DO NOT CONSIDER FOR TALK

2023 SEA Symposium Abstract

Thiel College

Greenville PA

Corresponding Faculty Member: Mary O'Donnell (mgemmel-odonnell@thiel.edu)

Annotating Bacteriophages Altheas and Romm at Thiel College

Sydney N Varga, Elijah E Flinchbaugh, Paige N Clyde, Mary G O'Donnell, Jennifer C Broderick

The SEA-PHAGES cohort at Thiel College has been a participant in the international SEA-PHAGES program since 2018. This semester, our Genetics course utilized bioinformatic approaches to better understand the phages Altheas and Romm, which were discovered in the Spring of 2022 at Thiel College. GeneMark, Glimmer, and HHPred were used to fully annotate the phages Altheas and Romm, allowing for a better understanding of phage similarities and differences. A comparison shows that Altheas and Romm are both in cluster EG and have many reverse genes in their genomes. In contrast, some notable functions for genes in Altheas are histidine triad nucleotide binding protein, DprA-like ssDNA binding protein, and RuvC-like resolvase. For Romm, notable functions of genes are helix-turn-helix DNA binding domain protein, terminase, and phosphoesterase. The comparison and contrast of these two bacteriophages in the same cluster allow for further research. This research has been important in contributing to the SEA-PHAGES database and to furthering research on the genomic evolution of phages.