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# Isolation and Characterization of Previously Undiscovered Bacteriophages

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Poster Presentation P12

## **ISOLATION AND CHARACTERIZATION OF PREVIOUSLY UNDISCOVERED BACTERIOPHAGES**

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While bacteriophages are extremely abundant with  $10^{31}$  phages estimated in the world, there is much to be discovered. SEA PHAGES students working in the 2015-2016 school year aimed their study on identifying novel bacteriophages. Phages that infect *Mycobacterium smegmatis*, *Rhodobacter capsulatus* and a contaminating bacteria of the Bacillus genus were isolated and characterized; sixteen *M. smegmatis*, one Bacillus, and six *R. capsulatus* phages. The sixteen *M. smegmatis* phages were isolated from soil samples, while the the Bacillus and *R. capsulatus* phages were isolated from fresh water samples. The majority of these were discovered from central Illinois. Relatedness of these viruses was determined by lab analyses such as, immunity testing, plaque morphology, and DNA restriction enzyme analysis. Following the in-lab work, two *M. smegmatis* phages and three *R. capsulatus* were selected to have their genomes sequenced and were further studied.