CONSIDER FOR TALK

2025 SEA Symposium Abstract

Stevenson University

Owings Mills MD

Corresponding Faculty Member: Rivka Glaser (rglaser@stevenson.edu)



Kennedy Barrow



Kelly Cunningham



Krystal Yackulak

Heating Up and Drying Up The SEA: Impact of Rising Temperatures on Bacteriophage Growth

Kennedy Barrow, Kelly Cunningham, Krystal Yackulak, Frank W Stearns, Karen Zeller, Rivka L Glaser

For the past two years, students at Stevenson University have participated in both Phage Discovery and Annotation. During the discovery process, students collected three soil samples from various locations around Maryland in the last week of August, but primarily around Stevenson’s campus, recording the time, GPS coordinates, and weather conditions during the collection. Enriched isolation using *Arthrobacter globiformis* as a host was performed, and a spot test was used to confirm the presence of phage. In Fall 2024, 21.3% of all samples yielded a positive result, indicating the presence of bacteriophage. In contrast, in Fall 2023, 54.6% of all samples were positive. A typical yield of soil samples positive for phage, according to the Phage Discovery Manual, is approximately 30%. Given these varying rates of positivity, it can be hypothesized that temperature fluctuations might have an impact on phage presence and activity. From the summer of 2023 to summer of 2024, global temperatures increased, possibly contributing to the drop in phage presence across years. According to NASA, the summer of 2024 was the hottest to date, even topping the newly set record from summer of 2023. We aim to explore possible relationships between temperature, environmental variables such as geographical location, and phage positivity rates in order to better understand how environmental factors influence phage-host interactions across the globe.