## INVESTIGATION OF THE SEROTONIN 2B RECEPTOR FOR AN EFFECT ON THE RISK OF DEVELOPING PRESBYCUSIS. Laura Birdsall, Dina L. Newman\*, Department of Biological Sciences, *lab5164@rit.edu*, *dina.newman@rit.edu*

Presbycusis, also known as age-related hearing loss, is a common hearing problem among elderly people. The goal of this project is to establish whether or not the regulation of serotonin 2B receptor has an effect on presbycusis. Recent research showed that this serotonin receptor was up-regulated with age and severity of hearing loss in the cochlea (inner ear) and inferior colliculus (auditory brain region) of mice. We are investigating whether or not variation in the homologous gene in aging humans is associated with hearing ability. Thus we are genotyping six single nucleotide polymorphisms (SNPs) in the serotonin 2B receptor gene in a population of 634 people over age 58 to determine whether any of these alleles are associated with hearing ability. Genotyping is accomplished using real-time PCR with predesigned TaqMan<sup>®</sup> assays. Currently we are also sequencing samples to confirm that both alleles are present in our population at each SNP site. So far, the presence of allele differences at two of the SNPs has been confirmed, and the genotyping has been completed for those SNPs. The other four are in progress. Once genotyping of all six SNPs is complete, we will analyze the data with a general linear model that takes age, gender and other covariates into account, in order to determine whether there is an association between specific alleles and hearing ability. Completion of this research could potentially lead to a deeper understanding of the causes of presbycusis, and therefore aid in the development of treatment and prevention.