JUNIATA COLLEGE

think·evolve·act

Mathematics

The Juniata Advantage

- **Individualize:** Excel in a specific field of mathematics from pure math to applied math, or craft an **individualized Program of Emphasis** (POE) by combining mathematics with other subjects including, but not limited to, physics, business, information technology, art, religion, or biology. Design courses of independent study in an area that particularly interests you.
- **Research:** Undertake a **major research project** as a capstone experience and present your work at Juniata's Liberal Arts Symposium or other professional venues like the regional Mathematical Association of America conference.
- **Experience:** Our math professors teach with the latest classroom technology. Juniata students use mathematical software such as Maple, Minitab, and more. Juniata classes are characterized by **personal interaction between students and faculty.** Small class sizes are the norm and Juniata's community is supportive and flexible.

"The math department is great because it is flexible enough that I have time to take a wide array of classes that allow me to experience and understand all the different applications and approaches of mathematics."

—Nathan Anderson-Stahl '16
MATHEMATICS

Juniata's Outcomes

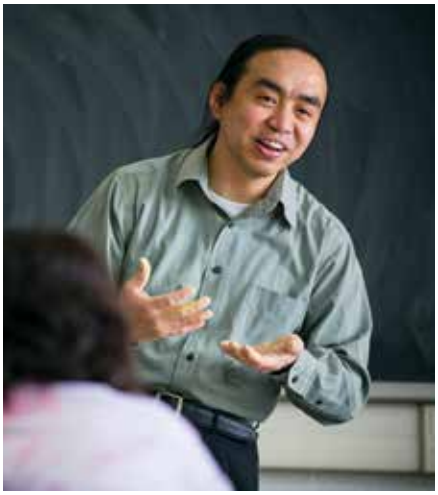
Juniata's math graduates **attend graduate schools** such as Boston University, Johns Hopkins, Michigan State, Penn State, University of California-Santa Barbara, Kansas, Florida, Cornell, and Princeton. They have been **employed in research, teaching, law, medicine, and data analysis.**

Our Recent Graduates

- Vickie Arthur '14 is currently carrying out **post baccalaureate research at the National Institutes of Health.** Her work at NIH mirrors her work at Juniata where she blended math and biology to research in the burgeoning field of bioinformatics.
- Oyinlola Lesi '14 is **employed at Goldman Sachs** where she works in the operations division in Salt Lake City, Utah.
- Duncan Morgen-Westrick '15 whose POE at Juniata was computer science with a secondary emphasis in mathematics, is employed as a **software quality engineer** at Northrop Grumman in Melbourne, Fla., doing "big picture" software engineering.
- Dana Relation '14 is **enrolled at Purdue University** to receive a **master's degree in business.**
- William McGrew '14 is **attending the University of Colorado** where he is **pursuing a doctorate in physics.**

A Sampling of Courses

Abstract Algebra
Calculus I, II & III
Combinatorics
Differential Equations
Discrete Structures
Foundations of Mathematics
The Heart of Mathematics
Mathematical Modeling
Nature of Mathematics
Numerical Analysis
Probability and Statistics
Real Analysis
Statistical Consulting
Symbolic Logic
Topics in Geometry



Faculty

At Juniata, **93 percent** of faculty hold the highest degree in their field. In the math department, 100 percent of faculty have earned Ph.D.s, and they serve, first and foremost, as professors. One professor won the award for distinguished teaching from the Allegheny Mountain Section of the Mathematical Association of America. Another has published in scholarly journals such as *Current Practices in Quantitative Literacy, Journal of Combinatorial Mathematics and Combinatorial Computing, Mathematica Bohemica,* and Juniata's own journal, *Voices.* To see which math professor has served as the head of Juniata's Scholarship of Teaching and Learning Faculty group, visit: **www.juniata.edu/academics/departments/math/research.php**

Mathematics Department Chair: John Bukowski, B.S., Carnegie Mellon University, Sc.M., Ph.D., Brown University.

Your Career Path

Check out the mathematics department web page to explore your career path.

JUNIATA COLLEGE

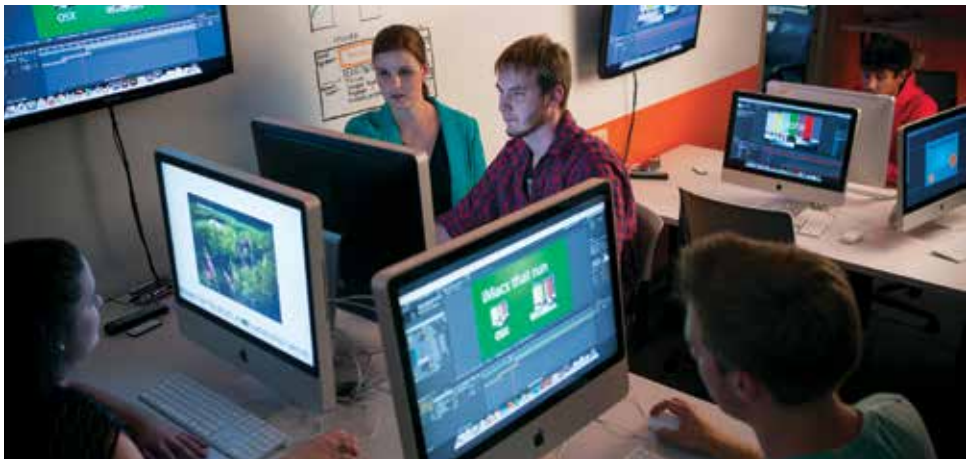
A Mathematics POE Story

In addition to a solid foundation of courses in mathematics, the math Program of Emphasis (POE) provides you with choices from specialized sequences in applied mathematics, theoretical mathematics, and mathematical applications. Or, try the mathematics and secondary education POE. Through it, you can receive excellent preparation for becoming a high school mathematics teacher by taking a full slate of mathematics courses and receiving exceptional instruction in Juniata's Education Department.

As you move through the POE, you can participate in extracurricular activities such as **conferences** for undergraduates, an international math modeling contest, and math talks in a colloquium series. Get involved as Juniata hosts the **American Mathematics Competition,** an annual event. Or, take Statistical Consulting, a **service-learning course** where Juniata's math students complete data analyses for campus and community organizations. The math department also has an alumni panel that returns during Homecoming to teach students about their careers and mentor them in discovering the right opportunities.

When combined with the close student-faculty relationships at Juniata, the math curriculum produces incalculable success. Juniata's math alumni go on to careers in government, accounting, actuarial science, finance, education, and beyond. But don't just take our word for it.

"The math department at Juniata is a tight-knit community where I can really share and bond with my professors and classmates for my love of a seemingly nerdy subject," says Amy Ankney '15.



Student Opportunities

Null Set: Juniata's mathematics club promotes the appreciation and enjoyment of mathematics among the entire Juniata community. Help them co-sponsor mathematics colloquia and host math-related entertainment events. And, be part of Null Set delegations to mathematics conferences.

Study Abroad: Recently, math students have studied abroad in New Zealand, England, and Hungary. **Juniata has programs on every continent except Antarctica.**

Penn State's MASS Program: Held during the fall semester of each year, you can combine advanced learning with research initiation through the Mathematics Advanced Study Semester at Penn State. A charged interactive environment where talented undergraduates, graduate students, and committed research faculty collaborate, the program sometimes serves as a stepping stone to graduate study for Juniata students.

Undergraduate Research: Conduct research in a topic of your choosing with the guidance of a faculty member. Then, present at conferences—like Juniata's Liberal Arts Symposium, the National Conferences for Undergraduate Research, or seminars/workshops specific to mathematics. ***Recent examples:*** Conner Hunter-Kysor '16, "Applying Time Series Data Analysis to Biological Data;" Kaitlynn Plummer '15, "Hark! How the Bells: A Study of Inversions in Change Ringing."