



JOHNS HOPKINS
Center for Environmental
& Applied Fluid Mechanics

SPRING 2022 CEAFM VIRTUAL SEMINAR

“Aerosol Enrichment and Agitation from Bursting Bubbles”

Presented by Prof. James Bird

Boston University

College of Engineering

Hosted by Rui Ni (MechE)

Abstract: Microbes, pathogens, and other solid particulates suspended in a liquid frequently attach to the interface of entrained air bubbles as they rise to the surface. When the bubbles eventually rupture at the liquid surface, these particulates can be ejected into the surrounding air as film or jet droplets. The aerosol size and pathogen concentration are important parameters to assess the risk of infection, and the fundamental fluid mechanics that sets these parameters is an active area of research. Through a combination of high-speed imaging and numerical simulations, this talk identifies some new insight into the underlying source mechanisms that may assist in accurately modeling this transport. Implications for both environmental and respiratory disease transfer are discussed.

Bio: James Bird is an Associate Professor in the Department of Mechanical Engineering at Boston University. He received his B.S. from Brown University and his Ph.D. from Harvard University, after which he completed an NSF postdoctoral fellowship at MIT. His research focuses on interfacial fluid dynamics with an emphasis on the dynamics of drops and bubbles. He is the recipient of a Fulbright Fellowship (2003), an NSF CAREER award (2014), and an ONR YIP award (2016), and his work has been featured in popular press outlets including the New York Times, BBC, and PBS Nova.



Friday, March 11, 2022 at 3:00 PM

Zoom Meeting

<https://wse.zoom.us/j/93762992307>