Institute of Biomaterials
& Biomedical Engineering
UNIVERSITY OF TORONTO

October 3, 2018

**JOB POSTING- POSTDOCTORAL FELLOW, INSTITUTE OF BIOMATERIALS & BIOMEDICAL ENGINEERING**

Area of research: Inflammatory response to biomaterials – biomaterial synthesis

Supervisor: Michael Sefton, University Professor, Institute of Biomaterials and Biomedical Engineering, University of Toronto

Where: Donnelly Centre for Cellular and Biomolecular Research, 4th floor

Funding: Medicine by Design (www.mbd.utoronto.ca)

Stipend: $50k or higher, pending experience

Start date: January 1, 2019

Duration: one year, with option for renewal

Project(s):

The lab is focused on vascularization of tissue engineered constructs. Two approaches are being explored: a biomaterial incorporating methacrylic acid that induces angiogenesis without exogenous growth factors (1) and the transplantation of endothelial cells in the context of collagen gels ("Modular tissue engineering") to drive a remodeling response that results in extensive vascularization (2). While the approaches are very different, they both exploit alternative foreign body responses in that the inflammatory (largely macrophage) response is an important, if not rate limiting determinant of the outcome.

I am interested in recruiting a polymer chemist who can synthesize the next generation of materials that can control the foreign body response. In one aspect, this will exploit methacrylic acid as the bioactive monomer in novel formulations or configurations. In another aspect we will design and synthesize novel monomers and polymers that mimic biologically critical receptor agonists or antagonists.

Familiarity with a variety of polymer synthesis and characterization tools is essential.

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1. Talior-Volodarsky T, Mahou R, Zhang, DKY and Sefton MV, The role of insulin growth factor-1 on the vascular regenerative effect of MAA coated disks and macrophage-endothelial cell crosstalk. Biomaterials DOI 10.1016/j.biomaterials.2017.08.019
2. Vlahos AE, Cober N, Sefton MV., Modular tissue engineering for the vascularization of subcutaneously transplanted pancreatic islets., Proc Natl Acad Sci U S A. 2017 Aug 16. PMID: 28814629

Employment as a Postdoctoral Fellow at the University of Toronto is covered by the terms of the CUPE 3902 Unit 5 Collective Agreement.

The normal hours of work are 40 hours per week for a full-time postdoctoral fellow (pro-rated for those holding a partial appointment) recognizing that the needs of the employee's research and training and the needs of the supervisor's research program may require flexibility in the performance of the employee's duties and hours of work.

The University of Toronto is strongly committed to diversity within its community and especially welcomes applications from racialized persons / persons of colour, women, Indigenous / Aboriginal People of North America, persons with disabilities, LGBTQ persons, and others who may contribute to the further diversification of ideas.

Application procedure: Please send CV, previous publications and names of three references to

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Application deadline: November 1, 2018