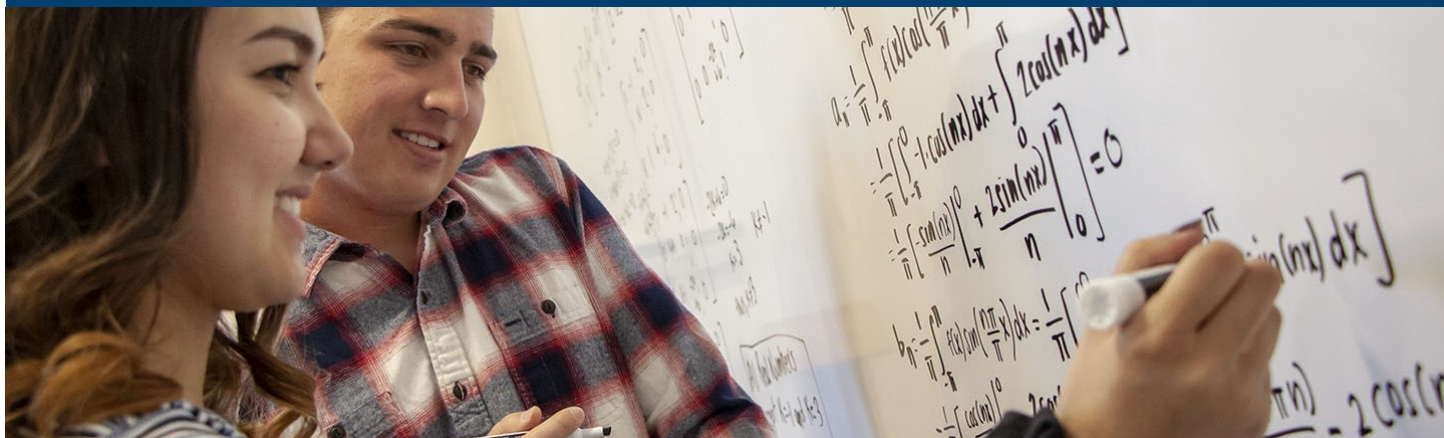# GONZAGA UNIVERSITY

Applied Mathematics Program

College of Arts & Sciences

An Interdisciplinary Approach to Mathematics

In support of the growing societal demand for mathematically inclined students who are interested in applying mathematics to other disciplines and in working in interdisciplinary settings, the Department of Mathematics is pleased to announce a new program in Applied Mathematics. In addition to offering Bachelor of Science, Bachelor of Arts, and Minor degrees in Mathematics, we now offer Bachelor of Science and Minor degrees in Applied Mathematics.

APPLYING MATHEMATICS TO [YOU FILL IN THE BLANK]

An Applied Mathematics degree allows students to combine their interest in mathematics and mathematical reasoning with a specific scientific field of intellectual activity. Students majoring in Applied Mathematics can choose to pursue any of six possible concentrations in Economics, Computer Science, Biology, Chemistry, Physics, and Biochemistry (or elect to have no concentration); additional concentrations may be added in the future. This flexible degree program has been designed to complement other technical majors and minors at Gonzaga and is thus attractive as a double major or as a stand-alone major.

WHAT CAN YOU DO WITH AN APPLIED MATH DEGREE?

The Applied Mathematics program will prepare students for graduate level study in applied mathematics, engineering, or interdisciplinary programs, as well as careers in government, industry, and research institutions in areas such as systems biology, ecology, chemistry, computer animation and digital imaging, finance and economics, environmental sciences, climatology, and medicine. The interdisciplinary nature of the Applied Mathematics program supports Gonzaga's mission of cultivating creativity, innovation, and lifelong learning in students. In addition, the program's focus on understanding phenomena encountered in science or those driven by social needs is consistent with the Jesuit traditions of care for the planet and service to society.

CAREERS IN MATHEMATICS

A mathematics degree is a great foundation for many jobs that require numerical and analytical ability such as:

- Actuary
- Statistician
- Quantitative Analyst/Researcher
- Systems Engineer
- Data Analyst/Scientist
- Simulation Engineer
- Cryptanalyst
- Forecast Analyst
- Operations Researcher

RESEARCH IN APPLIED MATHEMATICS

Our department has a thriving undergraduate research program, with most faculty actively collaborating with several undergraduate students. Research specialties of our applied mathematics faculty include medical imaging, stochastic processes, dynamical systems, statistics, numerical analysis, differential equations, and mathematical modeling. Recent student research projects include:

- Reconstruction Methods for Electrical Impedance Tomography
- Kinetic characterization of HMG-CoA Reductase
- Linear stability analysis of an evolution equation for rhombic planform nonlinear theory
- Designer multistep methods
- Chaotic behavior in a discrete-time duopoly model

For more information contact: Dr. Michelle Ghrist at ghrist@gonzaga.edu or 509-313-3849