

# Mathematical Sciences

## College of Letters and Science

### Undergraduate Programs:

- Applied Mathematics
- Mathematics
- Mathematics Teaching
- Statistics

### Minors Available In:

- Mathematics (non-teaching)
- Statistics (non-teaching)
- Mathematics Teaching

### Graduate Programs:

- M.S. in Mathematics
- M.S. in Mathematics Education (online)
- M.S. in Statistics
- M.S. in Ecological and Environmental Statistics
- Ph.D. in Mathematics
- Ph.D. in Mathematics Education
- Ph.D. in Statistics

### Accelerated M.S. Program:

With careful planning a student can earn both a B.S. and a M.S. in five years.

### Faculty:

For a list of current faculty see:  
[www.math.montana.edu/faculty/](http://www.math.montana.edu/faculty/)

For additional information, contact:

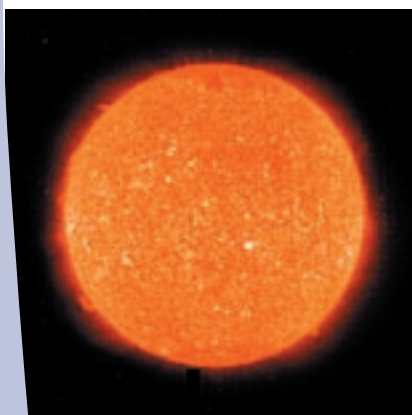
### Department of Mathematical Sciences

Montana State University  
2-214 Wilson Hall  
P.O. Box 172400  
Bozeman, MT 59717-2400  
Tel: (406) 994-3601  
Fax: (406) 994-1789  
[math@math.montana.edu](mailto:math@math.montana.edu)

[www.math.montana.edu/](http://www.math.montana.edu/)

## A Formula for Success

The Department of Mathematical Sciences provides unique opportunities for innovative instruction and cooperative research. With approximately 30 Ph.D. faculty, 100 undergraduate majors and 100 graduate students, the department is large enough to attract and retain the most capable faculty, but small enough to allow faculty and students an intimate atmosphere for the easy exchange of ideas.



*Projects include solar physics. Photo courtesy of NASA*

The Department of Mathematical Sciences is recognized as a leading department in mathematics, mathematics education, and statistics in the Rocky Mountain region. Bachelors, masters, and doctoral graduates in all areas are following successful careers in industry, government, and academia.



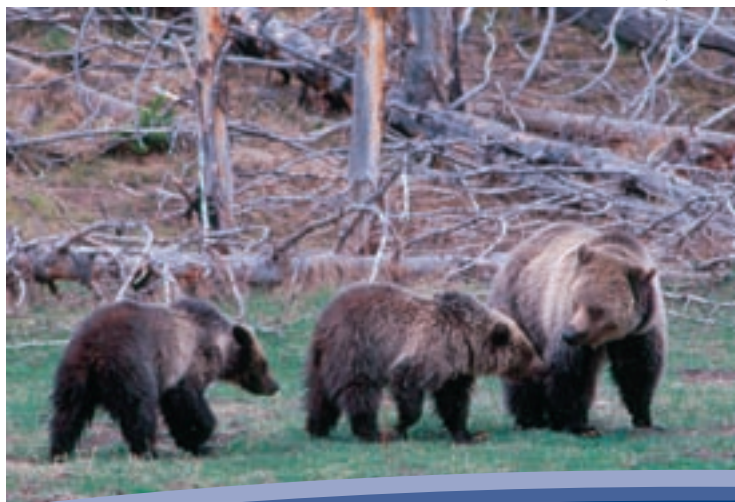
*Interdisciplinary opportunities include analysis of glaciated valleys*

The department conducts research in both pure and applied mathematics with emphases in dynamical systems, mathematical biology, and applied and computational mathematics.

Statistics research also encompasses a broad range of theoretical and applied topics with several interdisciplinary opportunities including the environmental and biological sciences.

Mathematics education research addresses applied and practical areas including teacher preparation, coaching and mentoring for in-service teachers, online learning research, problem-based learning, and curriculum development for K-12 mathematics.

*Extensive work is done to monitor the Greater Yellowstone Ecosystem*



**MONTANA**  
STATE UNIVERSITY

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## Interdisciplinary Opportunities:

- Analysis of glaciated valleys
- Atmospheric optics
- Bacterial biofilms
- Control of guidance systems
- Greater Yellowstone Ecosystem monitoring
- Hazardous waste assessment
- Image deblurring
- Mathematical biology
- Modeling atmospheric data
- Gene regulation modeling
- Neuroscience
- Solar physics

## Research Areas:

- Adaptive cluster sampling
- Complex dynamics
- Computer algebra systems in mathematics
- Continuum theory
- Dynamics of iterated maps
- Knowledge construction in online courses
- Mathematical content knowledge for teaching
- Scientific computation
- Sensitivity theory
- Spatial statistics
- Statistical computing
- Surface dynamics

## Great Learning Facilities:

- Mathematics Learning Center
- Mathematics Education Classroom
- Mathematics Media Lab
- Computer Lab
- Department Library/Seminar Room

## Where Can I Work With a Degree in Mathematical Sciences?



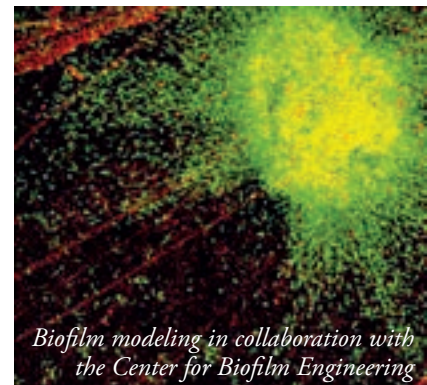
*Interdisciplinary study of thermal spring microbial life in Yellowstone National Park*

- National research laboratories, such as Argonne, Idaho, Los Alamos and Pacific Northwest, and private research laboratories such as the Santa Fe Institute
- State government
- Teaching in K-12 or universities
- Pharmaceutical industry, such as Abbott, Bristol Myers Squibb, GlaxoSmithKline and Eli Lilly

*Dr. John Borkowski, Letters & Science Distinguished Professor and Fulbright Lecture Award recipient.  
Photo by Kelly Gorham, MSU News*



- Aerospace industry, such as Aerospace Corporation, Boeing, Goodyear Aerospace, Lockheed Martin and Raytheon
- Computer software and hardware industry, such as Intel, Microsoft, Qwest, RightNow Technologies and Zoot Enterprises
- Federal government agencies, such as the Internal Revenue Service and the National Security Agency



*Biofilm modeling in collaboration with the Center for Biofilm Engineering*

## OTHER OPPORTUNITIES

- Study abroad in countries such as England, Turkey and New Zealand
- Honors courses available in Calculus I, Calculus II, Multivariable Calculus and Differential Equations
- Research opportunities either in the classroom (Research Experiences in Applied Mathematics) or one-on-one with individual faculty
- Active undergraduate workshop series covering careers, graduate schools, study abroad and undergraduate research