Anthony DeLegge
Symposium on BEER – November 11-13, 2022

Abstract for Talk

Title: The Effects of Vaccine Misinformation on Disease Spread

Abstract: In the spring of 2021, vaccines from Pfizer, Moderna, and Johnson and Johnson became available to the general public to help protect against COVID-19. Since then, a total of 68% of the eligible population in the U.S. has been fully vaccinated against the disease, but this still leaves over 70,000,000 completely unvaccinated. One reason for this has been the spread of misinformation regarding the vaccines, ranging from the seemingly plausible (vaccine affects fertility, COVID isn't that bad of a disease) to the absurd (vaccine will implant 5G microchip). Although all of this misinformation has been debunked in some form or another, it persists and can form the basis for people refusing to take the vaccine.

In this talk, we will build a mathematical model for the spread of a disease through a population where a vaccine is available. We will then introduce an active misinformation spread to try and answer the question: What are the short-term and long-term effects of vaccine misinformation on the spread of a disease where a vaccine is available? Is it simply a nuisance, or does it have a profound effect on the disease spread?