

Faculty / Division: Faculty of Applied Science & Engineering

Department: Materials Science and Engineering

Campus: St. George

Background and purpose:

The incumbent will be responsible for developing and optimizing biodegradable microparticles for *in vivo* assessment of embolization. The successful candidate will join a dynamic clinically driven research team and will be responsible for development and *in vivo* assessment of embolic agents. Working within the engineering team and with direct clinical input, this project has exciting potential to lead to paradigm shifting treatment strategies for patients.

Qualification and Skills:

PhD in Chemistry, Chemical Engineering, Materials Science, Pharmacy or a related field with experience in the synthesis and characterization of biocompatible hyaluronic acid microparticles for future application in genicular artery embolization. The incumbent must have experience with/knowledge in relevant high quality, high yield emulsification/purification methods and characterization techniques (e.g., optical/electron microscopy, liquid chromatography, nuclear magnetic resonance and infrared spectroscopies, mass spectrometry, etc.) with the goal towards assessment of the embolic agent in an *in vivo* model of embolization. Additional experience in cell and molecular biology would be an asset (e.g., in qRT-PCR, miRNA extraction, DNA assays, histology, immunohistochemistry staining, and immunofluorescent staining). The candidate is expected to perform an independent analysis of datasets generated over the project, spearhead manuscript-writing efforts (or support others as appropriate) and contribute to writing grant applications. Qualified candidates should be self-driven leaders and highly motivated researchers with an established track record as demonstrated by a strong relevant publication record in internationally renowned, high impact factor journals, as well as experience presenting research findings to peers. Previous professional experience managing R&D projects, engaging in multi-institutional collaborations (academic, clinical and industrial), as well as supervising junior team members is a definite asset. In order to apply for this position, you must have obtained your Doctoral degree within the last 5 years.

Key Responsibilities:

- Design, synthesize and characterize a biocompatible, biodegradable, size-controlled colloidal agent for genicular artery embolization
- Development of a synthetic protocol suitable for later translation into human patients
- Conduct critical analysis of recorded data followed by the optimization, reformulation, or re-design of the carrier – as required
- Prepare reports and figures for publication/presentation
- Direct projects, guide/supervise junior team members
- Engage in complementary collaborations within or external to the research group

At all times, the individual is expected to support the overall research and teaching missions of the lab. The incumbent will be expected to perform research independently and will design, direct, execute, analyze and present in written and oral forms novel investigative studies that build on and/or take advantage of the resources and expertise within the lab as well as incumbent's academic expertise.

Though the research focus has been defined in "Background and purpose", the individual is also expected to support the overall research missions of the lab. The incumbent will be expected to perform research independently and will design, direct, execute, analyze, and present in written and oral forms novel investigative studies that build on and/or take advantage of the resources and expertise within the lab as well as incumbent's academic expertise.

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 review will begin on: March 30, 2023

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

Naomi Matsuura

Materials Science and Engineering/Biomedical Engineering, University of Toronto,

Mail: 184 College St, Room 140

Toronto, Canada

M5S 3E4

naomi.matsuura@utoronto.ca

Travel: Limited

Notes: All qualified incumbents are encouraged to apply; however, Canadians and permanent residents will be given priority.

We thank all applicants for their interest. Only those candidates qualified for an interview will be contacted.

Evaluation of position will begin March 16, 2023 and will remain until filled.

Employee Group: Postdoctoral Fellow

Appointment Type: 1 year, with option for renewal

Schedule: Full-time

Pay Scale Group and Hiring Rate Range: \$60,000-\$70,000

Percentage of FTE: 100