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11th Annual SEA Symposium Abstract

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The Bowling Green State University Expanding Mosaic of Mycobacterium Bacteriophage

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During the fall semester of the 2018-2019 Bowling Green State University SEA-PHAGES Program, 17 bacteriophage were isolated. Among these, one was individually sequenced while DNA from 12 others were combined and sequenced en masse. The sequencing results revealed that the individually sequenced lytic Siphoviridae phage JoieB belongs to the S cluster. This phage was annotated during the spring semester, and a number of characteristics of the genes present in the phage were investigated. The en masse sequencing results for the 12 additional phage revealed that clusters A1, A4, B1, C1, G1, J, and S are represented among them. We were able to determine that the S cluster phage is Pringar. Interestingly, plaque size varied significantly between the two S cluster phage; JoieB formed plaques that were approximately 1 mm in diameter while those of Pringar resembled pinpricks that were too small to measure. Other relationships between the genomes of Joieb and Pringar are discussed. Bowling Green State University has now isolated 41 new bacteriophages, and sequence results to date reveal that they include representatives of the rare S and W clusters.