



THE UNIVERSITY OF  
WESTERN AUSTRALIA  
*Achieving International Excellence*

School of Anatomy & Human Biology  
The University of Western Australia

The Head of School, Professor Linc Schmitt,  
invites you to attend the

## 2010 ANATOMY & HUMAN BIOLOGY SEMINAR SERIES

**Dr Stuart Hodgetts;  
Research Assistant Professor,  
School of Anatomy & Human Biology, UWA**

### **Snakes and Ladders in Spinal Cord Repair**

**Tuesday 9 November, 2010 at 1.00pm**

Room 1.81, Anatomy & Human Biology Building  
The University of Western Australia (off Hackett Entrance No. 2)

**The Seminar:** To date, a number of potentially clinically relevant cellular transplantation approaches have been used in animal models of incomplete spinal cord injury (SCI), with varying degrees of success and at least some functional improvements. The research conducted in the Eileen Bond Spinal Research Centre (Director, Assoc. Prof. Giles Plant) over the last few years has centred mainly on such cell based transplantation therapies. Our own studies using highly purified hBMSCs from SCI patients dramatically improve anatomical and functional recovery after both acute (short term) and chronic (long term) in nude rat T-cell immunodeficient hosts after contusion SCI. Transplanted hBMSCs produce growth promoting molecules in close association with host astrocytes and Schwann cells within the lesion site. Importantly, hBMSC transplanted animals show striking improvement of walking patterns, dramatically increased amounts of spared spinal cord tissue, as well as lower amounts of degenerative tissue after acute and chronic SCI. Recently we have included strategies designed to reduce the inhibitory effects of glial scar formation as well as developing a therapy using Induced Pluripotent Stem (IPS) cells that represent an attractive counterpart to such therapies. IPS cells provide potential autologous transplants of pluripotent stem cells that can both survive and transdifferentiate into neuronal phenotypes after transplantation but without the invasive surgery required for their isolation or immune rejection from the host. Despite much promise, progress in SCI treatments is often modest and occasionally the lessons learned can take you a few steps back...

**The Speaker:** Stuart Hodgetts is currently a Research Assistant Professor at the Eileen Bond Spinal Research Centre (School of Anatomy and Human Biology (ANHB) at The University of Western Australia (UWA). He has extensive knowledge and expertise in cell based transplantation therapies and has been devoted to this area of research for over 10 years. He has considerable expertise in spinal cord injury and bone marrow stromal cell (BMSC) transplantation, since he began this work in 2004. He also has strong interest in the application of stem cell based transplantation therapies as well as immune modulation of the host response to improve donor cell survival in treatments for spinal cord repair. Previously, SH worked in the field of autoimmunity/immunobiology, (including postdoctoral work at the Oklahoma Medical Research Foundation, USA). and myoblast transfer therapy research as a potential treatment for Duchenne muscular dystrophy (Muscle Research Group, UWA).

**PARKING:**

Coin operated visitor parking is available between Hackett Entrances 1 and 2. City of Subiaco controlled riverside parking is also available.

**Enquiries:**

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