E.Coli

*Escherichia coli* or more known seen as its abbreviated name E. coli is a bacteria that is found in the environment, foods, and intestines of people and animals. I interviewed the head department of microbiology and molecular genetics, Tyrrell Conway. Dr. Conway is a graduate from Oklahoma State University class of 1984. Him and his team study how *E.Coli* and the relationship with the large intestine. Dr. Conway and his team of current six undergraduate researchers are working on two main projects. One of the projects is to elucidate the mechanisms of nutrient acquisition by *Escherichia* *coli* in the intestine. What I mean by this is how *E.Coli* colonizes the large intestine and they have data that illuminates cellular processes of the nutrition, stress tolerance, and virulence factors. This is what is important for the colonization and pathogenesis. Most importantly, they found that different *E.Coli* biotypes compete for different sugars in the intestine, saying that a mechanism for the succession of *E.Coli* strains in healthy individuals and infection by *E.Coli* pathogens that must overcome the colonization resistance barrier make known by the resident *E.Coli*. Another project is to use single- nucleotide-resolved transcriptome data for comparative gene expression analysis of competing intestinal bacteria. They looked into the understanding of how bacterial cells work, from genome to transcriptome to metabolome, and to know their genetic circuitry and metabolic networks. After this, the work within the laboratory is surrounded on how colonized bacterial cells grow and compete for nutrients in the microbial community of the mammalian intestine. Their goal is to determine mechanisms of nutrient competition between *E.Coli* strains in a mouse model of intestinal colonization and generating a single-nucleotide-resolution transcriptome map. Dr. Conway and his team also develop displays and computational environment for functions genomics data analysis. Lastly, their RNA-Seg transciptome map builds on the first published E.Coli DNA microarray paper and the world’s largest E.Coli gene expression database (GenExpDB).