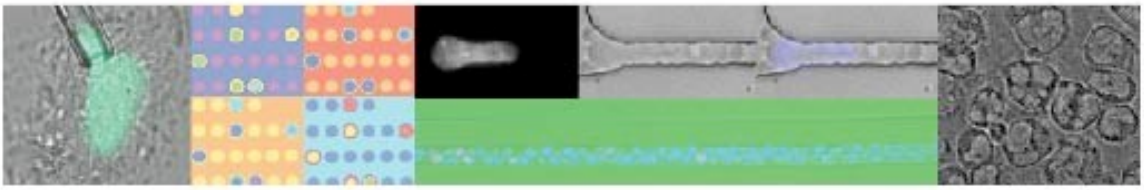

Postdoctoral Researcher Positions: Cancer Cell Biology, Cell Mechanics, & High Throughput Screening

Who we are: At the Rowat Lab, we study the mechanical properties of cells and nuclei and their implications in physiology and disease. The mechanical phenotype of cells is implicated in diseases such as cancer and is critical in how physical forces initiate changes in gene expression. Now that we've invented new technologies for studying cell 'mechanotype' with high throughput, we are expanding the development of these technologies and applications to cancer biology.

This work requires a deeply engaged team of scientists, including both Engineers and Biologists to design and build new types of assays (eg. fluidic design, soft lithography, MEMS fabrication), to develop metrics to evaluate the system (requires strong background in mechanics and/or cell mechanics and understanding of hardware), write internal and external software tools so that we can conduct high throughput mechanotype screening assays (requires outstanding programming skills and knowledge of HTS assays), validate and apply the technologies (needs expertise in cell culture, cancer biology, genetic manipulations), and understand the molecular mechanisms underlying the role of cell/nuclear mechanical properties in cancer cell invasion and progression (requires in vivo cancer models and imaging).

If we could find someone with experience in cell mechanical properties plus PhDs in mechanical and electrical engineering, cancer cell biology, and high throughput screening, we'd hire him or her in a heartbeat. But otherwise we're looking for highly motivated people who have a bit of each of these skills and are excited to work on cool new technologies that will cause a paradigm shift in how we diagnose and treat cancer.

About you – the Physical Scientist/Engineer:

- You have a PhD in a relevant area of the Physical Sciences, Engineering (e.g. mechanical engineering, electrical engineering, physics) with an excellent record of scientific achievements.
- You have excellent, state-of-the-art knowledge of microelectromechanical systems (MEMS) and/or microfluidic technology.
- You love to build things.
- You know the ins and outs of programming languages. Our preferred choice is MATLAB but we trust that you can learn whatever tools are required.

• You're ready to be our internal sounding board and thought leader. Your expertise will help drive our technology development and commercial applications.

• You enjoy sharing your expertise and thrive on engaging in projects with your biologist colleagues, including inventing new tools and assays.

• You have experience with high throughput screening and/or cell biology (preferred but not essential).

• You have excellent skills in scientific communication, both orally and in writing.

• You have a strong drive to pursuing a career in academia.

About you – the Biologist:

• You have a PhD in Cell Biology and/or Cancer Biology with an excellent record of scientific achievements.

• You are highly experienced in *in vivo* cancer models and imaging.

• You want to immerse yourself amongst physicists and engineers to gain expertise and inspiration from the physical sciences.

• You're ready to be our go-to biological expert who is excited to share knowledge, tips, and mentorship with graduate students in the lab.

• You have excellent skills in scientific communication, both orally and in writing.

• You have a strong drive to pursuing a career in academia.

If you feel you are a good fit for these positions, please send a full CV, a brief statement of your research experience and interests, and three references to me:

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