LSU Health Sciences Center

Neuroscience Center of Excellence

FACULTY CANDIDATE

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Presenting

Maturation and Integration of New Neurons in the Adult Hippocampus

The dentate gyrus is an anatomical part of the hippocampus which also contains the CA1-CA4 subfields. Neurogenesis in the dentate gyrus occurs from around E10 in mice, peaks during late embryonic and early postnatal days, and continues throughout the adult life of mice. Using retrovirus-mediated labeling of dividing cells and their progenies, we followed the axonal and dendritic growth of newborn granule cells in the adult mouse brain and identified distinct morphological stages that may indicate different levels of connectivity. We also observed aberrant morphogenesis of newborn neurons in a rat model of epilepsy, and these neurons are stably integrated into the circuitry. Future work will identify extrinsic cues and intrinsic signaling pathways that control the patterning of granule cells in both adult and developing brains. In addition, I will discuss a distinct population of cells labeled by retrovirus, and the possibility of using this to answer some of the fundamental questions of adult hippocampal neurogenesis – what are the primary hippocampal progenitors, and how are they maintained in the adult central nervous system.

Wednesday April 9, 2008 11:30am,
8th Floor Neuroscience Center Conference Room,
LSU Lion's Building, 2020 Gravier Street
New Orleans