



Postdoctoral Position: Harvard Medical School and the Wyss Institute for Biologically Inspired Engineering

Postdoctoral research fellowship in fields of biofabrication, biomaterials science, and stem cell engineering with a focus on engineering living tissues. The candidate will join the Chaikof lab at Harvard Medical School and Beth Israel Deaconess Medical Center and is expected to closely interact with an interdisciplinary team of biomedical engineers, immunologists, developmental biologists, and clinician-investigators. The project will focus on the evaluation of strategies to engineer human blood vessels for disease modeling, organ fabrication, and reconstructive surgery using continuous and scalable bioprinting processes. The approach will use cells derived from genome edited human induced pluripotent stem cells that evade adaptive and innate immune mechanisms of immune rejection. The phenotypes of engineered vessels, including biomechanical and biological responses, will be investigated in vitro and in vivo. PhD in biomedical engineering, molecular or cell biology, immunology, systems biology or related discipline required. **Submit CV and the names of three references to echaikof@bidmc.harvard.edu.**

Responsibilities

- Initiates and directs the design, fabrication, and characterization of engineered living blood vessels for disease modeling or organ fabrication.
- Facilitates the development of scalable bioprinting processes for blood vessel fabrication by interacting with other engineers. Monitors and evaluates completion of tasks and projects
- Facilitates the design of genome edited vascular wall cells by interacting with genetic engineers and immunologists. Monitors and evaluates completion of tasks and projects.
- Integrate knowledge from developmental biology, genome editing, systems biology, molecular genetics, and immunology to determine the molecular mechanisms that evade alloimmunity and promote desirable cell phenotypes.
- Apply a variety of in vitro tools and data analysis, including genetic, molecular and cellular bioassays, flow cytometry, as well as immunohistochemical studies to characterize the relationship between phenotype, gene expression signature, and host immune response.
- Utilize humanized mice in which parts of the human immune system has been recreated.

Requirements

- Requires a PhD in biomedical or mechanical engineering, molecular or cell biology, or related discipline.
- The candidate is expected to closely interact with members of a multidisciplinary team to efficiently pursue novel strategies that support the design of engineered tissues.
- Must be an energetic, out-of-box thinker with positive attitude. Excellent written and oral communication skills are required, as is the desire and ability to work in a multidisciplinary environment.
- Exhibits outstanding collaborative skills and the ability to train and mentor others.
- Expert knowledge of scientific principles and concepts. Demonstrated success as exemplified by peer-reviewed publications, scientific creativity, and independent thought.

Interested candidates should contact: Elliot L. Chaikof, MD, PhD, Johnson and Johnson Professor of Surgery, Harvard Medical School, Beth Israel Deaconess Medical Center, echaikof@bidmc.harvard.edu

Chaikof Lab (chaikoflab.org)

Harvard-MIT Division of Health Sciences and Technology (hst.mit.edu/faculty-research/faculty/chaikof-elliott)

Wyss Institute for Biologically Inspired Engineering (wyss.harvard.edu/team/associate-faculty/elliott-chaikof)

Harvard Stem Cell Institute (hsci.harvard.edu/people/elliott-chaikof-md-phd)

Harvard Medical School (<https://connects.catalyst.harvard.edu/Profiles/display/Person/92440>)

The **Chaikof lab** is in the **Center for Life Sciences (CLS) Building** in the Longwood medical area, directly adjacent to Harvard Medical School. CLS 11090, 3 Blackfan Circle, Boston, MA 02115