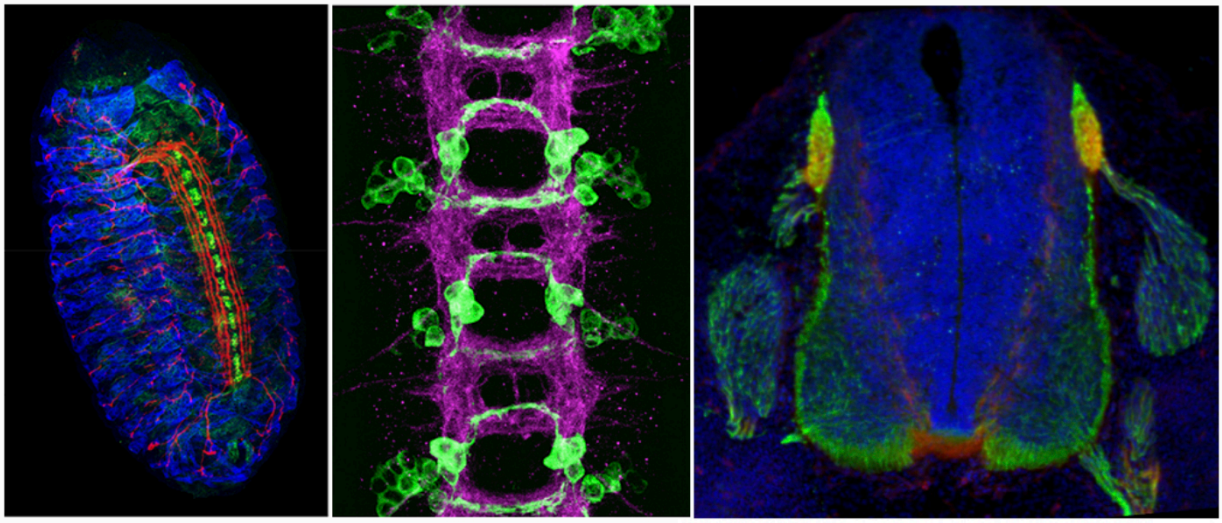
Perelman School of Medicine
University of Pennsylvania

Bashaw Lab

The Bashaw Lab at the University of Pennsylvania is actively recruiting a research technician to assist in our ongoing research efforts, as well as to conduct supervised independent research. Responsibilities include lab management, supply ordering, reagent preparation and helping care for our flies and mice. In addition, the successful applicant will assist graduate students and postdoctoral fellows with ongoing research, as well as pursuing independent research. Significant research experience as an undergraduate and course work in genetics, molecular and cell biology are preferred. See https://www.med.upenn.edu/bashawlab/ for more info!
Penn Job Listing: JR00032900 Technician, Research Laboratory C (Dept. of Neuroscience)

Assembly of Neural Circuits

Our research is directed toward understanding fundamental mechanisms that control the development of the nervous system. We use the fruit fly embryonic central nervous system and the mouse spinal cord to study these mechanisms.



Left: A late stage Drosophila embryo. Muscle cells are in blue. CNS and Motor axons are labeled in red. Midline cells are green. Center: Three segments of a stage 16 embryo. All CNS axons are labeled (magenta) a subset of commissural neurons (green). Right: Transverse section of an E11.5 mouse spinal cord. Neurofilament (green), Tag1-commissural axons (red), nuclei (blue).

The correct assembly of midline circuits is critical for coordinated sensory and motor control. There is striking conservation among the molecules that control the axon guidance events at the midline between invertebrate and vertebrate systems. Failure to form appropriate midline connections leads to abnormal motor control and can also lead to intellectual disability.

Research

Our research is directed toward understanding fundamental mechanisms that control the development of the nervous system. We use the Drosophila embryonic CNS and the mouse spinal cord systems to study these mechanisms, with a particular emphasis on the control of axon guidance at the midline. Defects in the formation of midline circuitry can lead to profound deficits in motor control and cognitive abilities. For example, in the youtube video below, mutations in the DCC receptor can result in mirror movement disorders and intellectual disability.