

**Leo R. Scholl, PhD**

lscholl@uw.edu

Seattle, WA

Professional Experience

<b>Acting Instructor</b> University of Washington, Seattle WA	2025 – present
<b>Postdoctoral Researcher</b> , Orsborn Lab University of Washington, Seattle WA	2020 – 2025
<b>Teaching Assistant</b> , Department of Cognitive Sciences University of California Irvine, Irvine CA	2014 – 2019
<b>Scientist Intern</b> , Protein Expression Group	2013
<b>Scientist Intern</b> , Biotherapeutics Group Boehringer Ingelheim, Ridgefield CT	2012

Education

<b>Ph.D. in Psychology</b> University of California, Irvine CA Title: Pulvinar contributions to visual cortical processing in the rat Advisor: David Lyon	2019
<b>M.S. in Cognitive Neuroscience</b> University of California, Irvine CA	2017
<b>B.S. in Biological Sciences</b> Carnegie Mellon University, Pittsburgh PA Minor: Computer Science	2014

Publications

\*Ouchi T, \***Scholl LR**, \*Rajeswaran P, Canfield R, Smith LI, and Orsborn AL. Mapping eye, arm, and reward information in frontal motor cortices using electrocorticography in non-human primates. *Journal of Neuroscience*. 2025

Li J, **Scholl LR**, Le T, Rajeswaran P, Orsborn AL, Shlizerman E. AMAG: Additive, Multiplicative and Adaptive Graph Neural Network For Forecasting Neuron Activity. *Advances in Neural Information Processing Systems* 36. 2024

**Scholl LR**, Foik A, and Lyon DC. Projections between visual cortex and lateral posterior nucleus in the rat. *Journal of Comparative Neurology*, 2021.

**Scholl LR**, Zhang L, Foik AT, and Lyon DC. Novel rabies virus variant for bi-directional optical control reveals modulatory influence of the pulvinar on visual cortex in rat. *bioRxiv*, 2020.

Foik AT, **Scholl LR**, Lean GA, and Lyon DC. Visual response characteristics in lateral and medial subdivisions of the rat pulvinar. *Neuroscience*, 2020.

**Scholl LR**. Pulvinar contributions to visual cortical processing in the rat (Doctoral dissertation). 2019.

Foik A, Lean GA, **Scholl LR**, et al. Detailed visual cortical responses generated by retinal sheet transplants in rats with severe retinal degeneration. *Journal of Neuroscience*, 2018.

Pope WH, et al. Whole genome comparison of a large collection of mycobacteriophages reveals a continuum of phage genetic diversity. *Elife*, 2015.

#### Submitted Abstracts

**Scholl LR**, Rajeswaran P, Canfield RA, Orsborn AL. Longitudinal mesoscale measurements of functional connectivity using optogenetic stimulation. Talk. *Simian Collective*. 2025

Canfield RA, Ouchi T, **Scholl LR**, Rajeswaran P, Smith LI, Orsborn AL. Single-neuron and population approaches reveal spatially structured neural dynamics across frontal motor cortex. *Neural Control of Movement*. 2025

Ouchi T, Canfield RA, **Scholl LR**, Orsborn AL. Spatial gradient of population representations about hand and eye positions in macaque motor cortex. *Neural Control of Movement*. 2025

**Scholl LR**, Canfield RA, Rajeswaran P, Orsborn AL. Stimulation-based functional connectivity measurements reveal state-dependent network modulation. *Cosyne*. 2025

Botadra RB, Chen CJ, **Scholl LR**, Le T, Fang H, Canfield RA, Orsborn AL, Shlizerman E, Hsu SC, Hauck S. Closed-loop brain stimulation in NHPs using hardware-accelerated machine learning. *FastML* 2024

Sarti M, Rajeswaran P, **Scholl LR**, Orsborn AL. Observing Motor Exploration in Primates during Center Out Task. *Annual Biomedical Research Conference for Minoritized Scientists (ABRCMS)* 2024

\***Scholl LR**, \*Rajeswaran P, Smith LI, Orsborn AL. Adaptation and de novo learning of 3D perturbations in a 2D reaching task. *Advances in Motor Learning and Motor Control*. 2024.

Canfield RA, Ouchi T, **Scholl LR**, Rajeswaran P, Orsborn AL. Spatially distributed sampling of motor cortex during reaching. *Society for Neuroscience 50*. 2024

Ouchi T, Canfield RA, **Scholl LR**, Orsborn AL. Gradient encoding of eye, hand, and target position in the motor cortex using a high density laminar probe. *Society for Neuroscience 50*. 2024

Rasgaitis C, Smith LI, Perks K, Lilley P, **Scholl LR**, Orsborn AL. Developing an automatic in-cage touch screen system to optimize high throughput experiments in non-human primates. *Society for Neuroscience 50*. 2024

**Scholl LR**, Canfield R, Rajeswaran P, Orsborn AL. Measuring functional connectivity across days using optogenetic stimulation. *Society for Neuroscience 50*. 2024

Borchelt B, Pierce V, **Scholl LR**, Rajeswaran P, Orsborn AL. Learning and Adaptation to 3D Visuomotor Rotations in a 2D Cursor Task. *Summer Undergraduate Research Symposium*. 2024

Sarti M, Rajeswaran M, **Scholl LR**, Orsborn AL. Observing Motor Exploration in Primates during a 3D Center Out Task. *Summer Undergraduate Research Symposium*. 2024

Rasgaitis C, Smith LI, Perks K, Lilley P, **Scholl LR**, Orsborn AL. Streamlining Task Complexity Adaptation in Non-Human Primate Training. *Women in NeuroAI*. 2024

Peterson L, Li SJ, **Scholl LR**, Rajeswaran P, Orsborn AL. Using convex feature selection to improve offline feature decoding. *A3D3 High-Throughput AI Methods and Infrastructure Workshop*. 2023

**Scholl LR**, Rajeswaran P, Smith LI, Asfour J, Quintanilla JC, Orsborn AL. How eye movements contribute to motor learning in macaque monkeys. *Neural Control of Movement*. 2023

Canfield R, **Scholl LR**, Rajeswaran P, Smith LI, Orsborn AL. Neural population dynamics in largescale electrocorticography (ECoG) during reaching. *Neural Control of Movement*. 2023

Ouchi T, **Scholl LR**, Rajeswaran P, Smith LI, Orsborn AL. Arm and eye movement information of electrocorticographic signals in monkeys. *Neural Control of Movement*. 2023

Rajeswaran P, **Scholl LR**, Smith LI, Orsborn AL. A novel manual control perturbation task to study formation and adaptation of internal models. *Neural Control of Movement*. 2023

**Scholl LR**, et al. Measuring functional connectivity across days using optogenetic stimulation. *Simons Collaboration on the Global Brain*. 2022

Foik AT, **Scholl LR**, et al. Comparison of single neuron responses between two rostral subdivisions in the rat pulvinar / lateral posterior thalamic nucleus. *Society for Neuroscience 45*. 2019

Foik AT, Lean GA, **Scholl LR**, et al. Restoration of visual cortical responses after retinal sheet transplantation in rats with retinal degeneration. *Society for Neuroscience* 42. 2016

### Department presentations

Measuring network connectivity during learning. UW Graduate Program in Neuroscience, 2024

Restoration of vision by retinal sheet transplants in rats with retinal degeneration. UC Irvine Department of Cognitive Science, 2016

### Unpublished work

Scholl LR, Rajeswaran P, Canfield RA, and Orsborn AL. Measuring functional connectivity across days using optogenetic stimulation. Manuscript in prep.

Zhang L, Scholl LR, and Lyon DC. Experica: a distributed software system for closed loop vision experiments. Manuscript in prep.

### Awards and honors

Weill Neurohub Postdoctoral Fellowship	2024-2025
\$150,000 Total Costs (PI)	
1st place Poster Award, NSF A3D3 workshop	2023
<i>Using convex feature selection to improve offline feature decoding</i>	
NINDS F32 Application scored	2022
<i>Network-inspired brain-computer interfaces for efficient treatment of motor disabilities</i>	
NIH R21 (NS113264)	2020
\$432,000 Total Costs (Key personnel)	
<i>Viral strategies for bi-directional optogenetic control of specific cell types in neocortex of non-transgenic animals</i>	
1st place Poster Award, UCI Postdoctoral Scholar Poster Session	2016
<i>Restoration of visual cortical responses after retinal sheet transplantation in rats with retinal degeneration</i>	
University Honors, Carnegie Mellon University, Pittsburgh, PA	2014
HHMI Phage Genomics Research Initiative Student	2010

### Service and leadership

#### **Academic Service**

Volunteer Graduate Applicant Support Program (GASP)	2023
Mentor, Neuroscience Undergraduate Reading Program (NURP)	2023 – present

Seminar Organizer, Neural Engineer Seminar, University of Washington	2020 – 2022
Guest Reviewer, Neuroscience Letters	2019

### Teaching Assistant

UC Irvine Department of Cognitive Sciences	2014 – 2019
<ul style="list-style-type: none"> <li>● Research Methods in Psychology</li> <li>● Experimental Psychology</li> <li>● Cognitive Robotics</li> <li>● Introduction to Psychology</li> <li>● Abnormal Psychology</li> </ul>	

### Guest Lecturer

UW Department of Electrical and Computer Engineering	
<ul style="list-style-type: none"> <li>● Undergraduate Research Exploration Seminar, Dr. Richard Shi</li> </ul>	Winter 2022
UW Department of Psychology	
<ul style="list-style-type: none"> <li>● Neurobiology of Learning and Memory, Dr. Sheri Mizumori</li> </ul>	Spring 2022
UC Irvine Department of Cognitive Sciences	
<ul style="list-style-type: none"> <li>● Introduction to Psychology: Sensation and Perception</li> <li>● Abnormal Psychology: Schizophrenia and Psychotic disorders</li> </ul>	2016 2015

### Trainings and Workshops Attended

SURFiN Mentor Training	2024
Mentoring Enrichment and Leadership Development Institute (MELDI)	2023
PR2ISM “Writing a diversity, inclusion, and equity statement” workshop	2022
4-Part Mentoring Workshop Series for SURF Mentors	2022

### Mentorship

NIH UW ENDURE Mentor to Brady Borchelt	2024
NSF REU Mentor to undergraduate Mathew Sarti	2024
SURFiN Mentor, Shenoy Undergrad Research Fellowship in Neuro	2023 – 2024
SURF Mentor, Simons Undergraduate Research Fellowship	2022 – 2023
NSF REU Mentor to undergraduate Joseph Asfour, Winner of Churchill Scholarship at the University of Cambridge	2022
Peer Mentor, UW K99 Peer mentoring group	2020 – present
Mentor to undergraduate Luis Zambrano, Winner of 2019 Opportunities Program grant at UCI	2018 – 2019

### Cellist

Campus Philharmonic Orchestra, <i>Principal cello</i> , UW	2021 – 2022
UCI Orchestra, University of California, Irvine	2018 – 2019
University Orchestra, <i>Principal cello</i> , Carnegie Mellon University	2012 – 2014
Cambiando Quartet, Pittsburgh, PA	2011 – 2014
Pre-College Orchestra, <i>Principal cello</i> , The Juilliard School	2008 – 2010