

UCSD NANOENGINEERING/CHEMICAL ENGINEERING
SEMINAR SERIES

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Seminar Presentation: 11:00am - 12:00pm
SME Room 248



“Ebola virus infection both frequently lethal and associated with a persistent state? Toward understanding the role of Ebola virus defective genomes in vitro and in vivo”

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Abstract: Filoviruses include Ebola virus, Sudan virus, and Marburg virus and are associated with sporadic outbreaks with high case fatality rates. They are classified as Risk Group 4 viruses and require maximum containment facilities (BSL-4) — such as we have at Boston University — to be handled safely. We are interested in identifying important biological functions that are revealed when viruses respond to selection pressures. While looking for evidence of vaccine and therapeutic escape in infected animals we noted an unexpected increase in abundance of nucleic acid that corresponded to the trailer region of the viral genome. Further study identified that stem-loop RNA molecules are generated from the viral genome during infection. Similar RNAs have been recognized for decades and are often associated with "defective interfering particles." Here I will present data showing how these RNAs accumulate during infection and how they may have a role in both acute Ebola virus disease and persistent Ebola virus infection.

Biosketch: Anthony Griffiths, Ph.D. received his undergraduate degree from the University of Reading, UK and his Ph.D. from the University of Cambridge, UK. Following post-doctoral training at Harvard Medical School he established his own group at Texas Biomedical Research Institute in San Antonio, Texas. During this time, he focused on understanding pathogenesis and developing medical countermeasures for viruses that require maximum containment (BSL-4). He was recruited to Boston University's National Emerging Infectious Diseases Laboratories in 2018 to help establish work at BSL-4. He has active programs studying pathogenesis and medical countermeasure development for many viruses including Ebola virus, Sudan virus, Marburg virus, Nipah virus, Lassa virus, Crimean Congo Hemorrhagic Fever virus, and Sars-CoV-2.