

MARGARET A. READDY
CURRICULUM VITAE

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U.S. Citizen
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RESEARCH INTERESTS

Interaction of Combinatorics with Algebra, Topology, Discrete Geometry and Number Theory.

EDUCATION

1986 RUTGERS COLLEGE, RUTGERS UNIVERSITY, B.A., Mathematics
1989 UNIVERSITY OF MICHIGAN, M.S., Mathematics
1993 MICHIGAN STATE UNIVERSITY, Ph.D., Mathematics
Thesis: "Extremal problems for the Möbius function", PhD Advisor Bruce Sagan
1993 – 1995 LACIM, UNIVERSITÉ DU QUÉBEC À MONTRÉAL, CANADA, Postdoctoral Fellow

PROFESSIONAL CAREER

2011 – Present UNIVERSITY OF KENTUCKY, Professor of Mathematics
2003 – 2011 UNIVERSITY OF KENTUCKY, Associate Professor of Mathematics
2000 – 2003 UNIVERSITY OF KENTUCKY, Assistant Professor of Mathematics
1999 – 2000 STOCKHOLM UNIVERSITY, Stockholm, SWEDEN, Visiting Professor
1998 – 1999 INSTITUTE FOR ADVANCED STUDY, Princeton, NJ, Visitor
1995 – 1998 CORNELL UNIVERSITY, Visiting Assistant Professor
1986 – 1987 BLUE CROSS & BLUE SHIELD OF NJ, INC., Newark, NJ, Research Analyst

VISITING POSITIONS

2022 INSTITUTE FOR ADVANCED STUDY, Princeton, NJ, June-July 2022
2021 PRINCETON UNIVERSITY, Faculty Visitor, July 2021
2021 INSTITUTE FOR ADVANCED STUDY, Princeton, NJ, June-July 2021*
2020 INSTITUTE FOR ADVANCED STUDY, Princeton, NJ, June-July 2020*
2019 INSTITUTE FOR ADVANCED STUDY, Princeton, NJ, June-July 2019
2018 INSTITUTE FOR ADVANCED STUDY, Princeton, NJ, June-July 2018
2014 – 2015 PRINCETON UNIVERSITY, Visiting Professor and Research Scholar
2010 – 2011 INSTITUTE FOR ADVANCED STUDY, Princeton, NJ, Member
2006 – 2007 MASSACHUSETTS INSTITUTE OF TECHNOLOGY, Visiting Scholar in Applied Math
2005 INSTITUT MITTAG-LEFFLER, March 2005
2004 INSTITUTE FOR ADVANCED STUDY/PARK CITY MATH INSTITUTE, July 2004
2002 UNIVERSITY OF MINNESOTA, July-Aug. 2002
2002 INSTITUTE FOR ADVANCED STUDY, June 2002
2001 MASSACHUSETTS INSTITUTE OF TECHNOLOGY, July-Aug. 2001
1998 MASSACHUSETTS INSTITUTE OF TECHNOLOGY, September 1998
1997 CHALMERS TECHNICAL UNIVERSITY, Göteborg, SWEDEN, May-June 1997
1996 – 1997 MSRI, October 1996 and January 1997

*All visitors cancelled due to pandemic.

AWARD

2010 – 2011 Institute for Advanced Study, Princeton, NJ
Awarded Membership in the School of Mathematics

POSTDOCTORAL STUDENTS SUPERVISED

2014 – 2017 Rafael S. González D'León, Asst. Professor, Loyola University, Chicago**
2005 – 2006 Guoce Xin, Professor, Capital Normal University, Beijing CHINA**
2003 – 2004 Sergey Kitaev, Reader University of Strathclyde, Glasgow UK**

***Current appointment*

DOCTORAL STUDENTS

2020 – 2023 Benjamin Reese, PhD 2023, "Geometry of Pipe Dream Complexes"
2019 – 2023 William Gustafson, PhD 2023, "Lattice Minors and Eulerian Posets"
2012 – 2016 Yue Cai, PhD 2016, "New Perspectives of Quantum Analogues"
2006 – 2009 Patricia Muldoon Brown, PhD 2009, "Rees Products of Posets and Inequalities"

2001 – Present Served on 20 PhD Committees (Chaired 4)

MASTERS STUDENTS

2003 – Present Served on 29 Masters Exam Committees (Chaired 12)

RESEARCH UNDERGRADUATES

2015 – 2017 Likith Govindaiah, Princeton University
2015 – 2017 Peter Park, Princeton University
2014 – 2015 Albert Zhou, Princeton University
Summer 2000 Debbie Grier, Cornell University
Summer 2000 Geir Helleloid, University of Wisconsin
Summer 2000 Michael Levin, Harvard University
Summer 2000 Adnan Rubai, Binghamton University
Summer 1997 Dan Johnston, Washington University in St. Louis
Summer 1997 Mohan Rajagopalan, Oberlin College

FUNDING

2024 – 2025	SIMONS FELLOWS IN MATHEMATICS “Investigations in Combinatorics”, submitted
2023 – 2026	NATIONAL SCIENCE FOUNDATION GRANT DMS-2247382 “Combinatorics of Sharing Theorems, Stratifications, Bruhat Theory and Shimura Varieties”
2016 – 2022	SIMONS FOUNDATION COLLABORATION GRANT Award #422467 “Investigations in Combinatorial Mathematics”
2011 – 2016	SIMONS FOUNDATION COLLABORATION GRANT Award #206001 “Flag Enumeration in Algebra and Geometry”
Spring 2011	UNIVERSITY OF KENTUCKY TENURED FACULTY FELLOWSHIP Awarded by the Dean of Arts & Sciences
2010–2011	NATIONAL SCIENCE FOUNDATION GRANT DMS-1024407 “Combinatorics 2010: Advances, Trends & Speculations (CATS 2010 Workshop)”
2009–2010	NATIONAL SCIENCE FOUNDATION GRANT DMS-0913073 “Graduate Student Combinatorics Conference at the University of Kentucky”
2009	DE SHAW & CO. Unrestricted support to fund 2009 GSCC Conference
2009	UNIVERSITY OF KENTUCKY, DEPARTMENT OF MATHEMATICS “Graduate Student Combinatorics Conference at the University of Kentucky”
2009	UNIVERSITY OF KENTUCKY VICE PRESIDENT’S OFFICE FOR RESEARCH “Graduate Student Combinatorics Conference at the University of Kentucky”
2009	UNIVERSITY OF KENTUCKY COLLEGE OF ARTS & SCIENCES “Graduate Student Combinatorics Conference at the University of Kentucky”
2009	INSTITUTE FOR MATHEMATICS AND ITS APPLICATIONS (IMA) Title: “Graduate Student Combinatorics Conference at the University of Kentucky”
2005	INSTITUT MITTAG-LEFFLER. Program in Algebraic Combinatorics, March 2005, Travel grant.
2004	INSTITUTE FOR ADVANCED STUDY/PARK CITY MATHEMATICS INSTITUTE. Research Program in Geometric Combinatorics, July 2004, Travel grant.

FUNDING (CONT'D)

- Summer 2004 UNIVERSITY OF KENTUCKY RESEARCH ACTIVITY AWARD MINI GRANT.
Awarded by the Dean of College of Arts & Sciences.
- Summer 2002 UNIVERSITY OF KENTUCKY SPECIAL FACULTY RESEARCH FELLOWSHIP.
Awarded by the Office of the Executive Vice President for Research.
- Summer 2001 UNIVERSITY OF KENTUCKY FACULTY RESEARCH FELLOWSHIP.
Awarded by the Office of the Executive Vice President for Research
- Summer 1997 ADLERBERTSKA RESEARCH FUND
A collaborators from abroad grant to visit Chalmers Technical University.

OUTREACH FUNDING

- 2022 – 2023 MAA NEFF OUTREACH GRANT
“Kentucky Math Carnival”

CONFERENCE ORGANIZING

- 2022 – Present KOI Combinatorics Lectures, Founder and Organizer
www.ms.uky.edu/~readdy/KOI
 Fall 2023: The Ohio State University
 Spring 2023: University of Kentucky
- 2020 – 2021 Program Committee for FPSAC 2021 Bar-Ilan University, Ramat Gan, ISRAEL
 2017 – 2022 Institute for Advanced Study Women and Mathematics (WAM) Program
 Academic Program Manager (2017–2020); Member of WAM Committee (2020 – 2022)
 See www.ias.edu/math/wam
 WAM 2022: “Mathematics of Machine Learning”
 WAM 2021: “Representation Theory: Categories & Combinatorics”
 WAM 2020: “Mathematics of Machine Learning”
 WAM 2019: “Geometric Measure Theory”
 WAM 2018: “Mathematics of Modern Cryptography”
- 2016 – 2017 Invited senior research guide for the BIRS Workshop “Algebraic Combinatorixx2”
www.birs.ca/events/2017/5-day-workshops/17w5012
- 2012 – 2013 Co-organizer of the Combinatorics portion of 2013 WAM Program, IAS, Princeton
 2011 Invited senior faculty mentor for the BIRS Workshop “Algebraic Combinatorixx”
 Collaborative research and mentoring workshop for female combinatorialists
www.birs.ca/events/2011/5-day-workshops/11w5025
- 2009 – 2010 Co-organizer of the special session “Advances in Algebraic & Geometric
 Combinatorics”, AMS Southeastern Sectional Meeting, Lexington, KY,
 March 27–28, 2010. See www.math.uky.edu/~readdy/AMS.
- 2009 – 2010 Co-organizer of the workshop “Combinatorics 2010: Advances, Trends
 and Speculations (CATS 2010)”, University of Kentucky, March 26, 2010
 See www.math.uky.edu/~readdy/CATS2010 .
- 2007 – 2009 Faculty advisor for “5th Graduate Student Combinatorics Conference”
 University of Kentucky, March 27–29, 2009
- 2007 Co-organizer of the special session “Combinatorial Enumeration, Optimiza-
 tion, Geometry, and Statistics”, AMS Southeastern Sectional Meeting,
 Murfreesboro, TN, November 3–4, 2007
- 2006 Co-organizer of the special session “Algebraic and Analytic Combinatorics”,
 AMS Eastern Sectional Meeting, Storrs, CT, October 28–29, 2006
- 2003 – 2004 Program Committee for the FPSAC’04, Vancouver, CANADA

SEMINAR ORGANIZER

- Spring 2023 Discrete CATS Seminar
 Fall 2017 – Fall 2018 Interdisciplinary seminar in CATS = Combinatorics, Algebra, Topology
 and Statistics; formerly the UK Algebraic Combinatorics Seminar
 Spring 2001 – 2014 See www.math.uky.edu/~readdy/Seminar .
- Spring 2015 Princeton University Combinatorics Seminar
 See www.math.uky.edu/~readdy/Seminar/Princeton.
- 2008 – 2014 WILDCATS Seminar
 (WILDCATS = Work, Interactions and Leading Developments in CATS)
 Colloquium version of the Discrete CATS Seminar

INVITED ADDRESSES

- “To be announced”
 2024 Invited speaker for ICECA 2024, University of Hafai, ISRAEL (virtual)
- “Combinatorial identities of Morel and extensions”
 2019 Invited speaker for Triangle Lectures in Combinatorics, Raleigh NC
- “Geometric proofs of some combinatorial identities of Morel”
 2019 Plenary speaker for 2019 EUROCOMB Conference, Bratislava SLOVAKIA
- “Polytopes and beyond”
 2016 Plenary speaker for the 2016 International FPSAC Conference, Vancouver CANADA
 Invited speaker, Lake Michigan Workshop on Combinatorics and Graph Theory,
 Purdue University (3 one-hour talks)
- 2016 I. “Quantum Combinatorics”
 2016 II. “Coalgebraic Combinatorics”
 2016 III. “Whitney Stratifications and Combinatorics”
- “ q -Combinatorics: A new view”
 2015 Invited speaker for Discrete Math Day in the Northeast, Worcester Polytechnic Institute
- “Euler enumeration”
 2014 Invited speaker for the 28th Midwest Conference on Combinatorics, Cryptography
 and Computing (MCCCC), University of Nevada, Las Vegas.
- “Polytopes”
 2013 Invited Lecturer for 2013 Program for Women and Mathematics (4 lectures)
 Sponsored by the Institute for Advanced Study and Princeton University
- “The characteristic polynomial”
 2012 D. W. Weeks Lecture, MIT
- “Eulerian binomial and Sheffer posets”
 2005 Keynote speaker, University of Minnesota Graduate Student Combinatorics Conference
 Invited series of lectures, Budapest, HUNGARY
- 1998 I: “Introduction to flag vectors and their linear span,” Eötvös University
 1998 II: “Zonotopes and hyperplane arrangements,” Hungarian Academy of Sciences

COLLOQUIA, SEMINAR AND OTHER INVITED TALKS

- “Eulerian posets and beyond”
 2023 Cornell Discrete Geometry and Combinatorics Seminar
- “Polytopes and Whitney-stratified spaces”
 2021 AWM Lecture Series, Kutztown University (virtual)
- “Juggling and q -analogues”
 2021 AWM Lecture Series, Mount St. Mary’s University (virtual)
- “Geometric proofs of some combinatorial identities of Morel”
 2019 Invited speaker, AWM Research Symposium 2019, Rice University
 2018 Princeton University Discrete Math Seminar

COLLOQUIA, SEMINAR AND OTHER INVITED TALKS (CONT'D)

- 2017 "Polytopal combinatorics and generalizations"
BIRS Workshop Algebraic Combinatorixx2
- 2017 "q-Stirling identities revisited"
2017 Midwest Combinatorics Conference, University of Minnesota
- 2017 AMS sectional meeting, Bloomington, IN
- 2016 "New perspectives on q -analogue theory"
University of Maine Number Theory Seminar
- 2015 "q-Stirling numbers: A new view"
AMS sectional meeting, New Brunswick, NJ
- 2015 "q-Combinatorics: A new view"
Rutgers Experimental Mathematics Seminar
- 2015 "Euler enumeration"
Rutgers Discrete Math Seminar
- 2015 "Negative q -Stirling numbers"
Conference in honor of Michelle Wachs, University of Miami.
- 2014 "Negative q -analogues"
University of Pennsylvania CAGE (Combinatorics & Algebraic Geometry) Seminar
- 2014 "Euler flag enumeration of Whitney stratified spaces"
Bruce Sagan 60th Birthday Conference, University of Florida
- 2013 Binghamton University Combinatorics & Topology Seminars
- 2013 The 11th Nordic Combinatorial Conference (NORCOM), Stockholm, SWEDEN
- 2013 The University of Minnesota Combinatorics Seminar
- 2012 University of North Carolina at Charlotte Colloquium
- 2012 Joint Mathematics Meeting, Boston, MA
- 2011 Cornell University Discrete Geometry and Combinatorics Seminar
- 2013 "Counting, q -counting and negative q -counting"
University of North Carolina at Charlotte Colloquium
- 2013 "Manifold arrangements"
AMS sectional meeting, Oxford, MS
- 2011 "The cd -index of stratified spaces"
Polyhedra in Algebraic Combinatorics Invited Paper Session, 2011 MAA Mathfest
- 2011 Algebraic Combinatorixx Workshop, Banff International Research Station, CANADA
- 2010 "Balanced and Bruhat graphs"
Rutgers Experimental Mathematics Seminar
- 2010 Quasisymmetric Functions Workshop, Banff International Research Station, CANADA
- 2010 "Toric arrangements"
Institute for Advanced Study, Geometry and Cell Complexes Seminar, Princeton, NJ
- 2010 "Flag enumeration in geometry and algebra"
University of Pennsylvania CAGE (Combinatorics & Algebraic Geometry) Seminar
- 2009 "The cd -index of balanced and Bruhat graphs"
University of Washington Combinatorics Seminar
- 2008 "The complete cd -index of graphs"
Conference in Honor of Louis Billera's 65th Birthday, Cornell University, Ithaca, NY
- 2008 "Toric hyperplane arrangements"
University of North Carolina at Charlotte Colloquium

COLLOQUIA, SEMINAR AND OTHER INVITED TALKS (CONT'D)

- 2008 "The Rees product of the cubical lattice with the chain"
AMS sectional meeting, Bloomington, IN
- 2007 "Affine and toric hyperplane arrangements"
AMS sectional meeting, Murfreesboro, TN
- 2007 AMS sectional meeting, Chicago, IL
- 2007 Cornell University Discrete Geometry and Combinatorics Seminar
- 2007 Northeastern University Geometry-Algebra-Singularities-Combinatorics Seminar
- 2007 MIT Combinatorics Seminar
- "Eulerian binomial and Sheffer posets"
2006 2006 International FPSAC Conference, San Diego, CA
- 2006 Indiana University Combinatorics Seminar
- 2005 Mittag-Leffler Institute, SWEDEN
- 2003 "The Möbius function of partitions with restricted block sizes"
AMS sectional meeting, Binghamton, NY
- 2003 "The pre-WDVV ring of physics and its topology"
International Conference on Number Theory and Combinatorics in Physics, Gainesville, FL
- 2002 AMS sectional meeting, Orlando, FL
- 2002 "Two rings in string theory"
University of Minnesota Combinatorics Seminar
- 2002 "Homology of Newtonian coalgebras"
AMS sectional meeting, Montréal, CANADA
- 2002 "An application of combinatorial commutative algebra to string theory"
Washington University in St. Louis Combinatorics Seminar
- 2002 Binghamton University Combinatorics Seminar
- 2001 MIT Combinatorics Seminar
- 2002 "A probabilistic approach to the descent statistic"
AMS National Meeting, San Diego, CA
- 2001 "The Manin ring in string theory"
AMS sectional meeting, Lawrence, KS
- 2000 "The Yuri Manin ring and its \mathcal{B}_n analogue"
LaCIM 2000 Conference, Montréal, CANADA
- 2000 "A new face ring for mixed simplicial and cubical complexes"
AMS National meeting, Washington, DC
- 2000 "Systems of parameters for cubical complexes"
University of California at Davis Colloquium
- 2000 University of Pittsburgh Colloquium
- 2000 College of William and Mary Colloquium
- 1999 Royal Institute of Technology and Stockholm University Combinatorics Seminar, SWEDEN
- 1999 AMS southeastern sectional meeting, Gainesville, FL
- 1999 "Mixed volumes and valuations: A tale of two topics"
Stockholm University, Stockholm, SWEDEN
- 1999 Uppsala University, Uppsala, SWEDEN
- 1999 Princeton University Combinatorics and Representation Theory Seminar
- 1998 University of Kansas Colloquium
- 1998 University of Pennsylvania Combinatorics Seminar

COLLOQUIA, SEMINAR AND OTHER INVITED TALKS (CONT'D)

- 1999 "Recent developments in polytopal theory"
Temple University Colloquium
- 1998 "Valuations and complex hyperplane arrangements"
MIT Combinatorics Seminar
- 1998 "Mixed volumes and slices of the cube"
University of Florida Colloquium
- 1997 Georgia Institute of Technology Combinatorics Seminar
- 1997 Cornell University Combinatorics and Algebraic Geometry Seminar
- 1997 "Convex geometry and combinatorics"
Chalmers Technical University Colloquium, Göteborg, SWEDEN
- 1997 "Hyperplane arrangements and the cd -index"
MSRI Geometric Combinatorics Workshop
- 1997 "Binomial posets"
Cornell University Working Seminar in Algebraic Combinatorics
- 1996 "Coproducts, the cd -index and zonotopes"
University of Waterloo Tutte Colloquium, CANADA
- 1996 "Coproducts and the cd -index"
8th Int'l FPSAC Conference, University of Minnesota
- 1995 "Sheffer posets and r -signed permutations"
Cornell University Combinatorics and Algebraic Geometry Seminar
- 1995 "The r -cubical lattice and a generalization of the cd -index"
7th Int'l FPSAC Conference, Paris-Marne-la-Vallée, FRANCE
- 1995 MIT Combinatorics Seminar
- 1995 Cornell University Combinatorics and Algebraic Geometry Seminar
- 1994 "The r -cubical lattice and a generalization of the cd -index"
Royal Institute of Technology Combinatorics Seminar; Stockholm, SWEDEN
- 1994 "Juggling and applications to q -analogues"
Università di Milano, Milano, ITALY
- 1994 6th International FPSAC Conference, DIMACS/Rutgers University
- 1994 LACIM; UQAM Combinatorics Seminar
- 1994 University of Minnesota Combinatorics Seminar
- 1993 "A new proof of the interval of ranks case for the Boolean algebra"
Joint Meeting of AMS and Sociedad Matematica Mexicana; Mérida, MEXICO
- 1993 "Extremal problems for the Möbius function"
LACIM; UQAM Combinatorics Seminar (in French)
- 1993 MIT Combinatorics Seminar
- 1993 University of Michigan Combinatorics Seminar
- 1993 Joint Mathematics Meeting of the AMS and MAA; San Antonio, TX
- 1992 4th Int'l FPSAC Conference, UQAM, Montréal

TALKS GIVEN TO STUDENTS

- 2018 “Some open questions in geometric combinatorics”
Talk given to incoming graduate students
- 2017 “Classical q -analogues revisited”
Talk given to incoming graduate students
- 2016 “Some open questions in geometric combinatorics”
Talk given to incoming graduate students
- 2015 “The stable marriage theorem or how to win a Nobel in Economics”
Henry Clay High School Math Club
- 2010 “The stable marriage theorem”
University of Kentucky Math Club
- 2009 “Manifold combinatorics”
Talk given to incoming graduate students
- 2009 “An introduction and brief history of the cd -index”
Talk given to University of Washington undergraduate and graduate students
- 2008 “An introduction to mixed volumes”
University of Kentucky Graduate Student Colloquium
- 2008 “Spherical and toric combinatorics”
Talk given to incoming graduate students
- 2004 “Polytopes: techniques and open questions”
Talk given to incoming graduate students
- 2004 “Face vectors of polytopes and shellability”
Guest Lecturer for University of Kentucky’s Graduate Course in Toric Varieties
- 2004 “Polytopal inequalities and the Stanley-Reisner ring”
Guest Lecturer for University of Kentucky’s Graduate Course in Toric Varieties
- 2002 “Algebraic combinatorics”
Talk given to incoming graduate students
- 2001 “The marriage theorem”
University of Kentucky Math Club
- 2000 “The stable marriage theorem”
Guest Lecture at Viktor Rydbergs Gymnasium, Stockholm, SWEDEN
- 1999 “History of the cd -index”
Guest Lecturer for Stockholm University’s Graduate Course in Polytopal Theory
- 1997 “The marriage theorem”
Cornell Undergraduate Math Club
- 1997 “Hilbert’s third problem: scissors congruence”
Cornell Undergraduate Math Club
- 1996 “Euler’s formula and the cd -index”
Cornell University REU Smorgasbord Seminar

UNDERGRADUATE RESEARCH

	Princeton University
2015 – 2016	Directed research with Likith Govindaiah and Peter Park (both Class of 2017)
2014 – 2015	Directed the Senior Thesis of Albert Zhou (Class of 2015)
	Cornell Research Experiences for Undergraduates (REU) Program
Summer 2000	Faculty Advisor for four students.
Summer 1997	Faculty Advisor for two students.

STUDENT'S RESEARCH AWARD

2002	Morgan Prize for Undergraduate Research
	This is the most prestigious prize for Undergraduate Research awarded in the United States with two prizes (the prize itself and honorable mention) awarded each year. My student Michael Levin won Honorable Mention.

TEACHING SUMMARY

UNIVERSITY OF KENTUCKY:

Undergraduate Courses:

Analytic Geometry and Trigonometry, Math 110: Fall 2004

Contemporary Mathematics, Math 111: Fall 2021 (virtual)

Calculus I, Math 113: Fall 2003, Spring 2005, Fall 2011, Fall 2016, Spring 2019, Fall 2022

Calculus I, Math 123: Fall 2007

Calculus II, Math 114: Spring 2006, Fall 2008, Spring 2009

Calculus III, Math 213: Fall 2000, Spring 2002, Spring 2008, Fall 2009, Fall 2018, Fall 2019

Differential Equations, Math 214: Spring 2012, Spring 2014, Fall 2015, Spring 2016

Spring 2017

Introductory Probability, Math 320: Spring 2010

Matrix Algebra, Math 322: Spring 2002, Fall 2003, Fall 2004, Fall 2007, Fall 2008,

Fall 2012, Spring 2013, Fall 2013, Fall 2017, Spring 2018, Spring 2019, Fall 2019,

Fall 2020 (virtual), Spring 2023

Applicable Algebra, Math 340: Spring 2003

Math Composition and Communication Math 391:

Fall 2020 (Mathematical Games & Magic) (virtual)

Fall 2018 (Recreational Math & Magic)

Fall 2023 (Math & Magic)

Combinatorics & Graph Theory, Math 415: Fall 2013, Fall 2017, Fall 2021

Introduction to Complex Variables, Math 433: Fall 2002, Fall 2015, Fall 2016, Spring 2022

Graduate Courses:

Polytopes: A Modern Viewpoint, Math 714: Spring 2020 (hybrid)

Symmetric Functions and Stratifications, Math 714: Spring 2016

The Möbius Function, Math 714: Fall 2012

Polytopes: The ABCDs of Enumerating Flags, Math 714: Fall 2011

TEACHING SUMMARY (CONT'D)

Graduate Courses: (cont'd)

Enumerative Combinatorics, Math 614: Spring 2003, Spring 2004, Spring 2006,
Spring 2009, Spring 2010, Spring 2012, Spring 2013, Spring 2014, Spring 2017,
Spring 2018, Spring 2023
Combinatorics of Coxeter Groups, Math 714: Fall 2009
Recent Trends in Polytopes, Math 714: Spring 2008
Topics in Geometric Combinatorics, Math 714: Spring 2005
Representation Theory and the Symmetric Group, Math 715: Fall 2002
Hyperplane Arrangements, Math 715: Fall 2001
Polytopes and Commutative Algebra, Math 715: Spring 2001
Linear Algebra, Math 565: Fall 2000

CORNELL UNIVERSITY:

Honors Calculus I, Math 121: Fall 1995
Honors Calculus II, Math 122: Spring 1996
Calculus for Engineers, Math 191: Fall 1997
Calculus for Engineers, Math 193: Spring 1996, Fall 1996
Introductory Linear Algebra, Math 231: Spring 1997
Applicable Algebra, Math 336: Spring 1998
Introduction to Algebra, Math 431: Fall 1997, Spring 1997
Graduate Independent Reading and Research, Math 790: Spring 1998

MICHIGAN STATE UNIVERSITY:

College Algebra, Math 108: Winter 1990
Discrete Mathematics for Business Majors, Math 110: Fall 1991
College Algebra and Trigonometry, Math 111: T.A. Fall 1989
Introductory Calculus, Math 120: Fall 1992
Introductory Calculus, Math 126: Winter 1993
Vector Calculus, Math 214: Winter 1991, Spring 1990; T.A. Spring 1992, Winter 1992, Fall 1990
Multivariable Calculus, Math 215: Spring 1991

COMMITTEE WORK

National:

2020 – 2022 Member of the IAS Women and Mathematics (WAM) Committee
 2018 – 2022 Chair of Selection Committee for IAS Ambassador Program
 2017 – 2020 Institute for Advanced Study, Princeton, WAM Academic Program Manager
 2012 – 2013 AMS-NSF Mathematical Congress of the Americas Travel Grant Committee

University-wide:

2017 – 2018 External Review Committee for Statistics Department
 2012 – 2014 College Advisory Committee in the Mathematical and Natural Sciences
 2011 – 2012 University-wide Graduate Council Committee on Fellowships & Traineeships

Department:

2018 – 2019 Hiring Committee for tenure-track faculty
 2016 – 2017 Hiring Committee for tenure-track faculty
 2013 – 2014 Long-term Hiring Planning Committee
 2013 – 2014 Hiring Committee for tenure-track faculty
 2006 – 2007 Hiring Committee for tenure-track faculty (while on sabbatical)

2011 – 2012 Postdoctoral Scholar Hiring Committee

2015 – 2016 Graduate Recruitment Committee
 2012 – 2013 Graduate Recruitment Committee
 2004 – 2005 Graduate Recruiting Committee
 2002 – 2004 Graduate Committee

2017 – 2018 Chair, Discrete Math Prelim Committee
 Fall 2009 Chair, Discrete Math Prelim Exam Committee
 2003 – 2004 Chair, Discrete Math Prelim Exam Committee
 2003 – Present Member, Discrete Math Prelim Exam Committee

2005 – 2006 Executive Committee
 2003 – 2004 Executive Committee, Member At-Large
 2001 – 2002 Executive Committee

2003 – 2004 Promotion and Tenure Committee

2017 – 2018 Salary Committee
 2001 – 2002 Chair, Salary Committee
 2000 – 2002 Salary Committee

2019 – 2021 Course Czar for Math 322 Matrix Algebra
 2017 – 2018 Course Czar for Math 322 Matrix Algebra
 2015 – 2016 Course Czar for Math 214 Differential Equations
 2012 – 2014 Course Czar for Math 322 Matrix Algebra
 2008 – 2009 Course Czar for Calculus II

COMMITTEE WORK (CONT'D)

2016 – 2018	Department Newsletter Committee
2012 – 2013	Organizer of 2013 Hayden-Howard Lecture; Speaker Michelle Wachs
2000 – 2001	Co-organizer of the First Hayden-Howard Lecture; Speaker Richard Stanley
2000 – 2001	Homepage Committee
2001	Served on 2 Foreign Language Exam Committees
2001 – Present	Served on 20 PhD Committees (Chaired 4)
2003 – Present	Served on 29 Masters Exam Committees (Chaired 12)

OUTREACH

2023 – Present	Presenter, UK Curiosity Fair
2022 – 2023	Organizer of the Kentucky Mathematics Carnival sites.google.com/view/thekentuckymathcarnival
2021 – 2022	Organizer of Mathematics Carnival, Princeton NJ Public Library
2020 – 2021	Organizer of e-Mathematics Carnival, Princeton NJ Public Library
2017 – 2022	Institute for Advanced Study, Princeton, Member of the WAM Committee
2018 – 2019	Organizer of Mathematics Carnival, Princeton NJ Public Library
2017 – 2020	Institute for Advanced Study, Princeton, WAM Academic Program Manager
2018	“Codes and Secrets”, outreach at Littlebrook Elementary School
2017 – Present	Co-organizer of Julia Robinson Mathematics Festival 2017 & 2018 event held on-campus; 2019 event held at downtown Central Library
2017 – 2018	Co-editor AMS Notices issue on Women’s History Month
2015 – Present	Professor Assistant for the new Henry Clay High School Math Club
Fall 2015	Cassidy Elementary School Discovery Day, Lexington KY
Spring 2015	Littlebrook Elementary School Science Expo, Princeton NJ
2008 – 2018	Founder and Organizer of the Math Movie of the Month www.math.uky.edu/~movies

ADVISING AND MENTORING

2020 – Present	Faculty Mentor for the Math Alliance
2019 – Present	Faculty Advisor for UK Sumo Wrestler Club
2017 – 2022	Mentor for Assistant Professor Fernando Shao
2016 – Present	Undergraduate Advisor for Math Majors
2015 – 2020	Faculty Mentor for NSF DUE-1356253 Graduate Scholars in Math Fellows Program
2013 – 2014	Mentor for Assistant Professor Russell Carden
2013 – 2014	Mentor for Assistant Professor Bert Guillou
2012 – 2014	Undergraduate Advisor for Math Majors
2012 – Present	Mentor for WitsOn (Women in Technology Sharing Online)
2006 – Present	Volunteer Mentor for the AWM Mentor Network
2004 – Present	Academic Advisor for 2 to 5 graduate students per year
2002 – 2004	EDGE (Enhancing Diversity in Graduate Education) Mentor

REFEREING

GRANTS:

NSA

NSERC Discovery Institutes

NSF CAREER Grant Panel

NSF Combinatorics Grant Panel

Review Advisory Panel for the Simons Foundation.

Reviewer for the NSF International Research Experience for Students Program.

Arms-length reviewer for SHARCNET Research Grant. (SHARCNET, based in Ontario, Canada, is a high-performance computing consortium)

Peer Reviewer for The National Academies Collaboration in Basic Science and Engineering (COBASE) program

EXTERNAL REVIEWER:

Promotion cases at Marshall (2022), Indiana (2019), CUNY (2019), DePaul (2016)

MATHSCINET:

Reviewer for MathSciNet

JOURNALS:

*Advanced Studies in Contemporary Mathematics**Algebraic Combinatorics**American Mathematical Monthly**Annals of Combinatorics**Australasian Journal of Combinatorics**Bulletin of IMVI**Combinatorial Theory**Combinatorica**Discrete and Computational Geometry**Discrete Mathematics**Discrete Mathematics and Theoretical Computer Science**Electronic Journal of Combinatorics**European Journal of Combinatorics**International Mathematics Research Notices**Information Processing Letters**Journal of Algebraic Combinatorics**Journal of Combinatorics**Journal of Combinatorial Theory, Series A**Journal of Integer Sequences**Journal of the London Mathematical Society**Proceedings of the AMS**The Ramanujan Journal**SIAM Journal on Discrete Mathematics*

CONFERENCES:

Referee for the FPSAC 2021 Conference, Bar-Ilan University, Ramat Gan, ISRAEL

Referee for the FPSAC'15 Conference, Daejeon, SOUTH KOREA

Referee for the FPSAC'06 Conference, San Diego

Referee for the FPSAC'04 Conference, Vancouver, CANADA

BOOKS:

Birkhäuser

CRC Press

Oxford University Press

Springer

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American Mathematical Society
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LANGUAGES

English, French and Swedish: fluent.
German and Spanish: some knowledge.

PUBLICATIONS

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OTHER PUBLICATIONS

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- [3] The IAS Women and Mathematics Program, chapter in *Count Me In: Community and Belonging in Mathematics*, D. Dumbaugh and D. Haunsperger, eds., AMS and MAA Press, with M. Huguenin, D. McDuff and K. Uhlenbeck.

SEQUENCES

Seven of my sequences appear in *The On-Line Encyclopedia of Integer Sequences*, ed. by N. J. A. Sloane.

A6873 (Alternating augmented 4-signed permutations): 1, 1, 7, 47, 497, 6241, 95767, 1704527, 34741217, 796079041, . . . ; **A7286** (Alternating augmented 3-signed permutations): 1, 1, 5, 26, 205, 1936, 22265, 297296, 4544185, 78098176, . . . ; **A7788** (Augmented André 3-signed permutations): 1, 1, 4, 19, 136, 1201, 13024, 165619, 2425216, 40132801, . . . ; **A074059** (Dimension of the cohomology ring of the moduli space of n -pointed stable curves of genus 0 satisfying the the WDVV equations of physics): 1, 2, 7, 34, 213, 1630, 14747, . . . ; **A074060** (Graded dimension of the cohomology ring of the moduli space of n -pointed stable curves of genus 0 satisfying the WDVV equations of physics): 1, 1, 1, 1, 5, 1, 1, 16, 16, 1, 1, 42, 127, 42, 1, 1, 99, 715, 715, 99, 1, 1, 219, 3292, 7723, 3292, 219, 1, . . . ; **A108917** (Number of knapsack partitions of n): 1, 1, 2, 3, 4, 6, 7, 11, 12, 17, 19, 29, 25, 41, 41, 58, 56, 84, 75, 117, 99, 149, 140, 211, 172, 259, 237, 334, 292, 434, . . . ; **A256161** (Triangle of allowable Stirling numbers of the second kind $a(n, k)$): 1, 1, 1, 1, 2, 1, 1, 3, 4, 1, 1, 4, 11, 6, 1, 1, 5, 26, 23, 9, 1, 1, 6, 57, 72, 50, 12, 1, 1, 7, 120, 201, 222, 86, 16, 1, 1, 8, 247, 522, 867, 480, 150, 20, 1, 1, 9, 502, 1291, 3123, 2307, 1080, 230, 25, 1, . . .

TRANSLATION

François Bergeron, Gilbert Labelle, and Pierre Leroux, “Combinatorial Species and Tree-like Structures,” Translated from the 1994 French original by Margaret Readdy. With a foreword by Gian-Carlo Rota. *Encyclopedia of Mathematics and its Applications*, 67, Cambridge University Press, Cambridge, 1998.