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Exploring Bacteriophage Diversity: Insights from Louisiana University Environments

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Bacteriophages (phages) play a pivotal role in microbial ecology and hold promising potential for biotechnological applications. In this study, we analyzed sequenced phages obtained from four universities in Louisiana that offer bacteriophage-related course-based undergraduate research courses. Specifically, we investigated published bacterial hosts, phage clustering patterns, phage life cycle, geographic location and environmental attributes across different university settings.
Our analysis revealed a total of 57 sequenced phages distributed among the participating universities. Xavier University of Louisiana contributed 20 phages, predominantly clustering within cluster C, comprising 5 phages. University of Louisiana at Monroe showcased 33 phages, with the most common clusters being CA (8 phages) and DE (4 phages). Nicholl’s State University and Southeastern Louisiana University contributed 2 phages each, clustering within clusters AZ and AL/AY, respectively.
Overall, our study provides valuable insights into the diversity, distribution, and environmental attributes of bacteriophages discovered in environments surrounding Louisiana universities, laying the foundation for further exploration and exploitation of these microbial entities in biotechnological applications and environmental studies.