Neuroscience Lecture Series
Fall 2011

Not(ch) your Average Developmental Pathway: Setting up the Hypothalamic-Pituitary Axis

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Abstract: Our research addresses how differentiated cells arise from proliferating progenitor cells and to what extent the development of hypothalamic neurons and the pituitary gland rely on the presence of each other. Notch signaling is an evolutionarily conserved signaling system that is important for cell fate choice during development in many contexts. We hypothesize that Notch signaling is necessary to maintain precursor cells within the hypothalamus and that it may play a role in lineage specific differentiation. We have demonstrated that Notch signaling is sufficient to maintain proliferation of hypothalamic progenitors and prevent their differentiation into POMC, NPY, and GHRH neurons. Additionally, we have uncovered a novel role of Notch signaling in axon guidance of AVP neurons through the ME to the posterior lobe. Taken together, our studies demonstrate a role for Notch signaling in the coordinated development of the HP axis. Ongoing studies will elucidate the downstream pathways that account for the observed effects.

Monday, November 7th at 3 p.m.
Morris Library Auditorium

Refreshments served following the lecture
Open to the Public