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2023 SEA Symposium Abstract

Illinois Wesleyan University

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Corresponding Faculty Member: Rick Alvey (ralvey@iwu.edu)

The 18 new bacteriophages of the 22-23 IWU SEA Phages Class!

Abhirup Das, Lizzie Davis, Janani Dharmarajan, Haley Gabbard, Khel Gordhan, Brianna Grzesiak, Kayleigh Kuschewski, Kylie Matas, Jessica Navarro, Suhaas Nukanaboina, Ava Propp, Richard M Alvey

At Illinois Wesleyan University we sought to discover new bacteriophages for the host *Microbacterium foliorum* and compare them to those that we isolated using the alternative hosts *Rhodobacter capsulatus* and *Ruegeria pomeroyi*. In total the 11 students of this year’s class isolated 18 phages; 11 for *M. foliorum*, 6 for *R. capsulatus*, and 1 for *R. pomeroyi*. These phages were then examined and characterized using a variety of techniques including plaque morphologies, particle morphologies, host range, PCR, and ultimately genomic sequencing. Of our 11 *M. foliorum* phages only one was found to have podovirus morphology while the rest had siphovirus morphology with icosahedral capsids. PCR analysis revealed one of those 10 to likely be a member of the EB cluster and with genomic sequencing we found out that we had three additional phages that were members of the EE, EF, and ED2 clusters. Our phages from *R. capsulatus* showed much less diversity with 5 of the 6 all being from the same cluster. The one from *R. pomeroyi* had a notably unique prolate capsid and is most similar at the genomic level to a *R. capsulatus* singleton. Using variety of bioinformatic analyses we have continued to compare these new viruses to each other and to already-known isolates and these findings will be presented.