

News from the Core!



Musculoskeletal Repair and Regeneration Core Center

December 2006

The Musculoskeletal Repair and Regeneration Core Center (MRRCC) at Hospital for Special Surgery is in full operation!

Upcoming Events:

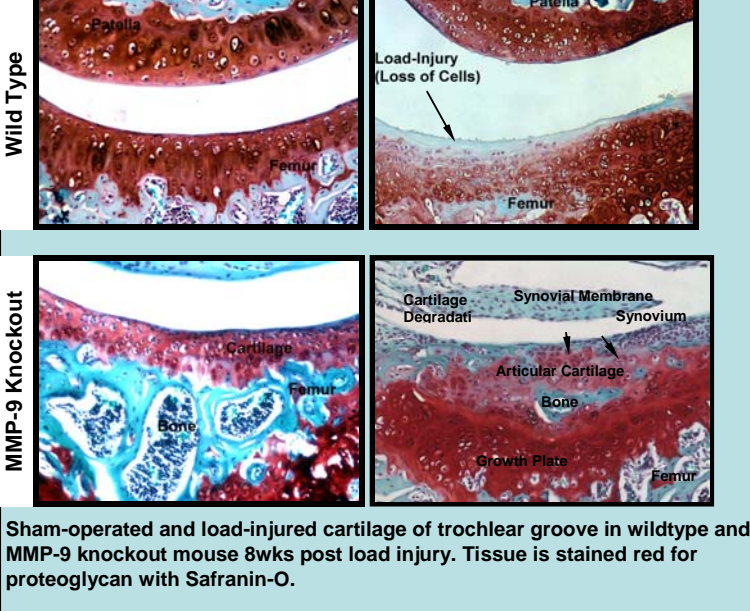
MRRCC Seminar Speaker: Professor Harrie Weinans of Erasmus University, Rotterdam, a pioneer in the development of micro CT techniques applied to bone, will be speaking at HSS in late March/Early April....Date to be announced shortly!

Research News:

P&F Project Demonstrates the Importance of a Metalloprotease in the Development of Arthritis!

This issue we are highlighting research results from one of our P&F Projects, "The Roles of MMP-9 in Cartilage Degradation After Load Injury", awarded to Christopher Chen, PhD, Assistant Scientist, in the Tissue Engineering, Regeneration and Repair Program at HSS. Dr. Chen is investigating the hypothesis that the removal or silencing of the MMP-9 gene will increase cartilage degradation after load injury.

The preliminary data from the Analytical Microscopy Core suggest cell death/loss and cartilage degradation 8 weeks after load-injury. A thickening of the synovial membrane, an indication of joint inflammation, was also found in load-injured joints in wildtype and MMP-9 knockout mice as compared to their sham-operated controls. Increased degradation along with RA-like inflammation was found in MMP-9 knockout mice, suggesting that MMP-9 plays an important role in regulating inflammation in chronic repair of cartilage injury. Further quantitative investigations into specific molecular and structural changes in cartilage and synovial membrane are currently being conducted in both the Imaging and Analytical Microscopy Cores. Mechanical testing will be performed in the Mechanical and Material Assessment Core.



Sham-operated and load-injured cartilage of trochlear groove in wildtype and MMP-9 knockout mouse 8wks post load injury. Tissue is stained red for proteoglycan with Safranin-O.

Please visit our website and contact us for more detailed information regarding analyses of musculoskeletal tissues by our Applied Statistics, Analytical Microscopy, Imaging, and Mechanical and Material Assessment Cores: <http://www.hss.edu/Research/Core-Facilities>

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