Mathematics at Monmouth University

David C. Marshall

Department of Mathematics
Monmouth University

October 9, 2008
Overview of the Department

Overview of the Programs

Overview of the Profession
The Faculty
The Faculty

- 10 tenure-track faculty (4 female, 6 male)
- 2 full-time lecturers who bring valuable real-world experience
- All are dedicated educators who enjoy working with students
- Award winners! Dr. Bonnie Gold won the MAA New Jersey Section Award For Distinguished College or University Teaching
The Co-Chairs

David C. Marshall

Assistant Professor, Co-Chair
Ph. D., University of Arizona

Office: Howard Hall Room B-22
Phone: 732-571-4465
E-mail: dmarshall@monmouth.edu
Web site: Homepage

TEACHING
- MA 317-01, Geometry
- MA 413-01, Complex Analysis

RESEARCH INTERESTS
Number Theory, Bilinear and Quadratic Forms; Mathematical Preparation of Teachers

Joseph F. Coyle

Associate Professor, Co-chair
Ph.D., University of Delaware

Office: Howard Hall Room B-25
Phone: 732-571-4465
E-mail: jcoyle@monmouth.edu
Web site: Homepage

TEACHING
- MA 115-01, Mathematical Models in Biology
- MA 198-01, Mathematical Programming
- MA 314-01, Number Theory

RESEARCH INTERESTS
Numerical Analysis; Electromagnetic Scattering; Inverse Problems
The Mathematics Department at Monmouth University is a community of learners and teacher-scholars.
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Its mission is to help all its students gain an appreciation of mathematics, both as a science and as a humanistic study.
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Mission Statement

This involves helping students develop:

- an adequate knowledge of mathematics to enable students to pursue a mathematical career
- the ability to reason mathematically, both formally and intuitively
- the ability to read, discuss, write about, and orally present mathematics
- the ability to work both independently and collaboratively on mathematical problems
- the ability to use contemporary mathematical software
- an appreciation that mathematics is a constantly developing field with interrelations both within mathematics and with human culture and science
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Math Learning Center

- Provides drop-in assistance for all levels of undergraduate mathematics courses.
- Staffed by Coordinator Judy Toubin and upper-level mathematics and science majors.
- Also be used by students as a place to work on homework problems or to study for examinations.
- Center has eight computers connected to the campus network.

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The mathematics department oversees the Mathematics Laboratory, which houses 30 computers connected to the campus network. Our majors are exposed to various mathematical software, including Maple, Geometer’s Sketchpad, and Matlab.
Degrees We Offer

Students at Monmouth can earn the following degrees:

▶ Bachelor of Science in Mathematics
▶ Bachelor of Science in Mathematics and Education
▶ Secondary, middle, or elementary certification
▶ Master of Science in Financial Mathematics
▶ Minor in Mathematics
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Curriculum

- First Year: Introduction to Mathematical Reasoning; Calculus I, II
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- Second Year: Calculus III; Linear Algebra; Differential Equations
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- Fourth Year: Real and Complex Analysis; Geometry; Mathematical Modeling
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- Math/Ed Majors: Student Teaching during final semester
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The Experiential Education requirement may be completed in many ways, including through a cooperative learning placement, an internship, a service learning project, an experiential education course, or study abroad for a semester.
Experiential Education

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  Other math majors often satisfy the requirement by taking MA 419, Introduction to Mathematical Modeling.

  Course Description:
  Introduction to mathematical modeling, which is a process in which a real-world situation is studied, simplified, and abstracted to the point that mathematical tools can be applied to gain an understanding. Introduction to the process, first via a text and mini-projects, then in teams investigating problems from local industries or organizations.
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Organizations that have recently supplied projects for MA 419:

- New Jersey Department of Labor
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- Rockport Pheasant Farm
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- Rockport Pheasant Farm
- The Monmouth Coastal Watersheds Management Partnership
Experiential Education

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- New Jersey Division of Fish and Wildlife
- The Endangered and Nongame Species Program
- Rockport Pheasant Farm
- The Monmouth Coastal Watersheds Management Partnership
- Monmouth County Planning Board
What can you do with your degree?

▶ No major gives you more flexibility in what you can do after you graduate than mathematics.
▶ Employers are looking for people who can think logically and solve problems.
▶ Mathematics majors can (and many do) go on to medical or law school (or graduate school in mathematics), work in the business and financial sector, work in the government, and do many other things.

Alumni Early Career Profiles

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Education

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  - A Masters Degree in mathematics can qualify you for college level teaching.
  - Become your favorite Professor: get a Ph.D.
Education

Janine McMillin, Class of 2006

EDUCATION
- BS in Mathematics
- BS in Education

EMPLOYER
Piscataway High School, New Jersey

WHAT I DO
During my student teaching at Piscataway High School in the fall of 2006, one of the math teachers at the school decided to announce her retirement for January of 2007. With this opening, the school decided to interview me and offer me the position. I eagerly accepted the position and am currently teaching two Algebra I classes and three HSPA 9 courses. HSPA 9 is a class for students who did not pass the Grade Eight Proficiency Assessment (GEPA). This course is expected to prepare the students for the HSPA exam they will need to pass in their junior year in order to graduate. I am also the junior varsity field hockey coach at Piscataway High School.
Actuarial Science

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- In 2002, a Wall Street Journal survey on the best jobs in the United States listed “actuary” as the second best job.
Actuarial Science

Stephen Woelfer, Class of 2005

EDUCATION

- BS in Mathematics
- Minor in Business
- Minor in Spanish
- Honors Program

EMPLOYER

WellPoint Blue Cross Blue Shield, Connecticut

WHAT I DO

Currently I am an actuary for WellPoint, Blue Cross Blue Shield in Connecticut. My title is actuarial student, and I have passed three of eight actuarial exams required to be at the top of my field. There are many different focuses an actuary could have; I work in large group medical insurance pricing. Some of my responsibilities include pricing special benefits and pricing a given product for a particular group based on their demographics and statistics.
Lisa Marchalonis, Class of 2006

EDUCATION
- BS in Mathematics
- Minor in Information Technology
- Minor in Business

EMPLOYER
Prudential Finance, New Jersey

WHAT I DO
After graduating Monmouth University in May of 2006, I started working at Prudential Finance in Newark. My current title is actuarial forecasting and pricing associate. Some of my responsibilities include making utilities and standardizing processes to make results repeatable. We are constantly trying to improve the current processes and make future developments. Depending on where the resources are needed, I could be working with pricers who price life insurance products or financial modelers who work on forecasting. It is a mixture of programming and using actuarial software.
Mathematical Finance

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- New for Fall 2009: Master of Science in Financial Mathematics
Finance

Lauren Grobelny, Class of 2007

EDUCATION

- BS in Mathematics
- BS in Education
- Minor in Finance

EMPLOYER

Rumson Capital LLC, New Jersey

WHAT I DO

After interning with Rumson Capital LLC for over a year, I was offered a full-time employment opportunity upon graduation in January 2007. Rumson Capital LLC is an investment advisor managing over $500 million in hedge fund assets engaged in a variety of global arbitrage strategies. Rumson Capital LLC is registered with the SEC, CFTC, and NFA. My current title is analyst, and I am also cross trained in operations and trade support. Some of my responsibilities include portfolio database management, executing queries, and research.
Why Mathematics at Monmouth?

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- MU chapter of Kappa Mu Epsilon, national mathematics student honor society.
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- Excellent, dedicated faculty who get to know the students individually and care about the students’ success.