BIO ENGINEERING SEMINAR

at 4:00 PM on March 4th, 2014 (Tuesday)
MRDG Seminar Hall, 1st floor, Biological Sciences Building

Biomimetic Scaffolds and Signal Delivery for Cartilage and Osteochondral Regeneration

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The niche provided by the biodegradable 3 dimensional scaffolds play a very important role, in *in vitro* engineering or *in vivo* regeneration of damaged tissues. The microenvironment present in the 3D scaffolds cue the cellular response. Factors like microstructure, chemical composition and the biomimetic signals present in the immediate environment within the 3D scaffold, direct tissue specific differentiation of progenitor cells and secretion of extracellular matrix. Delivery of multiple signals in a gradient pattern is required for simultaneous engineering of two tissues or tissue interfaces. My research interests are on identifying appropriate microenvironment required for the cells to promote faster regeneration of damaged cartilage, osteochondral defects and islet transplantation for pancreatic regeneration. My talk will be focused on cellular response to different types of 3D scaffolds and bioactive signals used for cartilage and osteochondral regeneration.

About the speaker:

Dr. Neethu Mohan is "Chitra High Value Fellow D" at Sree Chitra Tirunal Institute for Medical Sciences & Technology (SCTIMST), Thiruvananthapuram. She obtained her postgraduate degree in Biochemistry from University of Kerala and PhD in Tissue Engineering from SCTIMST. She had short term research experience at University at Kyoto, Japan and Georgia Tech Institute of Technology at Atlanta. She had postdoctoral experience at Biomaterials & Tissue Engineering Lab, University of Kansas and was an Assistant Research Professor at University of Kansas. She serves as reviewer of several journals in her field and also as Editorial board member of journal Tissue Engineering. Her current research interest is also to develop an *in vitro* osteoarthritic model that can serve as an initial screening system to understand the regeneration and integration of novel bioactive implants for osteochondral repair.