Mathematics

Doctor of Philosophy
Master of Science and Master of Arts

PROGRAMS OF STUDY: The Department of Mathematics offers a strong program leading to the Doctor of Philosophy (Ph.D.) degree. The Ph. D. program requires advanced course work, three qualifying exams (one of which can be a special topic of the student's choice), a language exam, and a dissertation. The dissertation can be in any area within the broad expertise of the faculty. The Department of Mathematics also offers programs leading to other graduate degrees, such as the Master of Science (M.S.) and the Master of Arts (M.A.) degrees. The M.A. program is intended **solely** for secondary school teachers.

RESEARCH: The faculty of the Department of Mathematics is engaged in high quality research and is eager to share its knowledge and enthusiasm with students. There is an active colloquium program, as well as weekly seminars in various focused areas of mathematics. The degree programs are flexible and can be tailored to the needs and interests of students with diverse mathematical backgrounds. Classes are generally small and students can expect to receive personal attention, often unavailable at larger institutions. The faculty takes pride in working closely with students and directing their research. The faculty has a wide range of research interests, including:

- Algebraic Combinatorics

- Algebraic Geometry and the Mathematics of String Theory

- Differential Equations and Dynamical Systems

- Differential Geometry and General Relativity

- Mathematical Biology

- Stochastic Processes and Mathematical Finance

- Topology and Gauge Theory

For students specifically interested in mathematical ecology, there is a program administered by the Institute for Theoretical and Mathematical Ecology which combines graduate work in mathematics and in biology (through the Department of Biology) or marine biology (through the Rosenstiel School of Marine and Atmospheric Science.)

SUPPORT: The Department of Mathematics provides a number of teaching assistantships, with a current (2015-16) stipend of $22,000. In addition to the stipend, TAs receive a tuition waiver. Other types of support may be available for qualified applicants.

SURROUNDING AREA: The campus is located in Coral Gables, a lovely suburban community about 7 miles from downtown Miami. The Everglades National Park, Biscayne National Park, and the ocean beaches (including the internationally famous South Beach), which attract nature lovers and fun lovers from around the world, are close by. The sub-tropical climate allows year-round recreation, and there are first-rate athletic facilities available on campus. In addition to the many cultural activities in the area, including events at the new Adrienne Arsht Center for the Performing Arts downtown, there is an active theater program at the University Ring Theater and an outstanding series of musical events each year at Gusman Concert Hall.

For More Information

To learn more about the faculty and/or program and application requirements: **www.math.miami.edu/graduate**

Apply: **www.miami.edu/gradapply**

General information on graduate studies at the University of Miami: **www.miami.edu/grad**

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University of Miami

Graduate education is fundamental to the mission of the University of Miami.

The reputation of a research university depends upon the quality of faculty and the

strengths of the mentoring of graduate students. Join us as we move forward in the creation of new knowledge that addresses the complex issues facing our world today.

The Faculty and their Research

HAMED AMINI, Assistant Professor, PhD École Normale Supérieure, Paris, 2011. Probability, Mathematical Finance, Discrete Mathematics.

DREW ARMSTRONG, Associate Professor, PhD, Cornell, 2006. Algebra, Combinatorics, Geometry, Foundations, History of Mathematics.

KENNETH BAKER, Assistant Professor, PhD University of Texas 2004. Topology.

BRUNO BENEDETTI, Assistant Professor, Ph.D., Technical University of Berlin, 2010. Discrete Geometry.

MORGAN BROWN, Assistant Professor, Ph.D., Berkeley, 2012. Algebraic Geometry.

MINGLIANG CAI, Associate Professor, Ph.D., University of Pennsylvania, 1991. Differential Geometry.

STEPHEN CANTRELL, Professor, Ph.D., Utah, 1981. Partial Differential Equations, Nonlinear Analysis and Mathematical Ecology.

ROBERT CHEN, Professor, Ph.D., Minnesota, 1974. Probability, Statistics, Computer Science.

BRIAN COOMES, Associate Professor, Ph.D., University of Nebraska, 1988. Differential Equations, Dynamical Systems.

CHRIS COSNER, Professor, Ph.D., Berkeley, 1977. Differential Equations, Nonlinear Analysis, Mathematical Ecology.

BRUNO DE OLIVEIRA, Associate Professor, Ph.D., Columbia, 1997. Algebraic Complex Geometry.

ALEXANDER L. DVORSKY, Associate Professor, Ph.D., Berkeley, 1996. Lie Algebras, Representation Theory.

GREGORY GALLOWAY, Professor, Ph.D., University of California, San Diego, 1976. Differential Geometry, Relativity.

MICHELLE WACHS GALLOWAY, Professor, Ph.D., University of California, San Diego, 1977. Algebraic Combinatorics.

ILIE GRIGORESCU, Associate Professor, Ph.D. Courant Institute at New York University, 1997. Stochastic Processes.

VALERIE HOWER, Assistant Professor, Ph.D. University of Georgia, 2007.Genomics, Discrete Mathematical Biology, Probabilistic and Topological Methods in Data Analysis.

SHULIM KALIMAN, Professor, Ph.D., Krzizhnoysky National Laboratory, 1979. Algebraic Geometry, Complex Analytic Geometry.

LEV KAPITANSKI, Professor, Ph.D. (1981) & Dr. Sci. (1991) Steklov Institute of Mathematics, Nonlinear Evolution Equations.

LUDMIL KATZARKOV, Professor, Ph.D. University of Pennsylvania, 1995. Algebraic/Symplectic Geometry, Mathematics of String Theory.

PENGZI MIAO, Associate Professor, Ph.D., Stanford, 2003. Differential Geometry, General Relativity

MARVIN MIELKE, Professor, Ph.D., Indiana, 1965. Algebraic and Categorical Topology.

VICTOR PESTIEN, Associate Professor, Ph.D., Berkeley, 1980. Probability, Optimization.

SUBRAMANIAN RAMAKRISHNAN, Associate Professor, Ph.D., Indian Statistical Institute, 1980. Probability, Statistics.

SHIGUI RUAN, Professor, Ph.D., University of Alberta, Canada, 1992. Applied Mathematics, Mathematical Biology.

NIKOLAI SAVELIEV, Associate Professor, Ph.D., University of Oklahoma, 1995. Algebraic Topology & Geometry.

ALAN ZAME, Professor, Ph.D., Berkeley, 1965. Analysis, Probability.

Distinguished Scholars

PHILLIP GRIFFITHS, Distinguished Scholar, Member of the National Academy of Sciences, Ph.D., Princeton, 1962. Algebraic and Complex Geometry, Hodge Theory.

MAXIME KONTSEVITCH, Distinguished Professor, 1998 Fields Medal, 2008 Crafoord Prize, Ph.D., University of Bonn, 1992. Mathematical Phyiscs, NonCommulative Algebra, Algebraic Geometry.

RICHARD P. STANLEY, Distinguished Scholar Member of the National Academy of Sciences, Ph.D. Harvard, 1971. Algebraic Combinatorics.