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Woods Hole Oceanographic Institution  
**Biology Department Seminar**



Thursday, September 7, 2023 – 12:00 Noon

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## **Catfish Herpesvirus Diversity, Virulence, And Evolution**

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A variety of animals, including reptiles, birds, amphibians, fish, and mammals, are susceptible to infection by herpesviruses. The emergence of new herpesvirus strains or species can result in catastrophic disease outbreaks. For example, an aquatic herpesvirus called the channel catfish virus (CCV) has caused devastating outbreaks in the catfish aquaculture industry in the United States, with a mortality rate of 100%. However, there is a need to further refine the guidelines for identifying the variants, strains, and species of aquatic herpesviruses. We performed a thorough examination of CCV isolates collected over the past five decades, encompassing their virulence, immunogenicity, genetic makeup, and evolution, in order to uncover new variants and species. We discovered and described a previously unknown herpesvirus (BCAHV) isolated from the blue catfish that is a potentially effective vaccine candidate for CCV. We also classified CCV field isolates into two genotype-based groups. In a survey of six hatcheries, these two genotypes were found in 25-100% of the catfish fry. They were present at low levels as latent infections without causing any symptoms or disease. Surprisingly, the existence of dormant viruses did not result in widespread outbreaks in catfish ponds across the industry. Thus, our findings demonstrated that these two novel CCV groups were endemic to catfish farms. Our research provides a basis for the classification of catfish herpesviruses and will aid in the development of effective strategies to minimize the economic impact of CCV disease on the catfish aquaculture industry.

HYBRID! **In person:** Redfield Auditorium **Zoom:** <https://whoi-edu.zoom.us/j/97428828592> Meeting ID: 974 2882 8592 **By phone:** Find your local number: <https://whoi-edu.zoom.us/u/aelHsuKAvr>