



CAES

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CAES SEMINAR SERIES

In-person and on Zoom

<https://us02web.zoom.us/j/87277719429?pwd=T2pVay9jWjUzS0l5cU9jTmQ2b3VNZz09>

Meeting ID: 872 7771 9429 Passcode: cg73QS

“The Hidden World of Terrestrial Giant Viruses”

Dr. Jeffrey Blanchard

Associate Professor

Biology Department

University of Massachusetts Amherst

Wednesday, December 1, 2021

12:00 noon to 1:00 p.m.

Food and coffee will be available at 11:45 a.m.

Jones Auditorium

The Connecticut Agricultural Experiment Station

123 Huntington Street, New Haven, CT

The discovery of giant viruses with genomes harboring upwards of 3,000 genes (more than some bacteria) has changed the boundaries of life. Giant viruses are part of the Nucleocytoviricota (NCV) whose members include both harmful agents (such as the causative agents of smallpox and swine hemorrhagic fever) and beneficial ones (such as those that provide biocontrol of insects, mitigation of toxic algal blooms, and enzymes for biotechnology). An environmental genomics approach involving filtration and fluorescence activating cell-sorting (FACS) was used to reveal 16 novel giant virus lineages in soil at the Harvard Forest in Petersham, MA, including the world's 2nd largest NCV genome. Transmission Electron Microscopy (TEM) of soil filtrates revealed giant viruses with hair-like extrusions found in the Mimiviridae and oval shapes with apical cork-like structures reminiscent of Pithoviridae, but also several very unusual morphotypes.