Neural Stem and Progenitor Cell Transplantation: Preclinical Studies Informing Therapeutic Mechanisms

JUNE 10

Tuesday, 10:30 AM

Billings Building—Rosedale Room

SPEAKER:

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Host: Edmund Hollis II, Ph.D.

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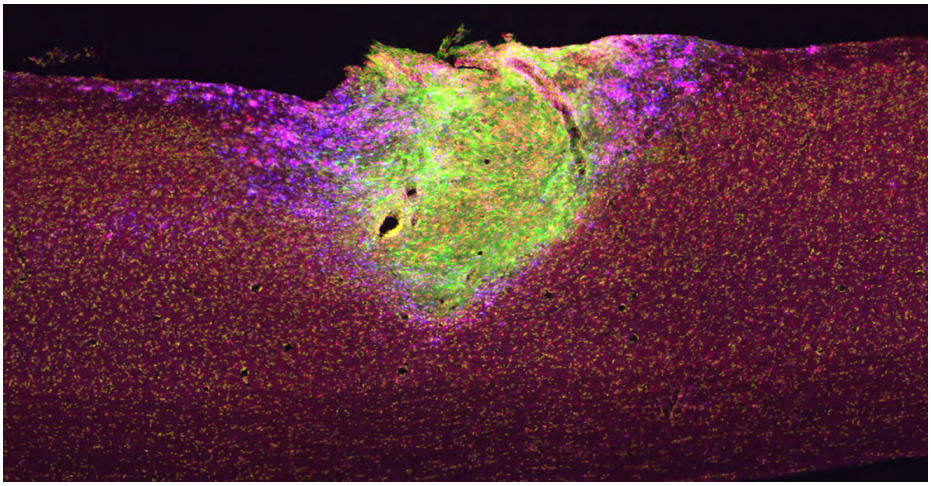
Abstract

Spinal cord injury (SCI) is a devastating event that typically results in permanent loss of neurological function. A promising therapeutic strategy to regenerate lost spinal cord tissue and restore neurological function after injury is transplantation of neural progenitor cells (NPCs). Although NPC transplantation is currently being evaluated in SCI clinical trials, there are many fundamental biological questions about mechanisms of therapeutic efficacy that still must be addressed. The Dulin lab has investigated the role of factors including biological sex, regional identity, developmental stage, and cell type specificity in NPC transplantation. In this talk, I will summarize the knowledge that we have gained in the last five years and highlight how our work has advanced understanding of how engrafted neurons interact with the injured host nervous system.



Publications:

1. *Functional synaptic connectivity of engrafted spinal cord neurons with locomotor circuitry in the injured spinal cord.* A Tucker, JT Eisdorfer, JK Thackray, K Vo, H Thomas, A Tandon, J Moses, bioRxiv, 2025.04. 05.644402.

2. *Chemogenetic Attenuation of Acute Nociceptive Signaling Enhances Functional Outcomes Following Spinal Cord Injury.* PA Kumar, J Stallman, Y Kharbat, J Hoppe, A Leonards, E Kerim, Journal of Neurotrauma 41 (9-10), 1060-1076.

3. *Developmental stage of transplanted neural progenitor cells influences anatomical and functional outcomes after spinal cord injury in mice.* M Aceves, A Tucker, J Chen, K Vo, J Moses, P Amar Kumar, H Thomas, Communications Biology 6 (1), 544.