

# Combi Seminar

Wednesday, 11.6.19 | 1:30 | Foege Auditorium

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**Dr. Michael Hawrylycz**

Allen Institute

## "Cell Types of the Cortex: Data, Taxonomy, and Resources"

To understand the function of cortical circuits it is necessary to characterize their underlying cellular diversity. Multiple phenotypic attributes define or contribute to our understanding of cell type including anatomical, physiological, connectivity, and molecular features. While productive and ultimately essential, multimodal classification remains challenging and has not resulted in a unified taxonomy of neural or glial cell types. Single-cell transcriptomics is enabling, for the first time, systematic high-throughput measurements of large numbers of cortical cells and the generation of datasets that hold the promise of being complete, accurate and permanent (CAP). Statistical analyses of these data reveal clusters which correspond to cell types previously defined by morphological or physiological criteria, and which appear conserved across cortical areas and species. We review the present status of transcriptome-based taxonomies of cell types for the mammalian neocortex, and efforts to generate a standardized nomenclature based on a probabilistic definition of a cell type. A community-based classification may provide a common foundation for the study of cortical circuits and serve as an example for cell type atlases in other parts of the nervous system or the body.

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Questions? Contact Brian Giebel at [bgiebel@uw.edu](mailto:bgiebel@uw.edu) or visit the Combi website at <http://www.gs.washington.edu/news/combi.htm>

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