Biology of Lens of the Eye

General Field of the Project: Vision Science

Faculty Mentor of the Project: Heather Chandler, College of Optometry, chandler.111@osu.edu

Project Description: The study will establish the role that biomechanical strain plays in lens epithelial proliferation. We expect that varying degrees of biomechanical strain will induce mitosis in lens epithelial cells under the regulation of specific growth proteins. By determining this, we will be able to identify novel genetic targets induced by cellular strain that are dependent on specific signaling pathways. This project will expand our knowledge of the molecular mechanisms involved in lens proliferation during normal lens growth and during pathologies such as cataract, to promote our long term goal of improving the vision of both animals and people.

Position Description: The selected student will learn to strain and treat cell and tissue cultures, perform immunofluorescence, western blotting, image collection, and data analysis.

Target Audience: Majors in any field related to general biology, pre-medicine, pre-veterinary medicine, molecular biology, biological engineering. We are looking for a motivated undergraduate student who is interested in research in the field of vision science.

Required or desired skills or qualifications: GPA 3.0 or higher; Sophomore or higher; students with laboratory skills, especially in the field of cellular or molecular biology, will be given preference.

Time Commitment: 30 - 40 hours/week during the summer. This project is for the duration of the summer semester only. Future work on this project or other projects in the lab will depend on the outcomes of the summer semester.

Compensation: Salary.


Interested applicants: Email Dr. Heather Chandler at chandler.111@osu.edu

Information applicants should provide: Please email a 1-2 page resume and a short cover letter describing your interest.