



Single Cell Research in Progress Seminar Series  
**“Transcriptomic Taxonomy and Neurogenic Potential of Adult Human, Macaque and Pig Hippocampal and Entorhinal Cells”**

**Shaojie (Jay) Ma**, PhD Candidate

Email: [j.ma@yale.edu](mailto:j.ma@yale.edu)

**Sestan Lab**, *Department of Neuroscience and Genetics, Yale School of Medicine*

**Zoom:** <https://yale.zoom.us/j/98098508223>

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12:00 p.m. to 1:00 p.m. Seminar

The hippocampal-entorhinal system supports cognitive functions, has lifelong neurogenic capabilities in many species, and is selectively vulnerable to Alzheimer’s disease. To investigate neurogenic potential and cellular diversity, we profiled single-nucleus transcriptomes in five hippocampal-entorhinal subregions in human, macaque, and pig. Integrated cross-species analysis revealed robust transcriptomic and histologic signatures of neurogenesis in adult mouse, pig and macaque, but not humans. Doublecortin (DCX), a widely accepted marker of newly generated granule cells, was detected in diverse human neurons, but it did not define immature neuron populations. To explore species differences in cellular diversity and implications for disease, we characterized subregion-specific transcriptomically-defined cell types and transitional changes from the three-layered archicortex to the six-layered neocortex. Notably, METTL7B defined subregion-specific excitatory neurons and astrocytes in primates, associated with endoplasmic reticulum and lipid droplet proteins,



Shaojie (Jay) Ma is currently a fifth-year Ph.D. student in Sestan lab. He received his B.S. degree in Biotechnology in Shanghai JiaoTong University in 2017. His current research interest is genomic analysis of brain development and evolution.

**CBDS Announcement:** The Dean’s office is committed to supporting development and implementation of cutting edge technologies. If anyone has ideas for emerging technologies that we should be piloting at Yale, please send them to Katie Zhu ([xinxin.zhu@yale.edu](mailto:xinxin.zhu@yale.edu)), who will relay the suggestions to the Dean’s Office.

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