MATHEMATICS

Melissa Schori, Regents Math 307
507-786-3113
schori1@stolaf.edu
wp.stolaf.edu/math

(Mathematics, Statistics, and Computer Science)

Mathematics, the study of patterns and order, is a creative art, a language, and a science. The practice of mathematics combines the aesthetic appeal of creating patterns of ideas with the utilitarian appeal of applications of these same ideas. Long seen as the language of physical science, mathematics is also used increasingly to model phenomena in the biological and social sciences. Mathematical literacy is indispensable in today's society. As members of the Department of Mathematics, Statistics, and Computer Science (MSCS), mathematics faculty strive to help students understand natural connections among these related but distinct disciplines.

Mathematics at St. Olaf is interesting, exciting, accessible, and an appropriate area of study for all students. Each year, seven to ten percent of graduating seniors complete mathematics majors. The department offers courses representing various mathematical perspectives: theoretical and applied, discrete and continuous, algebraic and geometric, and more. Our faculty also teach courses in statistics, computer science, and mathematics education.

Majors in statistics and data science and computer science are also available. Courses in these areas are taught by faculty from the Department of Mathematics, Statistics, and Computer Science. For more information on these, consult the separate listings under Statistics and Data Science and Computer Science.

Overview of the Major

Students arrange a major in mathematics by developing an Individualized Mathematics Proposal (IMaP). An IMaP outlines a complete, coherent program of study consistent with the goals of the individual student. The courses included in a student's IMaP are determined after consultation with an MSCS faculty member and approved by the department chair. About ten courses are normally required.

Intended Learning Outcomes for the Major

Special Programs and Opportunities

Mathematical experiences inside and outside the classroom are important parts of St. Olaf mathematics. Following are some of the many possibilities. For more information consult the mathematics website or a mathematics faculty member.

- Research: An invigorating way to explore mathematics; research opportunities exist both on and off campus.
- Experiential learning: Internships, independent studies, and various courses (including MSCS 390 Mathematics Practicum) allow students to apply mathematical knowledge beyond the classroom.
- Study abroad: The IMaP's flexibility allows study abroad programs to fit into a student's mathematics major. Students interested in a program focused on upper-level mathematics should consider the Budapest Semesters in Mathematics (BSM). Also, Math 239 Number Theory, is taught in Budapest with a St. Olaf Mathematics Professor. Students interested in the learning and teaching of secondary mathematics may consider Budapest Semesters in Mathematics Education (BSME).
- Problem solving and competitions: The department organizes problem-solving activities and sponsors student participation in regional and national competitions.
- Student organizations: The department has an active student Math Club and student representation of the national organization Pi Mu Epsilon.

Distinction

See Academic Honors

Distinction in mathematics is awarded to graduating seniors for distinguished work that goes beyond the minimum requirements for the major. Information is available in the MSCS department and on the mathematics website.

Recommendations for Graduate Study

Students planning graduate work in the mathematical sciences should pursue both depth and breadth in their majors. A broad range of courses will help students prepare for the Graduate Record Exam subject test in mathematics. Fifty percent of the GRE subject test covers single and multivariable calculus, and differential equations; 25 percent covers material from linear algebra, abstract algebra, and elementary number theory; 25 percent covers more advanced topics: real analysis, topology, combinatorics, complex analysis, probability, statistics, etc. Taking many level III courses will help students prepare for graduate study. Real Analysis II, Abstract Algebra II, Topology, Combinatorics, and Complex Analysis are especially recommended for students going into "pure" mathematics; Differential Equations II, Complex Analysis, Real Analysis II, and Applied Mathematics seminars are especially recommended for students going into applied mathematics. Research experiences (on or off campus) and independent studies will also help students assess and explore their interest in further mathematical study. Students considering graduate school should consult early with a mathematics faculty member about planning an appropriate IMaP.

Requirements

Requirements for the Major

Students arrange a major in mathematics by developing an Individualized Mathematics Proposal (IMaP). An IMaP outlines a complete, coherent program of study consistent with the goals of the individual student. The courses included in a student's IMaP are determined after consultation with an MSCS faculty member and approved by the department chair.

A path through the major as described by a student's IMaP normally includes:

Code	Title	Credits
Calculus (two semesters)		2.00
Linear algebra (one semester)		1.00
At least seven intermediate or advanced mathematics courses:		
Select two of the following transition courses:		2.00

MATH 242	Modern Computational Mathematics	
MATH 244	Real Analysis I	
MATH 252	Abstract Algebra I	
Select an intermediate course from at least three of the following different mathematical perspectives:		3.00
Computation/modeling		
Continuous/analytic		
Discrete/combinatorial		
Axiomatic/algebraic		
Select at least two level III courses, at least one of which must be part of a designated level II-level III sequence		2.00
Total Credits		**10**

An IMaP may include up to two related courses from statistics or computer science; a current listing of such courses is available on the mathematics web page. A student may also find a course outside of MSCS that contributes significantly to a mathematical path of study and may petition to have the course included in his or her IMaP.

The mathematics web page offers lists of courses that satisfy each perspective, lists of sequences, and other useful information. Students are encouraged to consult early with a mathematics faculty member about planning an appropriate IMaP.

**By completing this major, the student also satisfies the OLE Core Writing in the Major requirement.*

Recommendations for Mathematics Grades 5-12 Teaching Licensure

Mathematics majors who intend to teach grades 5-12 mathematics must meet all of the normal requirements for the major while including specific courses required for State of Minnesota licensure. Their IMaPs must include:

Code	Title	Credits
Basic requirements for all majors		
MATH 126	Calculus II	
MATH 220	Elementary Linear Algebra	
MATH 244	Real Analysis I	
MATH 252	Abstract Algebra I	
MATH 262	Probability Theory	
MATH 356	Geometry	
SDS 172	Statistics 1	
Several Education courses [1]		

1

As listed in the Education description

Students should consult the mathematics licensure advisor for advice on planning mathematics and education course sequences.

Courses

MATH 117: *Gateways to Mathematics*
This course explores the nature of mathematics and its role in contemporary society. The content and format of the course vary depending on the instructor's interests. In particular, the course may focus on one or two mathematical topics in depth or survey a wider range of topics. Recent topics have included mathematics of voting, probability, game theory, finance, and connections between mathematics and the arts. Offered periodically.
Prerequisites: high school algebra and geometry.

MATH 119: *Introduction to Calculus*
This course combines a full semester of differential calculus with reviews of algebra and pre-calculus topics for students who did not complete a pre-calculus course in high school, or are otherwise not prepared to enroll in MATH 120. Review of algebraic techniques and the language of functions are integrated with topics from the calculus of functions of a single real variable, including trigonometric, exponential, and logarithmic functions. Topics are explored graphically, symbolically, and numerically. Class meets four times per week, including one laboratory meeting. Credit may be earned for either MATH 119 or MATH 120, but not both. Offered in the fall semester.
Prerequisite: mathematics placement recommendation.

MATH 120: *Calculus I*
This course introduces differential and integral calculus of functions of a single real variable, including trigonometric, exponential, and logarithmic functions. Derivatives, integrals, and differential equations are explored graphically, symbolically, and numerically. Applications of these topics are emphasized throughout the course. Credit may be earned for either MATH 119 or MATH 120, but not both. Offered each semester and during January term.
Prerequisite: mathematics placement recommendation.

MATH 126: *Calculus II*
This course covers methods and applications of integration, geometric and Taylor series, and introduces partial derivatives and double integrals. Credit may be earned for either MATH 126 or MATH 128, but not both. Offered each semester.
Prerequisite: MATH 119 or MATH 120 or equivalent, or mathematics placement recommendation.

MATH 128: *Honors Calculus II*
This course covers the material in MATH 126 in greater depth and breadth. Credit may be earned for either MATH 126 or MATH 128, but not both. Offered annually in the fall semester.
Prerequisite: 4 or 5 on AP Calculus AB exam or permission of the Mathematics Placement Director.

MATH 200: *Topics in Mathematics (0.25)*
Students explore special topics in mathematics. Topics may vary from year to year. Offered periodically.
Prerequisite: permission of instructor.

MATH 220: *Elementary Linear Algebra*
This course beautifully illustrates the nature of mathematics as a blend of technique, theory, abstraction, and applications. The important problem of solving systems of linear equations leads to the study of matrix algebra, determinants, vector spaces, bases and dimension, linear transformations, and eigenvalues. Offered each semester and during January term. Also counts toward business and management studies concentration.
Prerequisite: MATH 119, MATH 120 or CSCI 221.

MATH 226: *Multivariable Calculus*
This course extends important ideas of single-variable calculus (derivatives, integrals, graphs, approximation, optimization, fundamental theorems, etc.) to higher-dimensional settings. These extensions make calculus tools far more powerful in modeling the (multi-dimensional) real world. Topics include partial derivatives, multiple integrals, transformations, Jacobians, line and surface integrals, and the fundamental theorems of Green, Stokes, and Gauss. Offered each semester.
Prerequisites: MATH 126 or MATH 128, and MATH 220.

MATH 230: *Differential Equations I*
This course introduces differential equations and analytical, numerical, and graphical techniques for the analysis of their solutions. First- and second-order differential equations and linear systems are studied. Applications are selected from areas such as biology, chemistry, economics, ecology, and physics. Laplace transforms or nonlinear systems may be covered as time permits. Students use computers extensively to calculate and visualize results. Offered each semester. Also counts toward neuroscience, business and management studies, and mathematical biology concentrations.
Prerequisite: MATH 126 or MATH 128 and MATH 220.

MATH 234: *Discrete Mathematical Reasoning*
In this course students use topics in discrete mathematics to engage in problem solving, abstract mathematical thinking, and logical reasoning. Students practice proof writing in multiple contexts, including propositional and predicate logic; the foundations of set theory, functions, and relations; elementary number theory; arithmetic and geometric progressions; permutations, combinations, and basic probability; and graph theory. Offered each semester. Also counts toward computer science major and business and management studies concentrations. May not be taken after MATH 244 or MATH 252, except with instructor permission.
Prerequisite: CSCI 221, MATH 126 or MATH 128.

MATH 235: *Discrete Mathematical Reasoning in Budapest (study abroad)*
In this course students use topics in discrete mathematics to engage in problem solving, abstract mathematical thinking, and proof writing. Topics include logic, set theory, functions, and relations; elementary number theory; arithmetic and geometric progressions and graph theory. Also counts toward the computer science major and business and management studies concentrations.
Prerequisite: MATH 126 or MATH 128 or CSCI 221.

MATH 236: *Mathematics of Biology*
This course introduces students to the essential modeling techniques of formulation, implementation, validation, and analysis. Students engage in these areas by combining experiment, mathematical theory, statistics, and computation to better understand a wide variety of biological systems. Offered annually in the spring semester. Also counts toward neuroscience, public health studies, and mathematical biology concentrations.
Prerequisite: MATH 126 or MATH 128, and familiarity with R programming (BIO 150 or SDS 172 or CSCI 125 or equivalent programming experience).

MATH 239: *Number Theory - Budapest (study abroad)*
This course introduces the study of patterns and relationships satisfied by natural numbers. Topics include divisibility, modular arithmetic, prime numbers, congruences, primitive roots, and quadratic residues. The course is offered in Budapest, Hungary, a world center for mathematics research. The course includes several hours of Hungarian language instruction and lectures by Hungarian mathematicians and scholars. Offered annually during January Term.
Prerequisite: MATH 220 or permission of instructor.

MATH 242: *Modern Computational Mathematics*
Modern mathematics is characterized by the interaction of theoretical and computational techniques. In this course, students study topics from pure and applied mathematics with the aid of computation. Symbolic, graphical, and numerical computational techniques are introduced. Students develop computational skills sufficient to investigate mathematical questions independently. No previous programming experience is required. Offered annually. Also counts toward mathematical biology concentration.
Prerequisite: MATH 220.

MATH 244: *Real Analysis I*
Students encounter the theory of calculus and develop tools for communicating mathematical ideas with technical accuracy and sophistication. The goal is mastery of the concepts (e.g., limit, continuity, derivatives, and integrals) necessary to verify such important results as the Fundamental Theorem of Calculus, the Mean Value Theorem, and the Bolzano-Weierstrass Theorem. Emphasis is on theory and on developing the ability to write proofs. Offered each semester. Also counts toward computer science major.
Prerequisite: MATH 126 or MATH 128, and MATH 220. Permission of instructor required for first-year students.

MATH 252: *Abstract Algebra I*
Algebra is concerned with sets of objects and operations that satisfy a few basic properties. Using the properties we study axiomatic systems such as groups, rings, and fields, covering topics such as homomorphisms, cosets, quotient structures, polynomial rings, and finite fields. Emphasis is on theory and on developing the ability to write proofs. Offered each semester. Also counts toward computer science major.
Prerequisite: MATH 220. Permission of instructor required for first-year students.

MATH 257: *Noether and Kovalevskaya: Algebra/Analysis/Access in Europe (abroad)*
Students study the mathematics of Emmy Noether and Sonya Kovalevskaya, visit cultural and historical sites in Germany and Sweden associated with the women, and learn about the societal contexts in which they lived and worked. Noether was fundamental in the development of algebra, in particular the theory of how rings decompose into ideals. Kovalevskaya extended work of Cauchy to prove the main theorem for analytic solutions to partial differential equations. Offered alternate years during January Term. Apply through Smith Center for Global Engagement.
Prerequisites: MATH 252, or MATH 230 and MATH 244.

MATH 262: *Probability Theory*
This course introduces the mathematics of randomness. Topics include probabilities on discrete and continuous sample spaces, conditional probability and Bayes' Theorem, random variables, expectation and variance, distributions (including binomial, Poisson, geometric, normal, exponential, and gamma) and the Central Limit Theorem. Students use computers to explore these topics. Offered each semester. Also counts toward business and management studies concentration.
Prerequisite: MATH 126 or MATH 128.

MATH 266: *Operations Research*
recommendation. Students are introduced to modeling and mathematical optimization techniques (e.g., linear programming, network flows, discrete optimization, constrained and unconstrained nonlinear programming, queuing theory). Students use computers to explore these topics, but prior computer experience is not assumed. Offered periodically. Also counts toward business and management studies concentration.
Prerequisites: MATH 126 or MATH 128, and MATH 220; MATH 226 and/or MATH 262 recommended.

MATH 267: *Mathematics of Finance*
This course investigates the mathematically sophisticated financial models used by large institutional investors to properly price exotic financial instruments and to perform analytic portfolio management. Offered periodically.
Prerequisites: MATH 126 or MATH 128, and MATH 220; MATH 262 is recommended.

MATH 282: *Topics in Mathematics*
Students work intensively on a special topic in mathematics or its applications. Topics vary from year to year. May be repeated if topic is different. Offered periodically.

MATH 294: *Academic Internship*

MATH 298: *Independent Study*

MATH 320: *Advanced Linear Algebra*
This course continues the study of vector spaces and linear transformations. Topics include: abstract vector spaces; linear transformations, including matrix representations, decompositions such as Jordan Canonical Form and Singular Value Decomposition; characteristic polynomials and the Cayley-Hamilton Theorem; invariant subspaces; and inner product spaces, including orthogonal bases, minimization problems, and the Spectral Theorem. Applications may include graph and network theory, principal component analysis and generalized eigenspaces, iterative solutions of large systems, and representation theory.
Prerequisites: MATH 220, and MATH 244 or MATH 252.

MATH 330: *Differential Equations II*
This course covers partial differential equations from an applied perspective and emphasizes simple models involving phenomena such as wave motion and diffusion. Topics and techniques such as separation of variables, boundary value problems, Fourier series, and orthogonal functions are developed carefully. Mathematical computing is used freely. Offered annually. Also counts toward neuroscience and mathematical biology concentrations.
Prerequisite: MATH 226 and MATH 230.

MATH 332: *Graph Theory*
This course covers fundamental concepts of graph theory and their applications, including topics such as simple graphs and directed graphs, degree sequences, Eulerian and Hamiltonian graphs, trees and spanning trees, matchings, networks and feasible flows, connectivity, and graph colorings. Other applications and algorithms may include greedy algorithms for minimum spanning trees, Prüfer codes, Hall's Theorem, the Gale-Shapley Algorithm, Menger's Theorem, the Max-Cut/Min-Flow Theorem, the Committee Scheduling Problem, Kuratowski's Theorem, and Ramsey's Theorem.
Prerequisites: MATH 244 or MATH 252.

MATH 340: *Complex Analysis*
Complex analysis treats the calculus of complex-valued functions of a complex variable. Familiar words and ideas from ordinary calculus (limit, derivative, integral, maximum and minimum, infinite series) reappear in the complex setting. Topics include complex mappings, derivatives, and integrals; applications focus especially on the physical sciences. Offered annually.
Prerequisite: MATH 220, and MATH 226 or MATH 244.

MATH 344: *Real Analysis II*
The main topics of this course are measure theory on the real line, the Lebesgue integral and its relation to the Riemann integral, and convergence theorems for the Lebesgue integral. Applications to probability and harmonic analysis may be included. Offered alternate years.
Prerequisite: MATH 244.

MATH 348: *Topology*
This course is an introduction to topological spaces and their structures mainly from the point-set perspective. Standard topics include separation axioms, compactness, and connectedness. Other topics from geometric and algebraic viewpoints may be included. Offered alternate years.
Prerequisite: MATH 244.

MATH 352: *Abstract Algebra II*
This course is a continuation of the study of the theory of groups, rings, and fields. Topics include group actions, Sylow theory, and Galois theory. Other topics may include representation theory, module theory, and others. Offered alternate years.
Prerequisite: MATH 252.

MATH 356: *Geometry*
Properties of axiomatic systems are illustrated with finite geometries and applied in a synthetic examination of Euclid's original postulates, well-known Euclidean theorems, and non-Euclidean geometries. Euclidean, similarity, and affine transformations are studied analytically. These transformations are generalized to obtain results in hyperbolic geometry and used to generate fractals in an exploration of fractal geometry. Dynamic geometry software and hands-on labs are used to explore both the transformations and properties of these geometries. Offered annually during January Term.
Prerequisite: MATH 220, and MATH 244 or MATH 252.

MATH 364: *Combinatorics*
This course covers basic enumeration, including generating functions, recursion, and the inclusion-exclusion principle. Basic combinatorial objects such as set partitions, permutations, integer partitions, and posets are discussed. Making conjectures and proving theorems combinatorially are emphasized. Students also explore topics in graph theory, matrix theory, and representation theory. Offered alternate years.
Prerequisite: MATH 252; some previous exposure to counting methods (e.g., counting permutations and combinations) is helpful but not required.

MATH 382: *Topics in Mathematics*
Students work intensively on a special topic in mathematics. Topics vary from year to year. May be repeated if topic is different. Offered annually.

MATH 384: *Topics in Applied Mathematics*
Students work intensively on a special topic in applied mathematics. Topics vary from year to year. May be repeated if topic is different. Offered periodically.

MATH 394: *Academic Internship*

MATH 396: *Directed Undergraduate Research*
This course provides a comprehensive research opportunity, including an introduction to relevant background material, technical instruction, identification of a meaningful project, and data collection. The topic is determined by the faculty member in charge of the course and may relate to their research interests. Offered periodically. May be offered as a 1.00 credit course or .50 credit course.
Prerequisite: determined by individual instructor.

MATH 398: *Independent Research*

Related Courses

CSCI 333: *Theory of Computation*
Students learn about formal languages, automata, and other topics concerned with the theoretical basis and limitations of computation. The course covers automata theory including regular languages and context-free languages, computability theory, complexity theory including classes P and NP, and cryptographic algorithms. Offered periodically. Also counts toward neuroscience and applied linguistics concentrations.
Prerequisite: a proof writing course (such as MATH 234, MATH 244, or MATH 252) and computer science major or permission of instructor.

MSCS 150: *Statistical and Data Investigations*
Students learn basic techniques to analyze, manage, visualize, and model data. Instruction focuses on the analysis of "real," salient datasets in a computer-equipped classroom. In small groups students discuss, analyze, and solve case study-based problems. Class sessions include the Inquiry-Based Learning technique, which engages students in frequent presentations of their solutions to the class. Students use the R statistical software to perform statistical computing and data visualizations. Offered annually.

SDS 164: *Data Science 1*
Data is the currency of the modern world. At the intersection between statistics and computer science, data science is about gleaning information and making decisions from data. Using data from a variety of contexts and disciplines, students learn to summarize and extract insight from data, create compelling data visualizations, wrangle data, practice literate programming, and explore ethical issues in data science. No prior experience with programming is expected. This course cannot be taken after SDS 264.

SDS 172: *Statistics 1*
A first course in statistical methods, this course addresses study design and its implications as well as exploratory and inferential techniques for analyzing and modeling data. Topics include exploratory graphics, descriptive techniques, randomization tests, statistical designs, hypothesis testing, confidence intervals, and simple/multiple regression. Offered each semester. Enrollment limited for seniors. STAT 110, SDS 172, and ECON 260 all provide an introduction to statistics and students should not take more than one; they all can serve as a prerequisite for further courses. Also counts toward environmental studies major (natural science and social science emphases), kinesiology major, and business and management studies, mathematical biology, and public health studies concentrations.

SDS 264: *Data Science 2*
After mastering the foundations of data science - especially data wrangling and visualization - in SDS 164, data science students are ready to explore impactful applications and deeper fundamentals. Programming fundamentals may include iteration, functions, conditions, data types, SQL, regular expressions, version control, and simulation - all in the context of real data. New applications may include text as data, geospatial mapping, networks, and web scraping to produce dynamic graphics - presented with attention to data ethics and reproducible research. Offered annually.
Prerequisite: SDS 164: Data Science 1.

SDS 272: *Statistics 2*
This course takes a case-study approach to the fitting and assessment of statistical models with application to real data. Specific topics include multiple regression, model diagnostics, logistic regression, experimental design and ANOVA. The approach focuses on problem-solving tools, interpretation, model assumptions underlying analysis methods, and written statistical reports. Offered each semester. Also counts toward environmental studies major (natural science and social science emphases) and business and management studies, mathematical biology, neuroscience, and public health studies concentrations.
Prerequisite: SDS 172, ECON 260 or equivalent preparation (STAT 110 and SDS 164) or (AP Stat and SDS 164), or permission of instructor.

SDS 316: *Advanced Statistical Modeling*
This course extends and generalizes methods introduced in STAT 272 by introducing generalized linear models (GLMs) and correlated data methods. GLMs cover logistic and Poisson regression, and more. Correlated data methods include longitudinal data analysis and multi level models. Applications are drawn from across the disciplines. Offered annually. Also counts toward neuroscience concentration.
Prerequisite: SDS 272.

SDS 322: *Statistical Theory*
This course is an investigation of modern statistical theory along with classical mathematical statistics topics such as properties of estimators, likelihood ratio tests, and distribution theory. Additional topics include Bayesian analysis, bootstrapping, Markov Chain Monte Carlo, and other computationally intensive methods. Offered alternate years. Also counts toward neuroscience concentration.
Prerequisite: SDS 272 and MATH 262.

SDS 341: *Algorithms for Decision Making*
This course introduces students to the subject of machine learning. The primary focus is the development and application of powerful machine learning algorithms applied to complex, real-world data. Topics covered include linear regression, nearest neighbor models, k-means clustering, shrinkage methods, decision trees and forests, boosting, bagging, support vector machines, and hierarchical clustering. Applications are taken from a wide variety of disciplines, including biology, economics, public policy, public health, and sports. Offered on a regular basis. Counts toward computer science and mathematics majors and statistics and data science concentration.
Prerequisite: SDS 164 or SDS 264 or permission of the instructor.

SDS 389: *Statistics and Data Science Research Methods (0.50)*
Students focus on writing scientific papers, preparing scientific posters, and giving presentations in the context of a specific, year-long, interdisciplinary research project. In addition, this weekly seminar series builds collaborative research skills such as working in teams, performing reviews of math, statistics, and computer science literature, consulting effectively, and communicating proficiently. Exposure to post-graduate opportunities in statistics and data science disciplines is also provided. Open to students accepted into the Center for Interdisciplinary Research.

Faculty

Program Director, 2024-2025
Matthew Wright
Associate Professor of Mathematics, Statistics, and Computer Science
applied and computational topology

Curtis Balz
Visiting Instructor of Mathematics, Statistics, and Computer Science

Adam H. Berliner
Professor of Mathematics, Statistics, and Computer Science
combinatorial matrix theory; linear algebra; graph theory

Maria Davis
Visiting Assistant Professor of Mathematics, Statistics, and Computer Science

Jill Dietz
Professor of Mathematics, Statistics, and Computer Science
algebraic topology; group theory

Erin Ellefsen
Assistant Professor of Mathematics, Statistics, and Computer Science

Francesca Gandini
Assistant Professor of Mathematics, Statistics, and Computer Science

Tina C. Garrett
Professor of Mathematics, Statistics, and Computer Science; Associate Dean of Natural Sciences and Mathematics
enumerative and algebraic combinatorics; partition theory; q-series

Alexander Hanhart
Visiting Assistant Professor of Mathematics, Statistics, and Computer Science

Anna Kraut
Assistant Professor of Mathematics, Statistics, and Computer Science

Ryota Matsuura
Professor of Mathematics, Statistics, and Computer Science
mathematics education; algebraic number theory

Paula Mercurio
Visiting Assistant Professor of Mathematics, Statistics, and Computer Science

Daniel Stoertz
Visiting Assistant Professor of Mathematics, Statistics, and Computer Science

David P. Walmsley
Assistant Professor of Mathematics, Statistics, and Computer Science