

# MATHEMATICS & STATISTICS

PROGRAMS *at the* UNIVERSITY OF ALASKA FAIRBANKS



## *Naturally Inspiring*

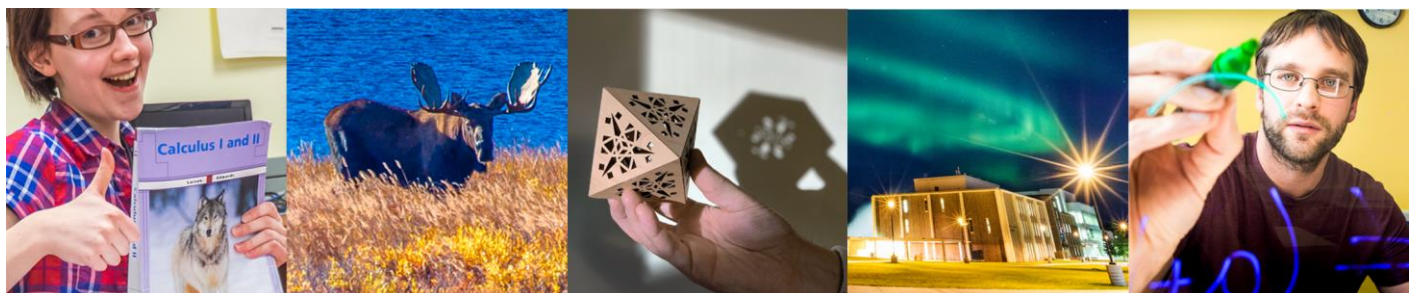


**Mathematics and Statistics**, along with the critical thinking their study develops, are increasingly vital to diverse careers. Our programs enable students at all levels to develop their talents and prepare for their futures. Small classes, accessible professors, and a balanced curriculum of pure and applied topics are hallmarks of our programs.

**B.A. and B.S. in Mathematics:** Students gain knowledge and skills that transfer well to careers in industry, government, and education. Tracks within the major allow students to focus on applied or pure mathematics, or statistics.

**B.A. and B.S. in Statistics:** Students gain knowledge and skills that transfer well to careers in industry, government, and education. Tracks within the major allow students to focus on applied or pure mathematics, or statistics.

- Mathematical Biology
- Control Theory
- Discrete Geometry
- Inverse Problems
- Numerical Analysis
- Combinatorics
- Graph Theory
- PDEs
- Mathematical Physics
- Mathematics Education
- Spatial Statistics
- Bayesian Modeling
- Measurement Error
- Nonparametric Statistics



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**UAF** COLLEGE OF NATURAL  
SCIENCE & MATHEMATICS  
University of Alaska Fairbanks

# Jobs in Mathematics

*Thinking of a career in Mathematics?  
You can find employment in a wide variety of organizations.  
Check out some possible job offerings:*



**Teaching** – high-demand field to teach K-12, professors teach courses to undergrad and graduate students.

**Actuarial science** – takes mathematics and statistics and applies them to finance and insurance, analyze the financial costs of risk and uncertainty.

**Operations research** – uses mathematical methods to arrive at optimal decisions to problems in maximizing or minimizing things like costs or profits.

**Biomathematics** – models natural and biological processes using mathematical techniques and tools, areas such as cellular neurobiology, epidemic modelling and population genetics.

**Cryptography** – practice and study of hiding information, the making and breaking of secret codes, cryptography applications include the security of ATM cards and computer passwords.

**Data mining and privacy** – discovery of patterns and previously unknown information in large data sets, fields such as security, forensics, e-commerce, bioinformatics and genomics, astrophysics, medicine and chemical and electrical engineering.

**Computer animation and digital imaging** – algorithms for computer animation rely heavily on techniques from scientific computation, statistics, signal processing, linear algebra, control theory and computational geometry.

**Finance and Economics** – development of quantitative techniques and computational models used in the financial industry, studies and addresses the ways in which individuals, businesses and organizations raise, allocate, and use monetary resources over time, taking into account the risks entailed in their projects.

**Ecology/epidemiology/environment** – look at populations and their interactions and model them as systems of different equations that can be used to model diseases in human populations.

**Climatology** – simulating the component forces that drive the climate,, sophisticated models based on physical principles, expressed as complex partial differential equations.

**Statistician** – gathers numerical data and then displays it, helping companies to make sense of quantitative data and to spot trends and make predications. A variety of companies hire statisticians: zoos, research institutes, health agencies, census bureaus, government just to name a few.

**Data analyst** – build online models to predict customer shopping patterns and to create a personalized customer experience.

**Director of analytics** – use data to improve performance and make the organization stronger.