WS03-A: Dissecting Brain Function in Mouse and Human Development, Aging and Disease

**Elkhorn C**

**Chair:** Jane Roskams, PhD - The Allen Brain Institute (https://www.alleninstitute.org/our-institute/our-team/profiles/jane-roskams/)

**WS03-01 - Mapping Cortical Areas in GCaMP6 Reporter Mice with Widefield Imaging**
Jun Zhuang, PhD (http://alleninstitute.org/what-we-do/brain-science/about/team/staff-profiles/jun-zhuang/)

**WS03-02 - Mapping Human Brain Development and Lineage Using Embryonic Stem Cells**
Boaz Levi, PhD (http://alleninstitute.org/what-we-do/brain-science/about/team/staff-profiles/boaz-levi/)
(http://alleninstitute.org/our-science/brain-science/about/team/staff-profile/vilas-menon)

**WS03-03 - Mapping the Mouse Brain Mesoscale Connectome**
Jennifer Whitesell, PhD (http://alleninstitute.org/what-we-do/brain-science/about/team/staff-profiles/jennifer-whitesell/)
(http://alleninstitute.org/our-institute/our-team/profiles/julie-harris/)

**WS03-04 - No Long-Term Transcriptional Effects of Mild Traumatic Brain Injury Identified in a Well-Characterized Aged Cohort**
Jeremy Miller, PhD (http://alleninstitute.org/what-we-do/brain-science/about/team/staff-profiles/jeremy-miller/)
Chair: Terri Gilbert, PhD - The Allen Brain Institute (http://alleninstitute.org/about/team/staff-profile/terri-gilbert)

(https://engage.alleninstitute.org/site/Calendar?id=100542&view=Detail)

Session Description
The first ten years at the Allen Institute for Brain Science focused on mapping gene expression in the brain of mouse, macaque and human across development and into adulthood. All of these data and unique visualization tools are open source and freely available online, allowing any user to query and use these data. Based on findings from these foundational studies the Allen Institute for Brain Science has developed a unique scientific program to understand fundamental properties of the brain from a single cell’s unique molecular program all the way up to how each cell operates in a live awake learning cortical circuit. Institute scientists will first highlight groundbreaking new work from the current suite of institute projects, and we will overview our newest dataset – a comprehensive gene expression, proteomic and pathological study correlated with cognitive findings in aging, dementia and after traumatic brain injury. Following the scientific talks, there will be a hands-on training session to facilitate attendees understanding of how to effectively access and utilize the data available from our website. Please register for the hands-on training so that we can prepare you to most effectively take advantage of this workshop.

Learning Objectives
To understand not only the science behind our legacy resources available from our website, but also the research being undertaken now and in the future that will forward the fields ability to understand the brain.

At the conclusion of the session, attendees will be:
1. Informed of current and upcoming research being conducted at the Allen Institute for Brain Science.
2. Able to access the breadth of resources from multiple organisms available to them as a researcher from the open source datasets.
3. Able to design their own investigation using the open dataset, pull data of interest for their own studies, and understand where to find more information should they need assistance.

Pictures