Research on how we perceive, feel and behave is inherently fascinating, and complex, and students are naturally curious about learning more. I now explain to students why I take most questions during class, because I believe they often indicate that other, less vocal students, share the same interests, and a similar need for further clarification. I try to engage other students in answering these questions, too, in order foster more “peer-based” discussion. I updated d2l course pages with clearer explanations of the details of grading procedures and the rubrics used in scoring. In addition, as I’ve figured out the specific areas that students have questions about, I’ve tried to add more relevant descriptions, short video lectures, and resources related to these topics online. It is difficult to add more in-class activities or assessments, as time is often limited. I also know that as a native New Yorker I speak rather quickly, so I always implore students to please slow me down if the material is being presented too rapidly during lectures.

Teaching philosophy. My teaching is based on “applied neuroscience.” I believe that students come to understand behavioral neuroscience (i.e., the biological basis of perception, cognition, behavior and development) through both classroom-based learning activities and field-based learning
opportunities. Students learn substantive information and gain useful implicit skills by engaging directly with community organizations, K-12 classrooms, research laboratories, artists, policy makers, and the public at large. This approach also introduces undergraduates to diverse educational and career options. Perhaps most importantly, it offers students opportunities for self-exploration, that is, opportunities to gain insights into how their own strengths - in psychology and neuroscience teaching, research, policy, and the arts - might contribute to a greater understanding of the brain and behavior, and to a better world.

I aim to facilitate the engagement and training essential for subcortical and cortical networks to develop rich, responsive structures for understanding, learning, and performance. I employ a range of learning activities. These include compelling classroom exercises (including creative art projects) and multiple field-based opportunities for students to express themselves, make mistakes, tell their own stories, listen to others, and ask and answer questions. I know from research and experience that active engagement and mistakes are essential for developing brains. Everybody makes mistakes. They are key to our advancement, to predicting consequences, to changing our neural network connections that let us remember, consider, get better, and respond more effectively. If we hide our mistakes, neglect to admit them, or double down on our errors — we stagnate, and stew. We also fail to offer helpful stories and examples for others. Mistakes are instructive. They help you anticipate and avoid future errors, and may point you in new, more productive directions. Critical synaptic changes occur during the practice and improvement of implicit skills, partly in a set of subcortical (“below” the cortex) structures known as the basal ganglia, and in their connections with developing networks in cortex. My conviction that students learn through engagement, social interaction, and self-reflection has led me to create a wide range of learning experiences tailored to their strengths and interests, both inside and outside the classroom. I work to develop multiple modes for learning, including public lectures, art projects, story-telling, teaching others, videos, blogs, photography, and so on.

**Classroom practices.** I love teaching. My classes are a mix of lectures, discussions, and in class projects, including art projects related to exploring cognitive and perceptual aspects of brain function. Twisting your own brain cell out of colorful pipe cleaners teaches you essential neuron components, while encouraging creative, personally relevant engagement and exploration. What does it mean to add more dendrites? How does a longer axon affect neuron function? I’m committed to welcoming everyone interested in learning more about brains into the field, and I enjoy introducing and defining complex (often off-putting) terms by referencing their historical roots and development, and by telling stories about their origins (in labs, journals, and other disciplines). These stories and examples help students more thoroughly understand and remember what these concepts mean. I also ask students to explain their understanding of ideas and topics in their own words, and not through rote definitions or “elevator pitches.” I regularly ask for additional examples of topics from my students; I think these practices recognize and value their contributions, allow the class to learn more about students’ experiences, and make the material more memorable and relevant to each one.

I am particularly excited to discuss new discoveries and to bring in new research, much of it conducted in regional labs, such as the ones at OHSU and at the Oregon National Primate Research Center. In fact, many former students now work in these labs, after learning about particular studies that are currently underway. In advanced courses I integrate OHSU graduate students, both as “near peer” role models for undergraduates and as guides to what’s being funded for research. Instead of relying on expensive, often outdated texts, I scaffold my courses with particularly detailed online D2L course websites. On D2L I incorporate short, accessible introductions to classroom topics, links to relevant research, organizations, and opportunities for community outreach. I strive to add more diverse examples of research and researchers than are found in many textbooks. I also add my own recorded video lectures to offer students further options for independent review.
Most of my classes are large (more than 60 students). I administer both quizzes and exams, and also incorporate creative assessments, including art projects and coloring assignments. These additional options allow students to explore topics independently, adding their own perspectives and making the material more relevant and memorable for them. Quizzes are typically low point value, requiring some effortful recall of short answers to questions on material discussed in recent classes, while exams are worth more, and cover more, but rely on multiple choice, which many students find less difficult. Students are welcome to prepare a one-sided, 8.5” x 11” inch sheet of notes and bring this to larger exams. This helps reduce stress during the actual assessment, and encourages students to “chunk,” study, and organize course material before major tests. Offering multiple forms of assessment, including opportunities for creative exploration of course material, engages more students in learning about behavior and the brain.

**Value of diversity and inclusion.** Neuroscience can be intimidating, so it is a high value to me to create a learning environment that is inclusive. As a neuroscientist, I understand the vagaries of brain development, the importance of risk-taking and making mistakes for learning, and the diversity inherent in our biological underpinnings, including our ability to regulate emotions and perceive social aspects of our environment. As a gay, married father of two Cambodian-born teenagers who was also one of the plaintiffs in the federal case (Geiger v. Kitzhaber, 2014) that brought marriage equality to Oregon, I am acutely aware of issues regarding bias and inclusion, and I strive to make my classroom a welcoming space for all.

In classes we discuss neuroscience research on bias (including implicit bias) and brain development, focusing on the complexity of social environments and how brain networks organize to drive quick, but not always accurate assessments of people and situations. We run in-class experiments and debate social consequences (including ethical lapses in research) to explore these issues further. I have my own biases, and I regularly try to reach out and consult with others about my teaching, including fellow faculty, those from different disciplines, backgrounds and institutions, and my own dedicated teaching assistants. For example, I typically share student requests with graduate TAs for their feedback before making a decision, even when I’m pretty certain how I’ll respond. Sometimes, however, I change my approach based on their perspective.

I am quick to admit mistakes, and I try very hard to meet with students who have questions and concerns. I invite students to explain their thinking on particular questions, and I am open to awarding credit if they make a compelling case. However, my classes tend to be large, and I recognize how difficult it is to provide individual attention to everyone who seeks it (my office hours are sometimes not long enough to accommodate everyone who shows up). One approach I’ve taken is to develop more online (D2L-based) resources, including detailed course videos to supplement classroom instruction and provide sufficient review opportunities for students.

The value I place on diversity and inclusion are apparent in the course material we cover in class. But I think that they also permeate all the decisions I have made about how to organize students’ learning experiences. For example, when we select schools and other venues for field-based learning opportunities, we target those that serve low income ethnic minority and immigrant students, or homeless youth, or Native Americans. We raise money to send students to national conferences, knowing that many are financially strapped. Most important to me, I want to make neuroscience, which is a discipline that is currently populated overwhelmingly by white males from middle and upper class backgrounds, accessible to everyone. Many neuroscience classes offered in Biology have high “D-W-F” rates, indicating that students are failing or withdrawing from those courses in high numbers. My courses have low “D-W-F” rates. I try to show the students who take my classes that they are welcome in this discipline, that they can learn this fascinating material, and that they themselves have much to offer the science.
2. Undergraduate Mentoring and Advising Activities

I provide high quality mentoring and advising to undergraduates in four ways: (1) via extensive informal mentorship in my role as an instructor, (2) through formal service on Psychology and Honor’s College thesis committees, (3) via career mentorship with the NIH BUILD EXITO program, and (4) as the faculty advisor to the PSU Neuroscience Club.

I view advising and mentoring undergraduates as a cornerstone of my work. I have taught thousands of graduate, undergraduate, and K-12 students since 2000, and provided informal advising and mentoring to many students during these courses. Through the Psychology department at PSU, Psychology and Neuroscience at WSU Vancouver, and the NIH BUILD EXITO program at PSU/OHSU, I have also served as a formal mentor for many more students. Over the last two years, I’ve been the PSU undergraduate honors thesis advisor for three students, Jesse Hamlin, Aaron Eisen, and Kayla Townsley; and a BUILD EXITO Career Mentor for eight more, Rebekah Alexander, Heather Hamilton, Deza’Rae Collins, McKenzie Figuracion, Kayla Townsley, Maverick Johnson, Isabella Maranghi and Sawyer Perry. I also served as a Master’s thesis committee member for Emily Weiss in Psychology.

To provide a sense of my advising and mentoring, I describe three of my recent mentees below (more details are on page 10 of my c.v.):

• **Jesse Hamlin**, whose honors thesis I supervised, excelled academically, and is also an accomplished musician. He performed at the Doug Fir and The Ford Gallery Mechanical along with displays of EEG recorded from listeners’ brains. Jesse organized a public celebration of music, art and research at the Alberta Rose Theater in fall 2017, known as Noggin Fest, which raised enough money to fly eight undergraduate outreach volunteers to Washington DC for the annual Society for Neuroscience conference (it also paid for housing for a week for 21). Jesse’s thesis examined the effects of music on the adolescent brain, and he piloted his curriculum at Portland’s p:ear homeless youth center in spring 2018.

• **Sulema Rodriguez** is an academically gifted NIH BUILD EXITO scholar, and she helped to develop a Noggin presentation on the Hispanic/Latino heritage of neuroscience and the brain benefits of multilingualism for staff at the nonprofit Latino Network last fall. She’s visited Latino students in PPS high schools, helping deliver instruction on the brain and behavior. Sulema also accompanied Noggin for 2017 outreach in DC, presenting to the House Neuroscience and STEAM caucuses on arts-integrated STEM education. During a Noggin tour of brain-related art at the NIH, we reached out to Dennis Drayna, one of the top researchers on the genetics of stuttering. Sulema is a person who stutters, and spent summer 2018 working in Bethesda through a paid NIH internship in Dr. Drayna’s lab.

• **Jacob Schoen**, was an undergraduate in Psychology, who not only presented on science outreach and engagement to the House Neuroscience and STEAM caucuses in the U.S. Congress, at the Society for Neuroscience conference, and in multiple K12 classrooms throughout the Northwest and DC areas, but he’s also worked through NW Noggin as an art preparator, hanging colorful networks of pipe cleaner neurons at the Portland Art Museum, the Phillips Collection, and in the Psychology office at PSU. Jacob is now employed by the Oregon National Primate Research Center at OHSU.

**PSU Neuroscience Club.** I serve as the faculty advisor for the PSU Neuroscience Club, one of the fastest growing student organizations on campus. The Club was awarded a SALPie (Student Activities and Leadership Programs) award in 2014 as the “Student Organization of the Year,” and again in 2017 as “Service Organization of the Year.” I was also awarded the “Faculty/Community Partner of the Year” SALPie Award in 2016. The Club meets weekly, and presents regular “Research in Review” seminars where current studies are presented and discussed. The club also funds travel for members to participate in conferences, including the Society for Neuroscience (SfN) - both the Oregon Chapter
where I serve as the PSU SfN Chapter Representative, and at national conferences in San Diego, New Orleans, Chicago, and Washington, DC. It was a highlight when Neuroscience Club members were recognized for their “Best Poster Presentation” at the annual meeting in 2016.

This fall the club coordinated the second annual Noggin Fest, a two day fund-raiser and celebration of neuroscience research and art, featuring 13 live bands, artwork by celebrated science artists including Kindra Crick and Sienna Morris, a room-sized neuron installation (with brain cells made from balloons!) by Sarah Vitaly, and multiple science speakers, including Eric Fezco from OHSU and Michelle Espy from the Los Alamos National Labs. Together, students raised $3000 to support upcoming poster presentations and outreach during this fall’s SfN conference in San Diego.

3. Maintaining and Expanding Disciplinary Expertise and Breadth: The Neuroscience Concentration

In this section I describe my involvement in developing a neuroscience concentration in Psychology, including a justification for the concentration, the creation of a range of relevant courses and course sequences, and the design of extensive field-based opportunities for learning.

The need for an undergraduate concentration in neuroscience at PSU. The nervous system is central to our perceptual, cognitive and behavioral experience. Thomas Insel, a recent Director of the National Institute of Mental Health (NIMH), has called for scientists “to transform diagnosis by incorporating genetics, imaging, cognitive science, and other levels of information,” and as we develop more sophisticated functional and structural techniques for understanding the brain, it is essential for psychologists to grasp the biology that underlies our psychology. In addition, several regional institutional partners receive millions of dollars in federal funding for neuroscience research, offering opportunities for undergraduates to pursue graduate and post-graduate studies. Two regional Congressional representatives, Democrat Earl Blumenauer (OR) and Republican Cathy McMorris-Rogers (WA), co-chair the House Neuroscience caucus, and Representative Blumenauer has referred to the Pacific Northwest as a “neuroscience powerhouse.” A third local representative, Suzanne Bonamici (OR), is Democratic co-Chair of the House Science, Technology, Engineering, Arts & Mathematics (STEAM) caucus. PSU undergraduates are also enthusiastic about neuroscience. In 2012, they formed SANE (Scholars for Awareness of Neuroscience Education) to call for more instructional opportunities in this field. The need for undergraduate training in neuroscience and innovative, arts-integrated teaching and community engagement is clear.

Creation of a range of courses in target disciplinary areas. I developed and have taught neuroscience courses at PSU consistently since 2000, when I began to offer classes in Speech & Hearing Sciences, University Studies, and Psychology. In 2011, I was invited by Sherwin Davidson, then Chair of the Psychology Department, to help develop an undergraduate concentration for Psychology in Neuropsychology/Neuroscience. Over the next 7 years, I worked with Sherwin and other instructors to develop the concentration that currently exists, consisting of 11 courses in Psychology and 10 from other disciplines (https://www.pdx.edu/psy/pathways-throughpsychology#Neuropsychology/Neuroscience%20Concentration).

Development and support of undergraduate course sequences or tracks of study. The concentration is built on one of the two introductory courses in psychology, namely, Psychology as Natural Science (PSY 200), which provides a foundation for the courses to follow. These include the core Introduction to Neuropsychological Psychology course (PSY 451), which focuses on regionally relevant research and techniques pioneered at OHSU, including resting state functional connectivity functional magnetic resonance imaging (rsfc-MRI) and diffusion tensor imaging (DTI). I created the Advanced Neuropsychological Psychology course (PSY 410), which directly integrates graduate students from OHSU to inform and educate our undergraduates (and myself) about current, federally funded research. Courses are designed to highlight community connections, and to provide
opportunities to learn about and engage with local resources. I also see significant value in exploring diverse perspectives and engaging our community on issues in class. Perception (PSY 347), for example, is co-taught by artist and University Studies adjunct instructor Jeff Leake, and involves visits to the permanent collection at the Portland Art Museum, while Psychopharmacology (PSY 410) incorporates a visit from Bret King, the Multnomah County Sheriff’s Deputy who developed the “Faces of Meth” program. (For more details on individual courses, see pages 7-8 of c.v.) Students also engage with their community through a Psychology course I developed called Neuroscience Outreach: The Brain in Real Life (PSY 410).

**Creation of field-based opportunities for learning.** As part of my efforts to enrich the neuroscience concentration, I have created a wide-range of learning opportunities outside the classroom. Undergraduates learn from direct engagement about how the issues they study in the classroom relate to current community concerns, and how research can inform more effective public policy.

More detail about the range of field-based learning activities is provided in section #5 (Role in Improving the Undergraduate Experience and Program).

### 4. Ongoing Professional Development and Engagement with the Pedagogy of the Discipline

In this section I summarize my efforts to challenge and expand my own knowledge of neuroscience through participation in professional conferences, classroom integration of new graduate researchers, community outreach with the non-profit I co-founded (NW Noggin), and my own creative scholarship on social media.

**Professional conferences and professional connections.** I strive to take advantage of every opportunity to grow, and improve my own teaching skills and community connections. I integrate current Behavioral Neuroscience graduate students from OHSU into my advanced undergraduate neuroscience courses to expose students and myself to cutting edge research. I attend and present at Society for Neuroscience (SfN) conferences, both national and as the Chapter representative for PSU. I feel honored to have been invited, along with Jeff Leake, to give the keynote address for Brain Awareness at the national SfN conference in San Diego this fall (2018). I am looking forward to this opportunity—I think it should provide both a wider venue for our work and a chance to connect with other teacher/researchers who are involved in arts-integrated STEM (“STEAM”) outreach. This is also a unique and welcome chance to obtain valuable feedback from experts on our multidisciplinary approach.

**NW Noggin.** A major venue for my own professional development (as well as for student learning and connection) involves community outreach through the art and neuroscience non-profit that I co-founded with artist and PSU adjunct instructor Jeff Leake. NW Noggin (nwnoggin.org) is an extensive partnership amongst community institutions that serve diverse school populations and the public at large, including PSU, and many additional area non-profits (e.g., Youth Engaged in Science (YES!), Schools Unitig Neighborhoods (SUN), the Regional Arts & Culture Council (RACC), etc. A complete list is available at: https://nwnoggin.org/collaborators/). Jeff and I started NW Noggin in 2012, which achieved 501(c)(3) nonprofit status in 2016. Our undergraduates join students from other area campuses to deliver or receive multi-disciplinary instruction on the brain and behavior, offering me the opportunity to mentor and learn more myself in diverse settings.

Through NW Noggin, I regularly (almost weekly) bring together PSU students with graduates and undergraduates from OHSU, WSU Vancouver, and the Pacific Northwest College of Art who develop and teach their own collaborative arts-integrated neuroscience courses for academic priority K-12 students, a majority of whom receive free or reduced priced lunch. Our efforts were recently recognized with an “Out of the Ordinary JUICE Award” from the Regional Arts & Culture Council in 2018. (For outreach examples from 2017-18, see pages 11-14 of my c.v.).
My own creative expression and contributions via social media. As a committed educator, I believe it is valuable to offer students access to information on neuroscience via a variety of “channels.” I enjoy sharing inherently compelling research on brains and behavior, and I want to offer students the chance to creatively “serve the city” (and beyond). I work to connect our undergraduates to graduates, artists, psychologists and neuroscientists, policy makers, K-12 students, and members of the public - including homeless youth and underrepresented minorities in STEM - through my outreach photography and posts on the website I built and maintain, nwnoggin.org. I try to enhance these posts with rich detail, including links to relevant NIH-funded research pertaining to the material that we present. I also created the @NWNoggin Twitter and Instagram accounts, and have built strong communities of followers (750+ on Twitter, 1400+ on Instagram), including the Dana Foundation, the American Brain Coalition, and SfN. These activities on social media add value to our students’ learning, at the same time that they allow me to connect with a wide network of like-minded professionals.

In summer 2017, Jeff and I participated in a PSU-sponsored Reddit session known as an AMA (for “Ask Me Anything”). We took questions from over 3000 active online Reddit participants, while more than 21,000+ viewers worldwide simultaneously engaged with the subject of arts integration in STEM (STEAM). Our AMA was temporarily the top Science Reddit AMA in the world. (For more information on media outreach activities, see my c.v., pages 2-3). These outreach activities not only serve our students and the community, they also provide opportunities for me to grow and learn more about the field.

5. Role in Improving the Undergraduate Experience and Program

In this section I will describe my efforts to improve and extend the undergraduate experience through arts-integrated neuroscience instruction, and the creation and independent funding of field-based opportunities for student learning.

Arts-integrated science learning. An important way in which I strive to enrich our undergraduates’ experience is by providing arts-integrated learning activities. Arts integration makes learning personally relevant. It allows open-ended exploration of scientific concepts, and offers teachers a broader palette from which they can differentiate their lessons. In fact, the Governor of Oregon recently declared Oregon STEM Week (May 7 – 11, 2018) as Oregon “STEAM” Week, recognizing the critical importance of the arts in STEM education. As mentioned previously, my collaborator in this work is artist and University Studies adjunct instructor Jeff Leake.

• Together we co-teach the Perception course (PSY 347) where we integrate arts projects and perspectives into the curriculum. We not only cover the neurophysiology of sensation and perception, but also examine how artists have demonstrated intuitive understanding of biological systems, and effectively capture and often direct perceptual experiences through art. This cross-disciplinary approach also helps engage a broader, more diverse student population in learning about the brain and behavior.

• Another example of a learning activity involving art, neuroscience, and public outreach is when our undergraduates in the Perception course created an extensive network of neurons from pipe cleaners, which now hang in the Psychology office. The addition of a giant anatomically accurate Styrofoam brain followed soon after. These activities excited and engaged our undergraduate participants and many expressed pride in their involvement. The objects they crafted also serve as useful learning tools for impromptu discussions about neurons and brains.

• Jeff and I also created a new three-course Freshman Inquiry (FRINQ) sequence on the Neuroscience of Creativity and Learning for the University Studies department. We piloted these courses in spring 2018, and they’ve been approved for the current 2018-19 academic year.
• Jeff and I also work with the Portland Art Museum, where we’ve formed a close collaborative relationship. For example, we developed a gallery space on the neurophysiology of visual perception (“The Nature of Seeing”) for the “Seeing Nature” exhibit of landscape paintings from the Paul Allen Family Collection, an exhibit that also travelled to the Phillips Collection in Washington DC. The panels from that exhibit, which include my text along with images from the Allen Institute for Brain Science, are on display in the Cramer Hall Psychology conference room at PSU. I’ve collaborated with the museum in the creation of educational outreach materials, and delivery of lectures and workshops on the neuroscience of olfaction, landscape perception, drugs, hallucinations, and visual art.

• I also routinely bring together graduate and postdoctoral neuroscience and psychology researchers and artists to collaborate on free public presentations of their work, to foster a better understanding of neuroscience through exploring applications in science, the community, and art. Jeff and I founded this series in 2014, and our free public lectures in diverse venues (including the former Velo Cult, a Northeast Portland bike shop and pub) are popular. Many PSU undergraduates come to learn more about current research, and help present real human and other animal brain specimens for members of the public to examine directly. This is always a powerful and fascinating experience, and encourages excellent questions from attendees. Recent topics have included the neuroscience of anxiety, depression, opioids, alcohol and relationships, stress, cannabinoids, synergistic effects of alcohol and caffeine, implicit racial bias, sleep and childhood academic performance, Parkinson’s disease, migraine pain, and the role of mistakes in scientific research and dance.

**Creation of field-based opportunities for student learning and mentorship.** I work passionately to connect my students to the broader community. I see “applied neuroscience” outreach activities as central to our undergraduate students’ education and learning. Going places, sharing new research, listening and answering questions from the public improves our teaching skills, and our own understanding of current findings and the relevance of our field.

• We’ve gone to Street 14 Cafe in Astoria to talk about caffeine, the Fort George Brewery to present on alcohol, area hospitals to view live brain surgeries, to Davenport, WA and La Grande, Heppner, Ione, Siletz, Amity and Willamina, OR for multi-day outreach in rural districts, and to Oregon Arts Education Association conferences in Ashland and Wilsonville for Noggin workshop demonstrations of arts integration in STEM.

• Our students were at the Kiggins Theater for our “Science on Tap” presentation on marijuana, the Vancouver Symphony for a talk on the value of music therapy for Alzheimer’s disease, and the Phillips Collection in Washington DC, where we organized a sold out “NW Noggin Neuroscience Night” that included art making, a pipe cleaner neuron installation built by academic priority students from Turner Elementary we’d worked with earlier that week, an examination of real human brains, Northwest beer and our own “Nature of Seeing” gallery.

• I have brought undergraduates to the MacLaren Youth Correctional Facility in Woodburn, Oregon to discuss bias, anxiety, stress, epigenetics and adolescent brain development with incarcerated youth interested in challenging Oregon’s legal requirement to try adolescents as adults for certain crimes.

• I’ve also brought our undergraduates to p:ear, a homeless youth center where we presented a day long “Homelessness & the Brain” session in fall 2017 that brought together clinicians, students, policy makers, and homeless youth as equal participants. We talked, listened and learned from young brain researchers about stress, anxiety, depression, sleep, emotional regulation, racial bias, meth, alcohol, development, and resilience — and also explored data, art, and testimony from young people without homes to illuminate the links between a lack of affordable housing and all our brains.

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Personal Narrative Bill Griesar 9
• I’ve brought PSU students into Congressional offices on Capitol Hill to advocate for investment in research and education.

• One current goal is to further outreach with our students to tribal majority schools in rural Oregon through an innovative, Spirit Mountain Community Foundation funded project I organized called Synapses, Stories & Song. I received a $5000 grant from the Confederated Tribes of the Grande Ronde in December 2017, and brought our students into K-12 classrooms with tribal elders, musicians, and storytellers during spring, summer, and fall (2018).
  o I’ve connected with the Native American Employees group at Intel who provided 3D printing support for the creation of “brain sets” to leave with schools we visited, and I collaborated with the Oregon Pacific Area Health Education Center (OPAHEC) to incorporate clinical career components into our outreach efforts.
  o I brought PSU students and our stories of brain research to a Siletz tribal camp in southern Oregon this summer (2018) at the invitation of Esther Stutzman, a celebrated Native storyteller who won the 2017 Oregon Governor’s Arts Award for lifetime achievement.
  o This October I brought twelve undergraduate and graduate volunteers studying neuroscience and art to the Lincoln County and Willamina School Districts for three, day long visits aimed at making connections between figures in Grande Ronde and Siletz tribal stories (including Coyote, Crow, and Grizzly) and their relevant neuroanatomy.
  o Students benefited tremendously from direct public engagement and collaboration with diverse community participants, exploring (often with some degree of awe) the relevance of what they are studying at PSU, and the links and connections between Native stories and discoveries in brain research. More details on this project are found here: Synapses, Stories & Song.

• I’ve organized outreach in many other diverse traditional and non-traditional settings to teach about brains through hands on anatomical exploration and art. A complete list is available at nwnoggin.org.

These outreach efforts not only improve students’ teaching, public speaking, and listening skills, but also build community connections, make our undergraduates aware of available job and educational opportunities, and inform and excite the public about current discoveries in research. Our work was recognized by President Barack Obama in October 2016, when Jeff Leake and I were invited as two of 500 “innovators” identified by the White House Office of Science & Technology Policy to meet fellow innovators in neuroscience and other fields at the White House Frontiers conference in Pittsburgh PA. We heard directly from the President, who told me that he “loved” our pipe cleaner neurons.

External funding for student participation and learning. Through NW Noggin, I’ve raised thousands of dollars in grants (more than $18,000 in 2017-18) from diverse sources, including the Association for Psychological Science, the Portland Alcohol Research Center at OHSU, the Spirit Mountain Community Fund, the Regional Arts and Culture Council, Velo Cult Bike Shop/Pub, and US Bank (for details, see pages 5-6 of my c.v.). I am using these funds to develop and support multiple, year round undergraduate outreach experiences for academic priority K-12 students to introduce them to the study of their own brains and behavior. For example, a dozen Psychology students learned from tribal storytellers and taught Native K-12 students in rural Lincoln and Yamhill counties about research this fall thanks to a grant I secured from the Spirit Mountain Community Fund. Successful fundraising directly benefits our undergraduates in their efforts to teach, mentor, and engage, develop awareness of the broader community, identify needs, explore career opportunities, and pass on their enthusiasm and developing knowledge of neuroscience.
6. Engaged Participation and Leadership in Departmental and Self-governance Activities

My primary service to the department has focused on developing and strengthening Psychology’s undergraduate Neuropsychology/Neuroscience concentration. Through service on the Undergraduate Committee in Psychology, I updated the description and course list for the concentration, and helped re-design the department’s “Pathways” brochure to help guide our undergraduates through specific areas of study.

I also serve at the invitation of Rahmat Shoureshi, the President of PSU (who has expressed strong interest in both Neuroscience and cross-disciplinary outreach efforts) on his Academic Advisory Committee.

I am also the PSU Oregon/SW Washington Chapter Representative for SfN, and bring PSU undergraduates to our annual Chapter conference every spring. When Jeff Leake and I were invited to deliver the keynote address on Brain Awareness at the annual SfN conference this fall in San Diego, I helped arrange complimentary registration and PSU SET funding for 11 undergraduate members of the Neuroscience Club to present their own posters, and engage in outreach with more than 400 academic priority K-12 students in San Diego Unified Public Schools.

I also consider as departmental and university service the range of ways in which I have connected our students to the broader community, and I’ve worked hard to bring the attention of stakeholders to the important work that is going on at PSU. Through extensive teaching and outreach with K-12 students and those from other institutions, I try to build significant awareness and support for our department, and aim to show our undergraduates that their own skills and participation are valued and recognized and have real impact on our community, and our broader world.

Conclusion

Neuroscience is, to many, an intimidating subject, yet it is central to a complete understanding of human perception, cognition, and behavior. I love teaching, and I aim to offer my students rich learning experiences in the classroom, as well as field-based opportunities to learn through service, instructional, research, and laboratory activities. Our region is rich in neuroscience research, and offers tremendous opportunities for our students’ advancement and discovery through further education and employment. I work hard to provide our students with opportunities to access individuals and organizations than can provide useful, actionable information, connections, and expertise. I strive to offer Psychology students an immersive undergraduate “world” organized around behavioral neuroscience, including sequenced courses, extensive K-12 and community outreach, participation in research and professional conferences, social media, photography, science policy initiatives, and other efforts aimed at connection, inclusion, and innovative, arts-integrated public engagement.