

Y. IKEUCHI Lab

[Morphogenesis of the Nervous System]

Department of Materials and Environmental Science

<http://www.bmce.iis.u-tokyo.ac.jp>

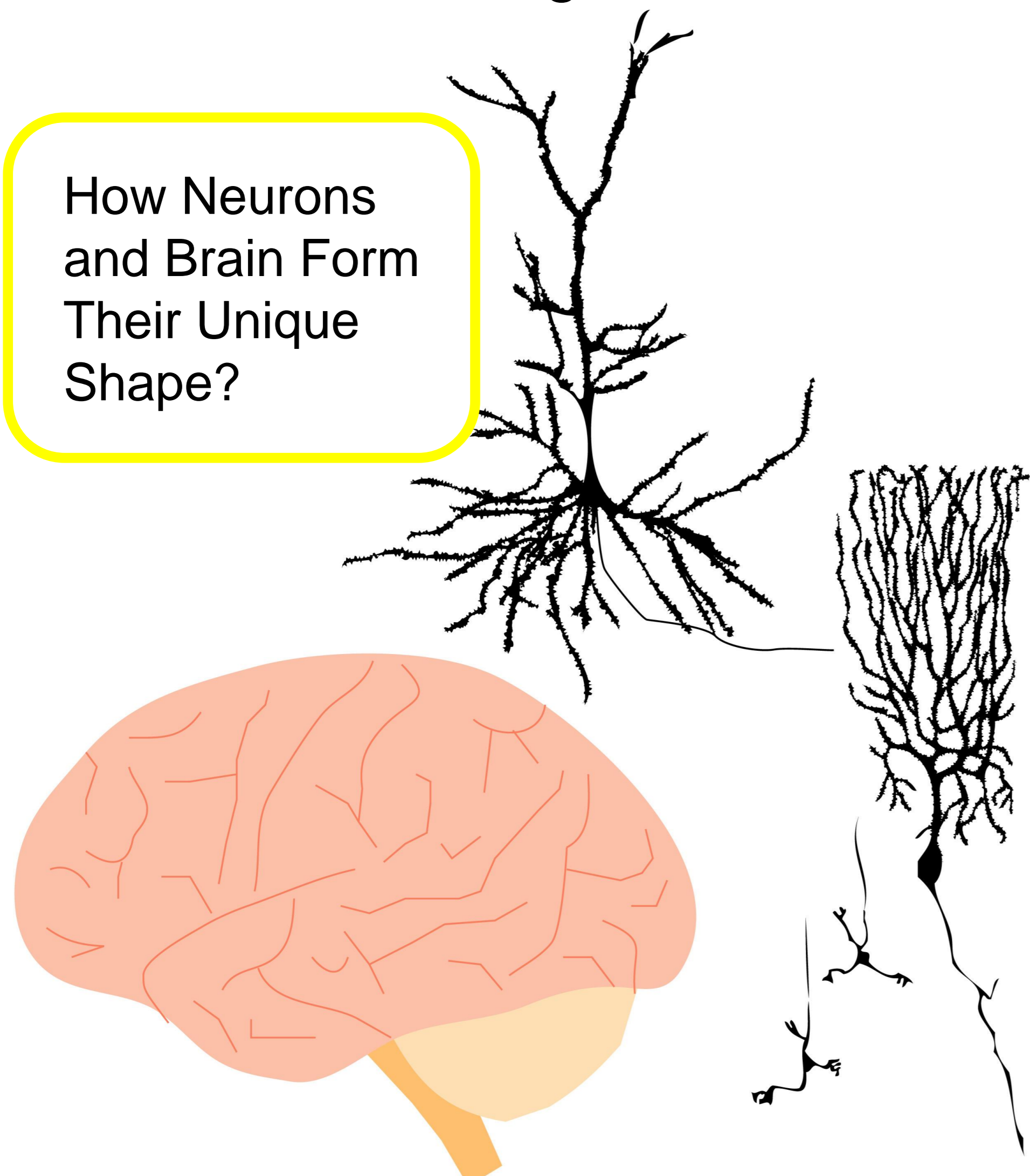
Biomolecular and Cellular Engineering

Department of Chemistry & Biotechnology

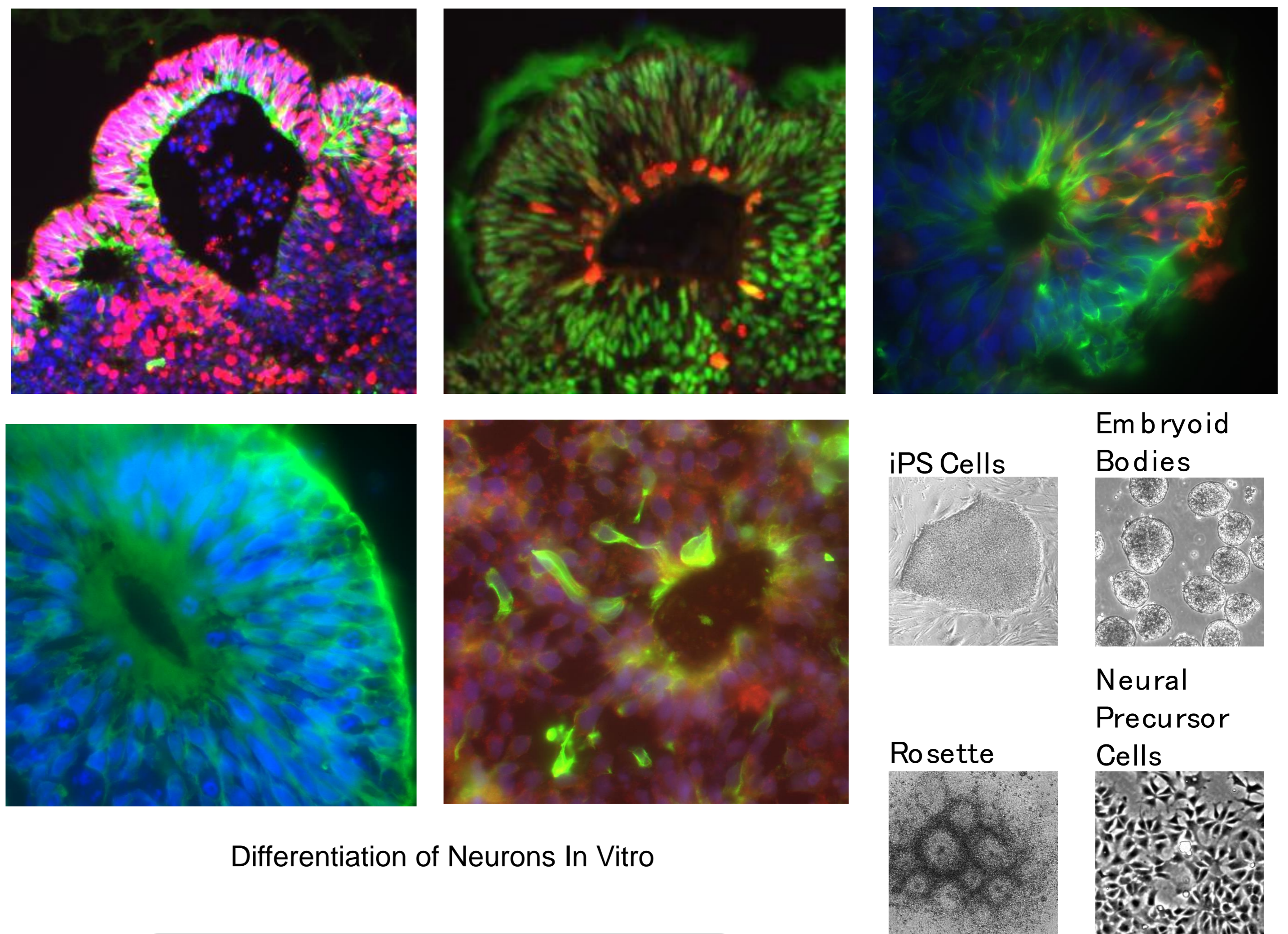
How Neuron and Brain Form Their Shape?

Morphogenetic mechanisms of neuron and brain

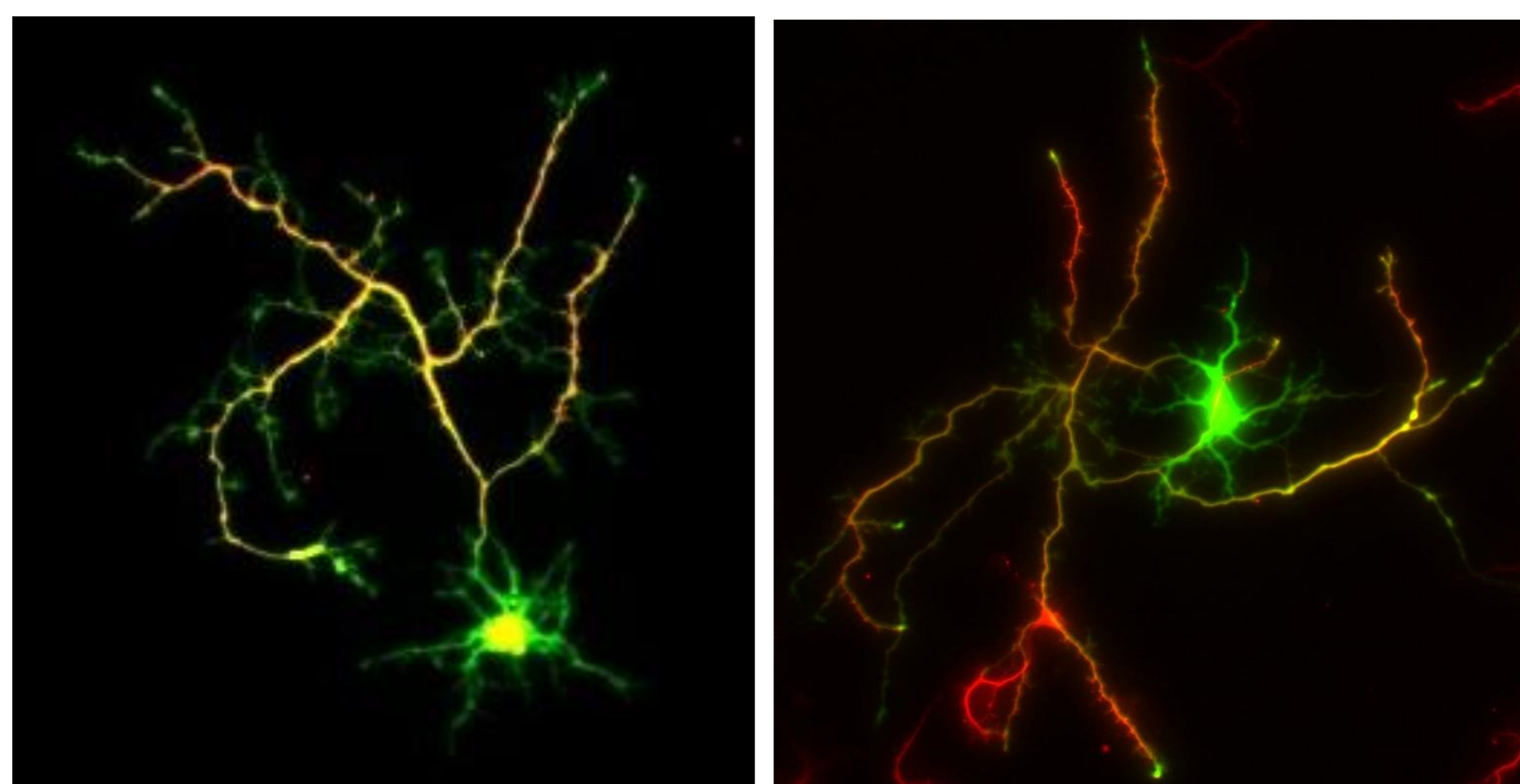
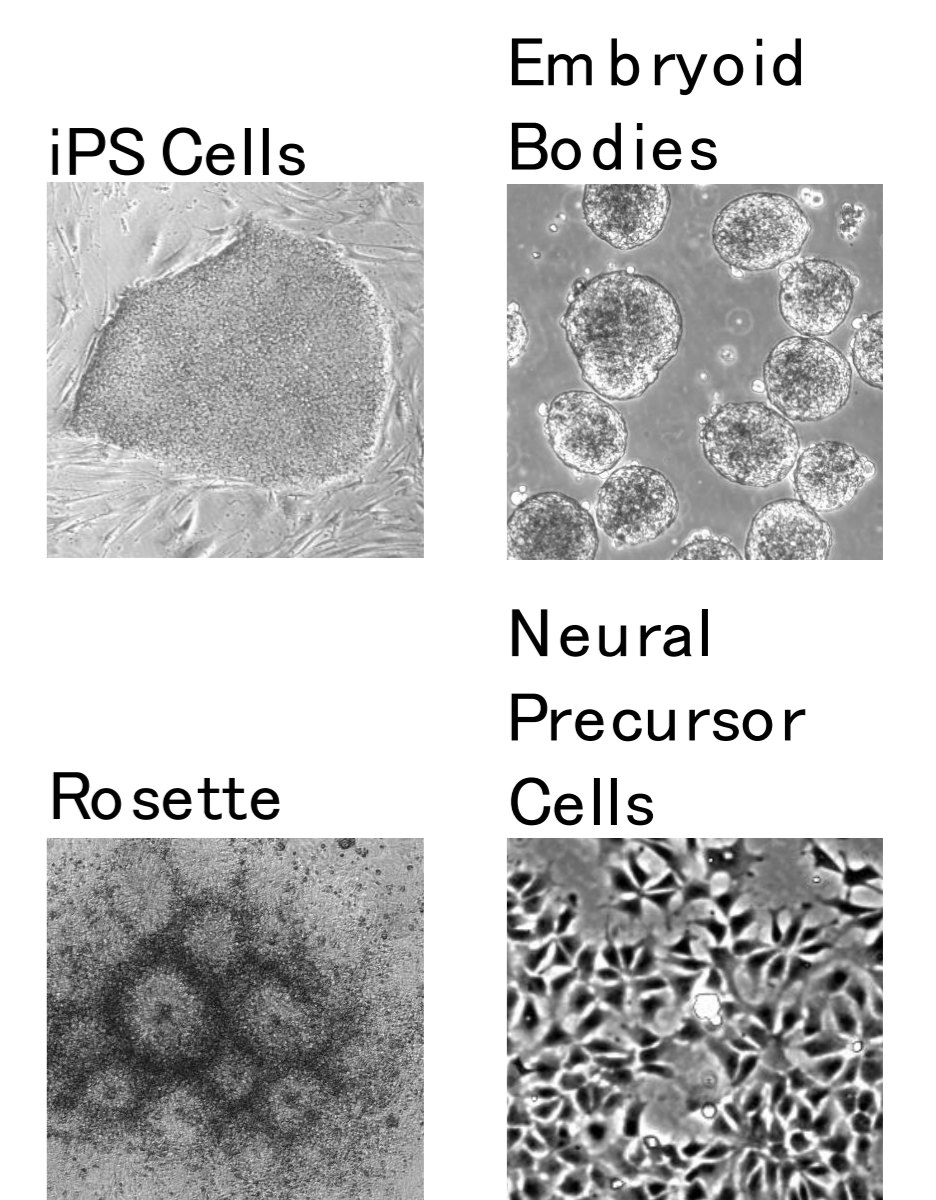
Morphogenesis of neurons and brains is a fundamental step for development of the nervous system. We are interrogating molecular and genetic mechanisms underlying autonomous morphogenesis of neurons and brains. Our final goals are to understand developmental mechanisms for brain development, and to defeat developmental brain disorders including intellectual disability and autism spectrum disorders.



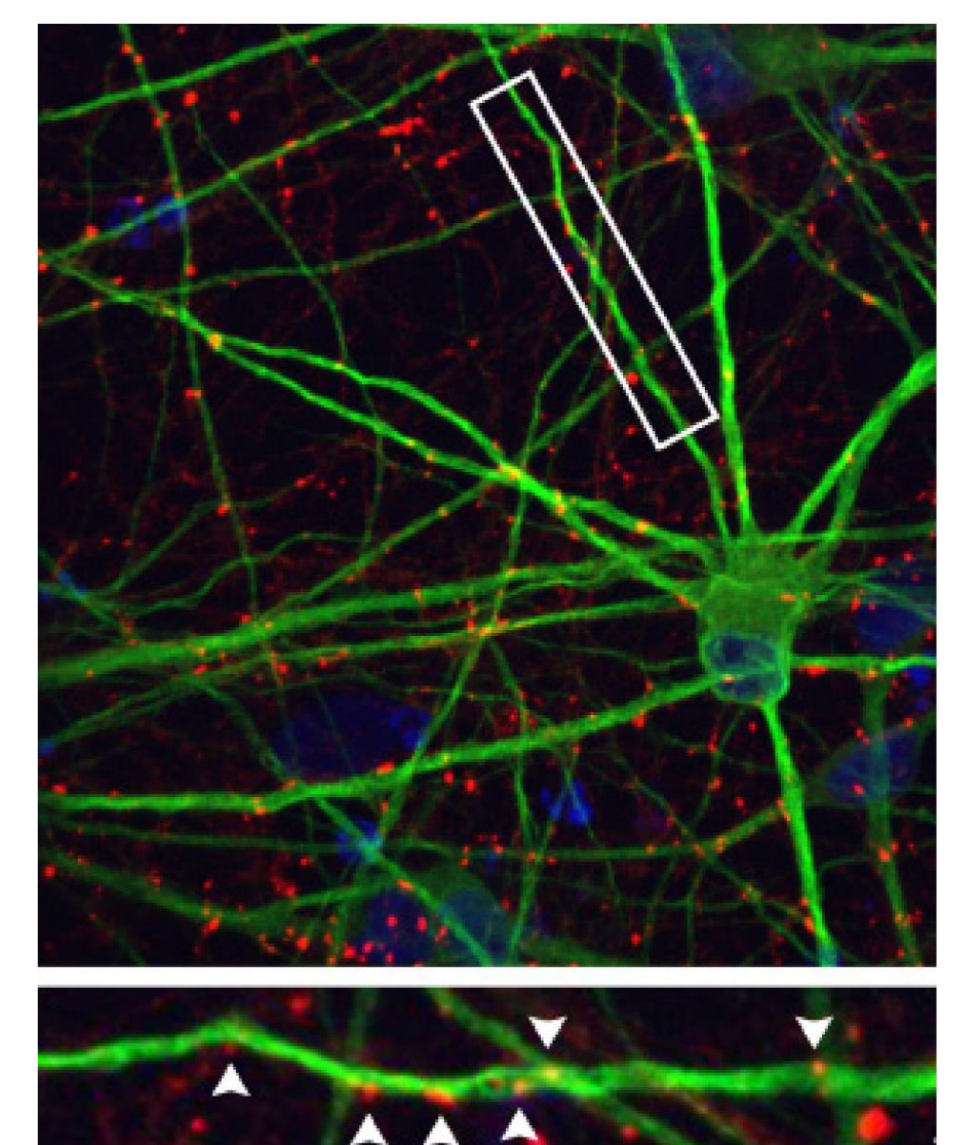
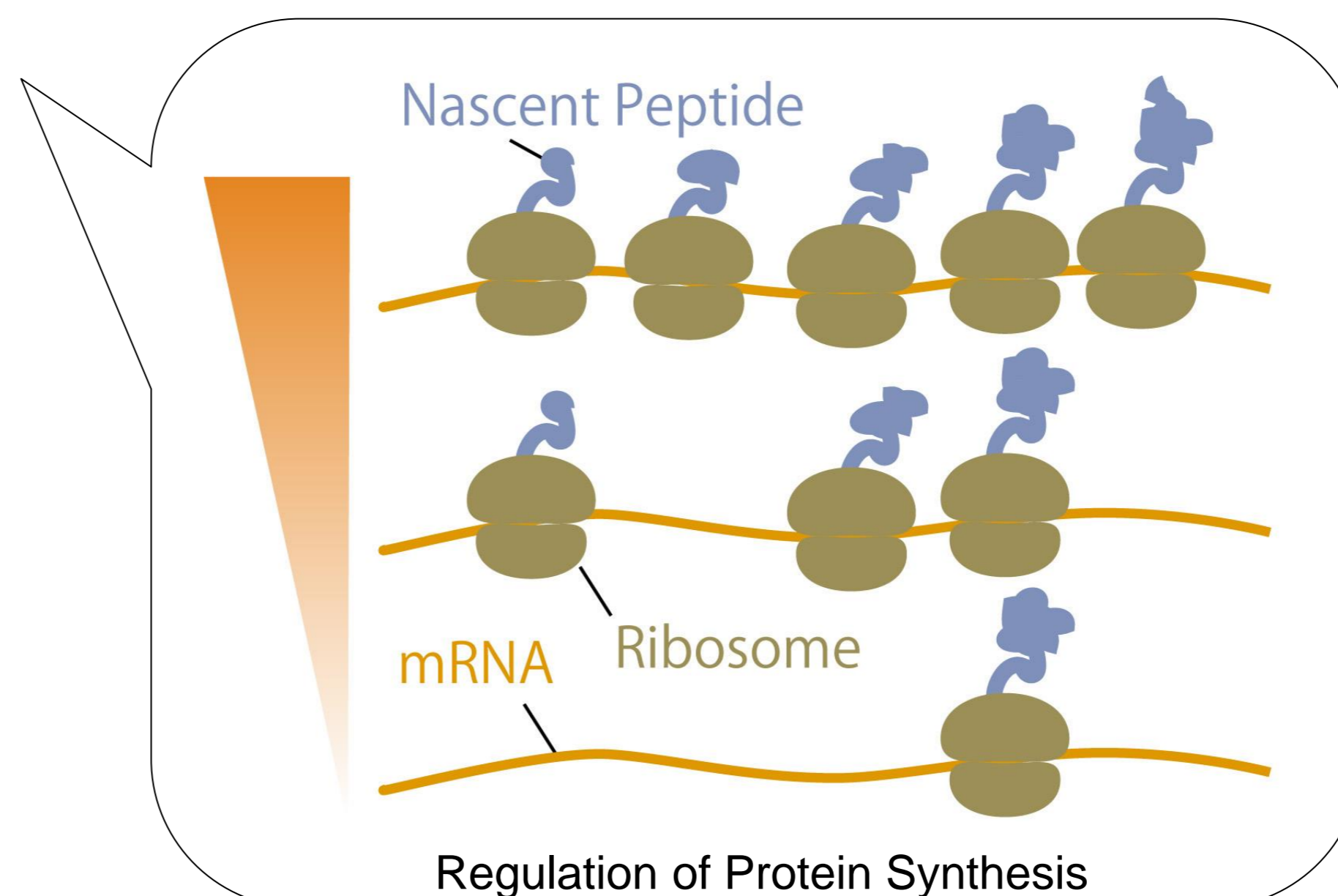
Morphology of Neurons and Brain



Differentiation of Neurons In Vitro



Neuronal morphogenesis in vitro



- ◆ Dynamic Regulation of Protein Synthesis: We are investigating cellular mechanisms for dynamic regulation of protein synthesis using biochemical and genetic engineering methods.
- ◆ Brain Morphogenesis Model: By mimicking development of the brain in vitro, we are analyzing mechanisms of morphogenesis and compartmentalization of the brain.