# Biology Seminar


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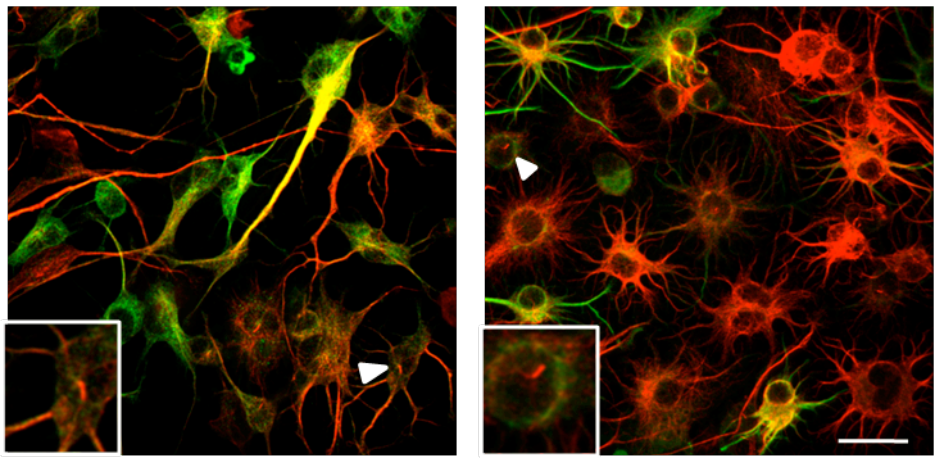
## Genesis of the Brain: Stem Cells & Cilia

Primary cilia are crucial in brain development. We have shown that in mutant mice with selective losses of brain cilia, neural progenitor populations fail to expand, leading to severely disrupted brain growth and architecture. These effects are largely due to diminished sonic hedgehog signaling, which is cilia-dependent. To begin unraveling the complex ramifications of ciliary signaling, we are determining when cilia are present in various cell types. Diverse stories are emerging for neural stem cells and their progeny -- neurons, oligodendrocytes, and astrocytes. The raising and lowering of ciliary antennae may be a strategy to control cells' exposure to signals that regulate proliferation. We propose that



coordinated timing of ciliation is fundamental in orchestrating brain ontogeny.

**Friday Oct 9, 2009** **2:00 PM** **ENV125 (EESAT)**