NIH-funded Postdoctoral position available in the Lassar lab at Harvard Medical School (in the Department of Biological Chemistry & Molecular Pharmacology) to study the transcriptional regulatory network that controls both the formation of the synovial joint and the maintenance of the articular cartilage.

Prior work in the Lassar lab has determined that Prg4/lubricin expressing cells in the embryo constitute a progenitor cell population for the articular cartilage. Building on this knowledge, we identified the transcription factor Creb5 as being critical to drive Prg4/lubricin expression in the articular cartilage; and have recently found that Creb5 plays a larger role in directing the formation of all tissues that constitute the synovial joint, including the articular cartilage.

Our goal is to elucidate how Creb5 coordinates the formation of differing tissues in the synovial joint (i.e., articular cartilage, synovial fibroblasts, and ligaments) and maintains synovial joint homeostasis. The lab seeks to understand the logic of the gene regulatory network that controls synovial joint formation and subsequent generation of the articular cartilage. Fundamental knowledge gained from this understanding will be leveraged to develop novel regenerative approaches to treat degenerative joint pathology in murine models of osteoarthritis.

Our approach to elucidate how articular cartilage is generated during development and potentially regenerated following degenerative joint disease makes use of novel strains of mice that have been genetically engineered by the lab, isolation of genetically engineered Creb5-tdTomato expressing articular chondrocyte progenitors, conditional expression of either transcription factors or signaling molecules in the articular cartilage of transgenic mice, and employment of either bulk or single cell RNA-Seq, ATAC-Seq, and ChIP-Seq technologies.

Applicants should possess a Ph.D. and/or M.D. degree in Molecular Biology, Cell Biology, Biochemistry, Genetics or a related field. In addition, the applicant should be highly motivated, have an excellent working knowledge of molecular biology techniques and be able to work constructively with others with both honesty and enthusiasm. The applicant should have a record of accomplishment that has either been published or is in press in international journals. Prior work with genetically engineered mice, regulation of gene expression and/or bioinformatics would be highly valued.

Interested individuals should send a cover letter, curriculum vitae, and the names/e-mail addresses of three people who could provide letters of reference to Andrew_Lassar@hms.harvard.edu.

Harvard is an Affirmative Action/Equal Opportunity Employer. Applications from women and minority candidates are strongly encouraged. All qualified applicants will receive consideration for employment without regard to race, color, religion, sex, national origin, disability status, protected veteran status, gender identity, sexual orientation, pregnancy and pregnancy-related conditions or any other characteristic protected by law.

For more information visit: https://bcmp.hms.harvard.edu/faculty-staff/andrew-b-lassar