Group Leader

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Key Areas of Math to be Proficient At

Modeling
Analysis
Simulations (e.g., MATLAB, Fortran, Python, etc.)

Required Courses (Taken or will take soon) for Undergrad Senior Project

MTH 286 Intro. to Differential Equations
MTH 311 Intro. to Numerical Analysis
MTH 401 Mathematical Modeling

Required Courses (Taken or will take soon) for MS Project

MTH 525 Math Methods for Engineers and Scientists I
MTH 626 Math Methods for Engineers and Scientists II or MTH 593: Topics in Mathematics (Applied Versions)
(Recommended) MTH 587 Dynamical Systems, MTH 577 Numerical Methods I

Group Focus

We are applied mathematicians specializing in solving problems originating at the interface of mathematics, physics and biology taking advantage of the tools and data present in each field to build better models. The unifying theme among all group research topics is interactions (interparticle, molecular, fluid-mediated, ...) leading to the emergence of natural phenomena. This work consists of developing differential equations based models for biosystems and materials that predict the emergence of collective behavior and result in dramatic changes in the system's effective properties. Mathematical analysis and simulations are used to uncover deeper understanding of the systems under consideration. **Focus Areas:**

- Mathematical Biology
- Computational and Applied Mathematics
- Materials Science

Keys To Being Successful

1. A Senior/MS Project is YOUR project! I am here to provide advice and encouragement, but the project's success or failure is ultimately on your dedication.

2. If you are doing a senior project you should form a plan and start reading papers the semester before you intend to write the project and turn it in (projects take two semesters of work).

3. It helps to have people with different expertise or academic standing for new and creative ideas.