

VASCULATURES OF THE POSTNATAL RAT EYE. M. Donahue and I.M. Evans*, Department of Biological Sciences, med1674@rit.edu, imesbi@rit.edu

The goals of this research are to develop an accurate time line and explanation for the progression and regression of the different vascular systems in the postnatal rat eye. Rat eyes are being tested because the fetal system persists after birth and because of their similarities to the human eye. The research involves injecting a fluorescent dye, FITC-dextran, by intercardiac injection into rats at various stages after birth. The eyes can then be imaged using confocal microscopy where the illuminated blood vessels can be viewed. The pupillary membrane, part of the fetal hyaloid system, and the choroidal vascular bed are visible in the whole eye and can be imaged directly. By dissecting the eyes, we hope to be able to track the regression of the *tunica vasculosa lentis*, *vasa hyaloidea propria*, and the hyaloid artery, all parts of the fetal system and correlate the regression with the growth and development of the retinal and choroidal adult blood vessel systems. We are testing our hypothesis that regression of the fetal system occurs due to competition for blood flow from the retinal and choroidal adult systems. By doing this research, we hope to apply its results to the study of anti-angiogenesis and tumor growth as well as diseases of the eyes such as hyaloid persistence, diabetic retinopathy and macular degeneration.