WHY STUDY AT VANDERBILT?

• The most recent (2010) National Research Council (NRC) report on U.S. math graduate programs places our department in the top group of graduate programs surveyed.
• The Department of Mathematics has a distinguished international faculty that includes a Fields Medalist and International Congress of Mathematicians invited speakers.
• The department has a variety of research groups: universal algebra, group theory, geometry/topology, approximation theory, number theory, noncommutative geometry, operator algebras, mathematical biology, partial differential equations, and graph theory.
• The stimulating research environment is supported by an ongoing program that attracts visiting scholars from institutions around the world and hosts several major conferences a year.
• The Department of Mathematics has approximately 50 research faculty and 40 resident graduate students. It is large enough to support a wide range of courses, but small enough for students to receive individual attention from faculty members.
• Graduate students are given one to two years of training to teach at the college level. After that period, they generally serve as TAs and eventually instructors in calculus classes. This opportunity provides valuable experience in communication, even for students who do not pursue careers in academia.
• Our graduate students are very successful at securing jobs.
• Nashville offers the amenities of a large city and the friendliness of a small town.

PROGRAMS

The Department of Mathematics offers doctor of philosophy and master of arts degrees in mathematics. Most of our students pursue the Ph.D.

The Ph.D. program requires 72 credit hours of course work, including dissertation research. Doctoral candidates complete a core curriculum in algebra, analysis, and topology. After passing preliminary exams in two of these three areas, students study in their area of concentration. For Ph.D. candidacy, students pass a qualifying examination, involving either an oral examination in their specialty or an expository paper. Once students have qualified for Ph.D. candidacy, they concentrate on dissertation research.

FINANCIAL SUPPORT

Most Ph.D. students in mathematics receive a Graduate Teaching Assistantship and support is usually provided for a five-year period.

Teaching assistants receive a University Tuition Scholarship (a service-free award that pays all tuition costs), student health insurance coverage, and a twelve-month stipend. For 2018/19 the stipend is $26,000. Some highly qualified applicants are awarded University Graduate Fellowships that provide an additional stipend of $5,000. Also, the Graduate School awards several Provost’s Graduate Fellowships that provide an additional $5,000 to highly qualified students from underrepresented groups.

Students who do not have financial aid pay tuition of $1,967 per credit hour.

GRADUATE STUDENT TEACHING

First-year graduate students participate in a weekly teaching seminar and conduct tutored study halls for calculus.

Second- and third-year students serve as TAs. Responsibilities include attending class meetings, conducting a weekly recitation section, holding office hours, and grading papers.

Fourth- and fifth-year students with good teaching evaluations and strong recommendations from their faculty mentors are assigned to teach a first-year calculus course.

FACILITIES

Vanderbilt University's libraries are among the top research libraries in the nation, providing nearly five million items and access to millions more resources through nine campus libraries that share an online portal. The mathematics collection is housed in the Science and Engineering Library, conveniently located in the math building. This collection is excellent, both in books and access to electronic resources, including e-journals and online databases such as MathSciNet and Web of Science. Items not available locally can be borrowed through an interlibrary loan, which is free of charge to graduate students.

Computational resources available to graduate students include access to the university's large cluster and desktop computers equipped with computer algebra software and LaTeX. Graduate students may use these facilities freely for research, writing, and teaching.

Furthermore, the graduate students' office suite is a recently renovated state-of-the-art facility.

HOUSING

Ample private housing is available within walking distance of the campus. The Office of Housing and Residential Education maintains an off-campus housing referral service. Visit their webpage at offcampushousing.vanderbilt.edu

VANDERBILT AND NASHVILLE

Vanderbilt is a private university, founded in 1873. The university includes four undergraduate schools, the Graduate School, and eight professional schools.

Located approximately two miles from downtown Nashville, Vanderbilt is situated on 330 acres and is designated as an arboretum. A diverse student body of about 6,800 undergraduates and 5,700 graduate and professional students is taught by more than 4,200 full-time faculty members affiliated with Vanderbilt University and Vanderbilt University Medical Center.

The metropolitan Nashville area, in the heart of Middle Tennessee, has a population of over one million. The city, a center for music of all kinds, has many other cultural and entertainment opportunities, including theatre, film, museums, symphony, recreation areas, and two major league sports teams.

INFORMATION AND APPLICATIONS

• Visit as.vanderbilt.edu/math for information about the Department of Mathematics (especially the “Graduate” link). Questions specifically concerning the mathematics graduate program should be emailed to mathgrad@vanderbilt.edu.
• Visit gradschool.vanderbilt.edu for general information about graduate studies at Vanderbilt. Online applications are sent directly to the Graduate School and can be accessed from this site. The Graduate School Application fee is $95.00. Application questions not addressed at the Graduate School website should be emailed to apply@vanderbilt.edu.
• Applications and all supporting materials are due on January 1, 2019. Late applications may be considered if positions are still available. We require both the General and Mathematics Subject GREs (Graduate Record Examinations). The Subject Test result is especially important in evaluating applications. Applicants whose native language is not English and who have not been educated at an English-speaking university must also take the TOEFL (Test of English as a Foreign Language).
THE FACULTY AND THEIR RESEARCH

Algebra and Logic

Ralph McKenzie, Ph.D. (University of Colorado)
Algebra and Logic
Michael L. Mihalik, Ph.D. (SUNY, Binghamton)
Geometric Group Theory
Alexander Yu. Olshanskiy, Ph.D. (Moscow State University, Russia)
Group Theory
Denis Osin, Ph.D. (Moscow State University, Russia)
Geometric Group Theory
John G. Ratcliffe, Ph.D. (University of Michigan)
Geometric Group Theory
Mark V. Sapir, Ph.D. (Moscow Pedagogical Institute, Russia)
Group Theory, Algorithmic Problems in Algebra
Steven G. Simpson, Ph.D. (Massachusetts Institute of Technology)
Mathematical Logic, Foundations of Mathematics
Steven T. Tschantz, Ph.D. (University of California, Berkeley)
Logic, Universal Algebra, Computer Algebra
Constantine Tsinakis, Ph.D. (University of California, Berkeley)
Ordered Algebraic Structures, Logic

Analysis and Applied Analysis

John F. Ahner, Ph.D. (University of Delaware)
Akram Aldroubi, Ph.D. (Carnegie Mellon University)
Harmonic Analysis, Sampling Theory, Mathematical Biology
Dietmar Bisch, Ph.D. (University of California, Los Angeles)
Operator Algebras
Philip S. Crooke III, Ph.D. (Cornell University)
Biomathematics
Emmanuele DiBenedetto, Ph.D. (University of Texas, Austin)
Partial Differential Equations, Mathematical Biology
Marcelo Disconzi, Ph.D. (SUNY, Stony Brook)
Partial Differential Equations, Mathematical Physics
Douglas P. Hardin, Ph.D. (Georgia Institute of Technology)
Harmonic Analysis, Potential Theory, Fractal Geometry
Vaughan Jones, Ph.D. (University of Geneva, Switzerland)
Von Neumann Algebras
Jesse Peterson, Ph.D. (University of California, Los Angeles)
Operator Algebras, Ergodic Theory
Alexander M. Powell, Ph.D. (University of Maryland)
Applied and Computational Harmonic Analysis, Mathematical Signal Processing
Edward B. Saff, Ph.D. (University of Maryland)
Complex Analysis, Potential Theory, Approximation Theory
Gieri Simonett, Ph.D. (University of Zürich, Switzerland)
Partial Differential Equations, Free Boundary Problems
Jared Speck, Ph.D. (Rutgers University)
Partial Differential Equations, Mathematical Physics, Relativity
Glenn F. Webb, Ph.D. (Emory University)
Mathematical Biology, Population Dynamics, Models of Tumor Growth, Differential Equations
Dechao Zheng, Ph.D. (SUNY, Stony Brook)
Functional Analysis, Operator Theory, Complex Analysis, Harmonic Analysis

Computational Mathematics

Akram Aldroubi, Ph.D. (Carnegie Mellon University)
Wavelet Theory, Image and Signal Processing
Douglas P. Hardin, Ph.D. (Georgia Institute of Technology)
Inverse Problems, Wavelet Theory, Fractal Geometry
Mike Neamtu, Ph.D. (University of Twente, Netherlands)
Approximation Theory, Spline Theory, Numerical Analysis, Financial Mathematics
Alexander M. Powell, Ph.D. (University of Maryland)
Applied and Computational Harmonic Analysis, Mathematical Signal Processing
Edward B. Saff, Ph.D. (University of Maryland)
Approximation Theory, Complex Analysis, Potential Theory
Larry L. Schumaker, Ph.D. (Stanford University)
Approximation Theory, Spline Theory, Computer-Aided Design

Geometry and Topology

Anna Marie Bohmann, Ph.D. (University of Chicago)
Algebraic Topology, Homotopy Theory
Marcelo Disconzi, Ph.D. (SUNY, Stony Brook)
Geometric Analysis
Spencer D. Dowdall, Ph.D. (University of Chicago)
Geometric Topology and Geometric Group Theory
C. Bruce Hughes, Ph.D. (University of Kentucky)
Geometric and Algebraic Topology, Manifold Theory, Controlled Topology, Stratified Spaces
Gennadi Kasparov, Ph.D. (Moscow State University, Russia)
K-Theory, Noncommutative Geometry, Operator Algebras
Michael L. Mihalik, Ph.D. (SUNY, Binghamton)
Algebraic Topology, Low Dimensional Topology, Geometric Group Theory
Alexander Yu. Olshanskiy, Ph.D. (Moscow State University, Russia)
Geometric Group Theory
Denis Osin, Ph.D. (Moscow State University, Russia)
Geometric Group Theory
Rares Rasdeaconu, Ph.D. (SUNY, Stony Brook)
Differential and Symplectic Geometry
John G. Ratcliffe, Ph.D. (University of Michigan)
Low Dimensional Topology, Hyperbolic Geometry
Mark V. Sapir, Ph.D. (University of Michigan)
Low Dimensional Topology, Hyperbolic Geometry
Algebraic Group Theory, Algorithmic Problems in Algebra
Jared Speck, Ph.D. (Moscow State Pedagogical Institute, Russia)
Geometric Group Theory, Algorithmic Problems in Algebra
Ioana Suvaina, Ph.D. (SUNY, Stony Brook)
Differential Geometry, Kähler Geometry, Seiberg-Witten Theory and Symplectic Topology
Steven T. Tschantz, Ph.D. (University of California, Berkeley)
Group Theory, Hyperbolic Geometry
Graph Theory and Combinatorics
Paul H. Edelman, Ph.D. (Massachusetts Institute of Technology)
Algebraic Combinatorics, Geometric Combinatorics, Cooperative Games
Jakayla Robbins, Ph.D. (University of Kentucky)
Matroid Representation Theory, Oriented Matroids, Combinational Optimization
Mark N. Ellingham, Ph.D. (University of Waterloo, Canada)
Graph Theory, Paths and Cycles, Topological Graph Theory
Larry Rolan, Ph.D. (Emory University)
Theory of Partitions
Stephen G. Simpson, Ph.D. (Massachusetts Institute of Technology)
Infinitary Combinatorics, Ramsey Theory

Mathematical Biology
Philip Crooke III, Ph.D. (Cornell University)
Mathematical Biology
Emmanuele DiBenedetto, Ph.D. (University of Texas, Austin)
Mathematical Biology
Glenn F. Webb, Ph.D. (Emory University)
Mathematical Biology, Population Dynamics, Models of Tumor Growth
William Holmes, Ph.D. (Indiana University, Bloomington)
Mathematical Biology

Number Theory and Algebraic Geometry
Rares Rasdeaconu, Ph.D. (SUNY, Stony Brook)
Algebraic Geometry
Larry Rolan, Ph.D. (Emory University)
Number Theory, Modular Forms, Arithmetic Geometry

2018/2019 POSTDOCTORAL FELLOWS
Scott Atkinson, Ph.D. (University of Virginia)
Operator Algebras, Functional Analysis
Alexander Cameron, Ph.D. (University of Illinois, Chicago)
Combinatorics, Graph Theory
Jonathan Campbell, Ph.D. (Stanford University)
Algebraic Topology
Cheng Chu, Ph.D. (Washington University, St. Louis)
Operator Theory, Complex Analysis
Cain Edie-Michell, Ph.D. (Australian National University)
Operator Theory
Matthew Haulmark, Ph.D. (University of Wisconsin, Milwaukee)
Geometric Group Theory
Woden Kusner, Ph.D. (University of Pittsburgh)
Discrete Geometry, Geometric Optimization
Chenyun Luo, Ph.D. (Johns Hopkins University)
Partial Differential Equations
Giusy Mazzone, Ph.D. (University of Pittsburgh)
Partial Differential Equations, Fluid Mechanics
Robert McRae, Ph.D. (Rutgers University)
Vertex Operator Algebras
Andrew Moorhead, Ph.D. (University of Colorado, Boulder)
Algebraic Systems, Algebra and Logic
Brent Nelson, Ph.D. (University of California, Berkeley)
Operator Theory
Adam Prenosil, Ph.D. (Charles University, Prague)
Operator Algebras, Functional Analysis
Grace Work, Ph.D. (University of Illinois Urbana-Champaign)
Hyperbolic Geometry, Dynamics
Yixiang Wu, Ph.D. (University of Louisiana, Lafayette)
Partial Differential Equations, Mathematical Biology