

Mathematical Biology is an interdisciplinary area that involves development of novel mathematical tools to provide insight into biological processes. This is done in close collaboration with empirical researchers from biological sciences, medicine, engineering and public health, among others. We combine model development, analytical and numerical tools, as well as data to address real-world problems.

Math Bio Faculty

- Dr. Nicole Abaid (nabaid@vt.edu) is interested in dynamical systems and control theory, with a focus on biologically inspired problems and multi-agent systems and their collective behavior.

- Dr. Lauren Childs (lchilds@vt.edu) develops and analyzes mathematical and computational models to examine biologically-motivated questions.

- Dr. Stanca Ciupe's (stanca@vt.edu) research is in the field of applied mathematics, specifically, applying systems of ordinary and delay differential to in-host dynamics.

- Dr. Omar Saucedo's (osaucedo@vt.edu) research focuses on the propagation of infectious diseases using mathematical models.

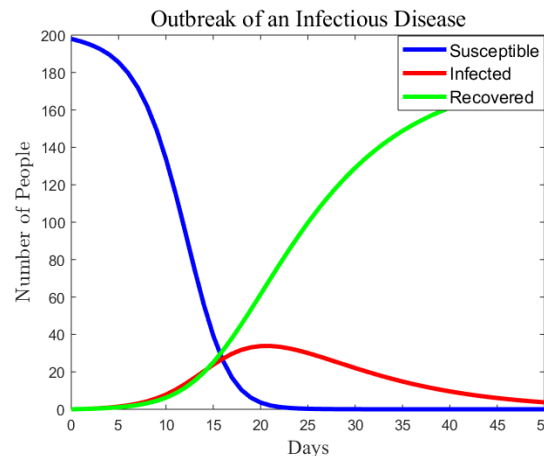
- Beyond our primary faculty, the math department has other affiliated MathBio faculty: John Burns, Layne Watson.

Math Bio Seminar

We host a weekly math biology seminar where faculty, post-docs and graduate students from Virginia Tech and other universities come to share their new and exciting research.

Graduate Courses in Math Biology

The math department offers a core graduate sequence course (Modeling and Simulation of Biological Systems) taught by the math biology faculty. This sequence provides an introduction to mathematical techniques for modeling biological systems and covers continuous and discrete modeling techniques with applications in immunology, cell physiology, ecology and epidemiology.



Lab Meetings with Math Bio Group

The math biology group hosts a weekly meeting with the graduate students to discuss current literature, lead discussions, and share on-going research. These meetings provide a great opportunity to engage with other graduate students in math biology in an informal environment.

Interdisciplinary Opportunities

Strong connections with faculty in the departments of biological sciences, biomedical sciences and pathology, statistics, physics, fish and wildlife conservation, and population health sciences. In addition, the faculty is affiliated with the Fralin Life Sciences Institute, Genetics, Bioinformatics, and Computational Biology, and the Center for Emerging and Zoonotic Pathogens.

Virginia Tech has launched a new infectious disease interdisciplinary graduate education program whose goal is to train graduate students in the latest cutting edge of transdisciplinary research by bringing together more than 100 faculty from six colleges and over 25 departments.



Please email any of us if you have questions!

