MARIA SISKAKI, University of California, Los Angeles
How to Solve an ODE by Week Three of College (and why this is important)

Calculus (sometimes followed by a formal ODE course) is the typical path for the mathematical training of life science students. However, this path is increasingly scrutinized as a way to meet their mathematical needs. Modern life science now sits at the interface of biology, mathematics, and computation, and modeling and dynamical systems have become essential. So, is calculus still the best foundation? In this talk, I will describe a course sequence for first-year students that takes a modeling-first approach to dynamical systems, offering an alternative to the traditional calculus sequence. Along the way, I will ask what solving an ODE means for a life scientist and show how students can be working with ODE models by week three of their first math course, opening the door to the mathematics they need as future life scientists.