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11th Annual SEA Symposium Abstract

Howard Hughes Medical Institute

Chevy Chase MD

Corresponding Faculty Member: Danielle Heller (hellerd@hhmi.org)

SEA-GENES: Investigating Phage Gene Function

Danielle Heller, Ilzat Ali, Aleem Mohamed, Maria Gainey\*, Dmitri Mavrodi\*\*, Jamie Wallen\*, Padraig Deighan

\* Western Carolina University, Cullowhee NC

\*\* University of Southern Mississippi, Hattiesburg MS

In the past decade, the SEA-PHAGES program has isolated and characterized thousands of phages, providing a wealth of genetic data to the broader scientific community. These data have already furthered our understanding of the diversity and evolutionary history of phage populations; they have also revealed the vast unknown contained within phage genomes. We believe that characterizing the functions of these phage genes is an important endeavor that will provide greater insight into phage-host and phage-phage dynamics and potentially inspire advances in therapeutics and molecular technologies. The SEA has expanded its Course-based Research Experience for undergraduates, adding SEA-GENES as a third semester course to build upon the exciting data generated by SEA-PHAGES. SEA-GENES research aims to experimentally explore the landscape of mycobacteriophage gene function. SEA researchers collaborate to develop molecular research tools and perform systematic phenotypic screens and other genetic analyses, collecting genome-wide and population-wide functional data and generating new hypotheses for future study. Here, we present an overview of the research strategy employed in the GENES course and highlight some of the exciting discoveries made by SEA-GENES researchers.