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Postdoctoral Fellow in Striated Muscle Regeneration

Multiple postdoctoral positions are immediately available in the Bursac Lab at Duke University (<http://bursaclab.pratt.duke.edu/>). The focus of the work will be on the use of human induced pluripotent stem cells (hiPSCs) to study skeletal and cardiac muscle biology, disease, and regeneration. Specifically, patient-derived or genome-edited hiPSCs will be differentiated to form miniature human skeletal and cardiac muscle tissues (“myobundles and cardiobundles”). These organoids will be optimized to contain robust electrical and contractile function and will be further combined with hiPSC-derived endothelial and immune system cells of the same genetic background to develop more realistic, high-fidelity tissue on-a-chip disease models. The initial focus will be on the *in vitro* studies of genotype-phenotype relationships in Duchenne Muscular Dystrophy, Pompe disease, Dysferlinopathies, and Rheumatoid arthritis. Furthermore, small molecule genomic and pharmacological screens will be applied to discover new therapeutic targets for skeletal and cardiac muscle regeneration in reporter hiPSC lines generated by genome editing. The most promising gene and tissue engineering candidate therapeutic from these *in vitro* studies will be validated in animal models of myocardial infarction and skeletal muscle disease and injury *in vivo*. We use both small (mice, rats) and large (pig) animals in basic and pre-clinical research.

Qualified candidates should possess a PhD or MD/PhD degree in cell and molecular biology, biomedical engineering, or other relevant areas of biomedical sciences. The ideal candidates will be highly self-motivated and possess strong training in some or all of cell and molecular biology, tissue engineering, genome editing, biochemical and histological techniques. Candidates with experience in culturing and differentiation of human iPS cells into cardiomyocytes or skeletal muscle cells, genome editing (CRISPR, TALEN), and *in vivo* models of cardiac or skeletal muscle injuries and disease will be given priority. Our group is a diverse and stimulating environment that provides excellent opportunities for scientific growth and pursuit of a variety of careers. Interested candidates should e-mail their resume, statement of research goals, and at least three names for recommendation letters to Prof. Nenad Bursac (nbursac@duke.edu).