

Postdoctoral Positions in Neuroplasticity and Spinal Cord Injury Research
University of Washington
Laboratory of Steve Perlmutter

The Perlmutter lab at the University of Washington has immediate openings for two postdoctoral fellows to join our team's effort to develop new treatments for spinal cord injury (SCI) using a rat model.

Our approach focuses on promoting neuroplasticity through electrical stimulation combined with pharmacological, gene therapy, and task-specific behavioral therapies. We have demonstrated substantial recovery of forelimb motor function in rats using activity-dependent spinal stimulation (ADSS) after a contusion injury of the cervical spinal cord. We recently obtained several awards (NIH, Dept. of Defense, Craig H. Neilsen Foundation) to expand our research program.

New projects include:

- elucidate the interplay between ADSS, neuromodulators, and task-specific retraining
- investigate the dramatic sex difference in responsiveness to ADSS therapy
- combine ADSS with a gene therapy that promotes regrowth of descending axons
- determine the mechanisms of behavioral recovery due to ADSS (electrophysiological, optogenetic, anatomical, DREADD, RNA-seq techniques)
- examine the effects of ADSS on spasticity mechanisms and develop stimulation protocols to promote prolonged improvements in muscle tone
- characterize changes in motor cortex activity related to motor learning and relearning after SCI with and without ADSS.

An advanced degree in Neurosciences or Biomedical Engineering is preferred but other applicants will be considered. Ideal candidates will have experience in some of the following: electrophysiology, brain computer interface technology and application, optogenetic activation of central pathways, neural signal processing, writing custom software (e.g., Matlab, Python) for data analysis, computational neuroscience.

Our lab has several interdisciplinary collaborations with neuroscientists, engineers, and clinicians, including a first clinical trial of ADSS in human subjects with SCI. We provide an excellent environment for postdoctoral training, and value investigators who want to pursue their own ideas. Interested candidates please contact Steve Perlmutter (perl@uw.edu). The University of Washington is an equal opportunity employer, and we encourage applications from a diverse range of candidates.