

# iFAST: The International Forum on Advanced Environmental Sciences and Technology

*A series of distinguished seminars by eminent scientists*

8 a.m. CST, 9 a.m. EST, 2 p.m. GMT, 10 p.m. China

Wednesday, Jan. 24, 2024



**JOSHUA S. WEITZ**

UNIVERSITY OF MARYLAND

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Joshua S. Weitz is a professor of biology at the University of Maryland, where he holds the Clark Leadership Chair in Data Analytics. Previously, Weitz held the Tom and Marie Patton Chair at Georgia Tech, where he founded the graduate program in quantitative biosciences. Weitz received his doctorate in Physics from MIT in 2003 and did postdoctoral training in ecology and evolutionary biology at Princeton from 2003-2006. He directs an interdisciplinary group focusing on understanding how viruses transform the fate of cells, populations and ecosystems and is the author of the forthcoming textbook, *Quantitative Biosciences: Dynamics across Cells, Organisms and Populations* (Princeton University Press). Weitz is a Fellow of the AAAS and the American Academy of Microbiology and is a Simons Foundation Investigator in Theoretical Physics of Living Systems.

## Eco-Evolutionary Dynamics and Therapeutic Impacts of Bacteriophage: a Not-So-Perfect Predator

**Abstract:** Microbes get sick, too. These viral infections transform the fates of microbial cells, populations, and communities. The infection and lysis of individual microbes releases new virus particles and redirects carbon and nutrients back into the environment. Yet, there is increasing evidence that the ecological outcome of infections is often nuanced and includes a spectrum of fates beyond rapid infection and lysis. This talk combines insights from mathematical models, in vivo experiments, and field data to explore how inefficient infection and non-lytic outcomes shape the use of phage as therapeutics and the impact of phage on marine ecosystems.



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Zoom webinar ID: 934 8142 2012 ([zoom.us/j/93481422012](https://zoom.us/j/93481422012))

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