Trinity Centre for Bioengineering

Postdoctoral Researcher Position - Injectable Biomaterials and Tissue Regeneration of the Intervertebral Disc

**Project Description:** 97% of individuals over the age of 50 exhibit degeneration of the intervertebral disc (IVD). Recent investigations have shown that cell-based strategies can retard degenerative changes. However, the challenge for clinical translation remains in identifying suitable cell sources and biomaterial delivery systems to support cells environment of the disc. The overall aim of this project is to develop a single stage therapy for intervertebral disc regeneration. This consists of developing injectable biomimetic biomaterials (Aim 1) and evaluation of the proposed strategies in both ex-vivo organ culture and in-vivo models (Aim 2). If successful, the strategies outlined will create a paradigm shift in which the scientific community and clinical investigators approach early stage disc degeneration.

**Buckley Lab:** Prof. Buckley leads a multidisciplinary research group in the Trinity Centre for Bioengineering (TCBE) and Advanced Materials and Bioengineering Research Centre (AMBER) at Trinity College Dublin. The goal of the Buckley lab is to develop novel biomaterial and cell based strategies to regenerate or repair damaged tissues to restore function using minimally invasive strategies (MIS).

**Candidate criteria:** Applicants will ideally hold a primary degree in biomedical engineering, materials science, or related discipline with a PhD in the area of advanced biomaterials/tissue engineering. Preference will be given to candidates who have experience in intervertebral disc repair or injectable hydrogels. Specific skills that would enhance a candidate’s application for the position might include experience in some of the following areas: hydrogels, tissue decellularization techniques, cell culture, in vivo models, nutrient modelling, advanced microscopy, PCR, immunohistochemistry and other histological and imaging techniques. Excellent written and oral communication skills are essential. An excellent publication record and experience in reviewing journal articles would be advantageous.

**Start date:** This position is funded for up to 24 months and is available immediately (Position will remain open until a suitable candidate is found). CVs with the names and contact details of two referees should be submitted via email to conor.buckley@tcd.ie with the subject heading “Intervertebral Disc Postdoc”.

**Webpage:** [http://www.mee.tcd.ie/regenerative/People/CBuckley](http://www.mee.tcd.ie/regenerative/People/CBuckley)

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