CONSIDER FOR TALK

2025 SEA Symposium Abstract

University of North Georgia

Dahlonega GA

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Lethe the Lucky Phage

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Bacteriophage, viruses that prey on bacterial hosts, have recently increased in research popularity due to their use as an
antibiotic alternative. In response to this increase, the SEA-PHAGES program created an undergraduate research
opportunity to find, isolate, purify, and annotate the genome of novel bacteriophage. Undergraduates across the world
are led to a variety of scientific research interests, and the found phages are located on a database called PhagesDB for
comparing, contrasting, and inferring details about thousands of phages. There are currently thousands of recognized kinds
of bacteriophage. 3 phage species of interest are categorized via tail morphology: Siphoviridae, Myoviridae, and
Podoviridae. Myoviridae have rigid and medium length contractile tails.
In addition to having different morphological traits, phage also follow different life cycles: lysogenic vs lytic. Some
bacteriophage can enter both life cycles, and they can enter either life cycle at any time. Other phage are restricted to one.
In the lytic cycle, the bacteriophage’s DNA is injected into the host, the genes are transcribed, new phages are assembled,
and the cell lyses, releasing the new phage. Lethe was found in Dahlonega, GA August of 2025. Lethe is a lytic Myoviridae phage from the C1 cluster. We were able to isolate and purify Lethe using Mycobacterium smegmatis mc² 155 and continued to annotate Lethe’s genome.