

DEPARTMENT OF CHEMICAL & ENVIRONMENTAL ENGINEERING
COLLEGE OF ENGINEERING & APPLIED SCIENCES

SUMMER RESEARCH OPPORTUNITIES FOR UNDERGRADUATE WOMEN

FOR APPLICATION YEAR: 2021

PROJECT TITLE: Effect of dosing methods on improving posterior eye disease treatment

Yoonjee Park
College of Engineering and Applied
Sciences
584 Engineering Research Center
Cincinnati, OH 45221
parkye@ucmail1.uc.edu

Project Description

Although injections of implant or a bolus of drug are current standard of care for chronic posterior eye disease treatment, these methods cause serious side effects, such as cataract. Because of eye physiology, drug injected in the eye (vitreous) is cleared out within 24-48 hr. In order to keep a certain level of dose in the eye, higher dose than necessary is injected. Here, we hypothesize that the side effects are due to high initial doses right after an injection of drug.

This research project is about determining whether different dosing methods will mitigate the side effects using in vitro human 3D tissues. During the summer, you will have experience on examining cells and studying drug delivery.

The advisor will provide basic principles in drug delivery and various analytical technique.

Basic biology lab experience is required.