

Past research project examples – Tissue Engineering for Regenerative Medicine MRes

These are some of the research projects previously undertaken by students on our [Tissue Engineering for Regenerative Medicine MRes](#).

Title: Control of proliferation in human pancreatic endocrine progenitor cell lines

Supervisor(s): M Dunne/K Cosgrove

Title: Stem cell gene therapy for MPS IIIA disease

Supervisor(s): F Wilkinson/B Bigger

Title: Inkjet Printing Cell Sheets for ENT Surgical Applications

Supervisor(s): B Derby/T Woolford

Title: Cellular Scaffolds for Human Pancreatic Progenitor Cells and Beta-Cell Regeneration: for Diabetes Research

Supervisor(s): Downes/Blandford/Dunne/Cosgrove

Title: The role of fibrocytes in determining the degree of scarring/remodelling in the airways following allergen exposure

Supervisor(s): S Herrick

Title: Developing a tissue-engineered airway model using electrospun scaffolds

Supervisor(s): S Herrick/J Gough

Title: In vitro degradation of electrospun Poly(ϵ -caprolactone)/Poly(vinyl phosphonic acid-co-acrylic acid) scaffolds for bone regeneration

Supervisor(s): S Downes

Title: Investigating the mechanisms by which the inflammation-associated protein TSG-6 mediates cartilage protection and repair

Supervisor(s): C Milner/A Day

Title: Molecular descriptors for the fibroblast-myofibroblast phenotypic transition

Supervisor(s): N Tirelli/F Cellesi

Title: Investigating the role of N-cadherin in mouse ES cell self-renewal

Supervisor(s): C Ward

Title: Effect of degenerate IVD niche, specifically the cytokine milieu, on MSC differentiation to Intervertebral Disc Cells: implications for IVD regeneration

Supervisor(s): J Hoyland/S Richardson

Title: Characterization of periodontal ligament fibroblasts - do they have osteogenic and chondrogenic potential?

Supervisor(s): H Devlin/J Hoyland

Title: Developing *Xenopus* as a model to study neural development and regeneration

Supervisor(s): K Dorey

Title: Do plasma membrane calcium pump isoforms 1 and 4 have differential roles in pathological cardiac remodelling?

Supervisor(s): E Cartwright

Title: Evaluating 3D neural cell growth in peptide hydrogels

Supervisor(s): A Saiani/G Terenghi

Title: Characterization and directed differentiation of embryonic cranial neural crest cells grown in vitro

Supervisor(s): N Bobola

Title: Potential for in vivo training and experience Stem cell gene therapy for MPS IIIB

Supervisor(s): Brian Bigger, Alex Langford-Smith

Title: Scarring/remodelling in the airways following allergen injury

Supervisor(s): Sarah Herrick, Sara Namvar

Title: Targeting PMCA4 protein to enhance the protective effects of iPS derived cardiomyocytes

Supervisor(s): Dr Delvac Oceandy, Dr Tamer Mohamed

Title: Developing a tissue-engineered airway model using electrospun scaffolds

Supervisor(s): Julie Gough, Sarah Herrick

Title: Development of in vitro model systems to study the anti-inflammatory effects of MSCs degenerate intervertebral tissue

Supervisor(s): Judith Hoyland, Steve Richardson

Title: Novel electrospun scaffold morphologies for cell therapy: applications in the treatment of diabetes

Supervisor(s): Sandra Downes, Karen Cosgrove

Title: Human hair follicle stem cells: expression and function of ATP-binding cassette transporters

Supervisor(s): Iain Haslam, Ralf Paus

Title: Comparison of the differentiation potential of patient-matched bone marrow and adipose-derived mesenchymal stem cells seeded on biomaterials

Supervisor(s): Stephen Richardson, Judith Hoyland

Title: Knock-down of heparan sulphate in mesenchymal progenitor cells to investigate co-receptor function

Supervisor(s): Catherine Merry (Materials), Cay Kielty (FLS)

Title: Corneal Repair and Regeneration by Stem Cell Autografting

Supervisor(s): Sue Shawcross, Chantal Hillarby

Title: Peptide hydrogel for 3D culture of adult stem cells and neuronal cells

Supervisor(s): Alberto Saiani, Giorgio Terenghi

Title: Unravelling mechanisms of liver fibrosis for therapeutic and diagnostic strategies

Supervisor(s): Karen Piper Hanley

Title: Regenerating peripheral nerves - subpopulation selection of adipose derived stem cells influences differentiation to Schwann cells

Supervisor(s): Adam Reid, Alessandro Faroni

Title: The Pathology of encapsulating peritoneal sclerosis in long term dialysis patients

Supervisor(s): Sarah Herrick; Mike Sherratt; Angela Summers

Title: Dissecting the fibroblast-myofibroblast transition: role of mechanical and inflammatory stimuli

Supervisor(s): Nicola Tirelli, Francesco Cellesi

Title: Identification of novel annulus fibrosus cell phenotypic markers and evaluation of marker genes to identify mesenchymal stem cell differentiation

Supervisor(s): Judith Hoyland, Stephen Richardson

Title: Molecular structure and nanomechanical properties of the extracellular matrix of tissue engineered intervertebral disc tissue

Supervisor(s): Judith Hoyland, Mike Sherratt