

MARGARET A. READDY  
CURRICULUM VITAE

University of Kentucky  
Department of Mathematics  
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U.S. Citizen  
Born in Elizabeth, NJ  
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<http://www.math.uky.edu/~readdy/>

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, Montréal, CANADA,  
Postdoctoral Fellow

PROFESSIONAL CAREER

2011 – Present UNIVERSITY OF KENTUCKY, Professor  
2003 – 2011 UNIVERSITY OF KENTUCKY, Associate Professor  
2000 – 2003 UNIVERSITY OF KENTUCKY, Assistant Professor  
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

2010 – 2011 INSTITUTE FOR ADVANCED STUDY, Princeton, NJ, Member and Sabbatical  
2006 – 2007 MASSACHUSETTS INSTITUTE OF TECHNOLOGY, Visiting Scholar in Applied Math, Sabbatical  
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

RESEARCH INTERESTS

Algebraic and geometric combinatorics, combinatorial topology, polytopes

## AWARD

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

## POSTDOCTORAL STUDENTS SUPERVISED

2005–2006 Guoce Xin, Brandeis University  
Associate Professor, Center for Combinatorics, Nankai University (current)

2003–2004 Sergey Kitaev, Chalmers Technical University  
Reader, Dept. Computer & Information Sciences, University of Strathclyde (current)

## DOCTORAL STUDENT

2006–2009 Patricia Muldoon Brown, PhD May 2009, University of Kentucky  
Dissertation Title: "Rees Products of Posets and Inequalities"  
Tenure-track Assistant Professor, Armstrong Atlantic State University (since 2009)

## RESEARCH UNDERGRADUATES

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

## CONFERENCE ORGANIZING

2011 Invited senior faculty mentor for the BIRS Workshop "Algebraic Combinatorixx"  
Collaborative research and mentoring workshop for female combinatorialists  
<http://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 <http://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 <http://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

## FUNDING

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.
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.

## INVITED ADDRESSES AND SEMINAR TALKS

- 2012 “Euler flag enumeration of Whitney stratified spaces”  
 Joint Mathematics Meeting, Boston, MA  
 2011 Cornell University Discrete Geometry and Combinatorics Seminar  
 2011 University of Kentucky Discrete CATS Seminar  
 “The  $cd$ -index of stratified spaces”  
 2011 Polyhedra in Algebraic Combinatorics Invited Paper Session, 2011 MAA Mathfest  
 2011 Algebraic Combinatorixx Workshop, Banff International Research Station, CANADA  
 “Balanced and Bruhat graphs”  
 2010 Rutgers Experimental Mathematics Seminar  
 2010 Quasisymmetric Functions Workshop, Banff International Research Station, CANADA  
 “Toric arrangements”  
 2010 Institute for Advanced Study, Geometry and Cell Complexes Seminar, Princeton, NJ  
 “Flag enumeration in geometry and algebra”  
 2010 University of Pennsylvania CAGE (Combinatorics & Algebraic Geometry) Seminar  
 2010 University of Kentucky Colloquium  
 “The  $cd$ -index of balanced and Bruhat graphs”  
 2009 University of Washington Combinatorics Seminar  
 2009 University of Kentucky Discrete CATS Seminar  
 “The complete  $cd$ -index of graphs”  
 2008 Conference in Honor of Louis Billera’s 65th Birthday, Cornell University, Ithaca, NY  
 “Toric hyperplane arrangements”  
 2008 University of North Carolina at Charlotte Colloquium  
 “The Rees product of the cubical lattice with the chain”  
 2008 AMS sectional meeting, Bloomington, IN  
 “Affine and toric hyperplane arrangements”  
 2007 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 University of Kentucky Combinatorics Seminar  
 2005 Keynote speaker, University of Minnesota Graduate Student Combinatorics Conference  
 2005 Mittag-Leffler Institute, SWEDEN  
 “The Möbius function of partitions with restricted block sizes”  
 2005 University of Kentucky Algebraic Combinatorics Seminar  
 “From Steinitz to Karu: The  $cd$ -index”  
 2005 University of Kentucky Algebraic Combinatorics Seminar  
 “Asymptotic results for the WDVV ring of physics”  
 2003 AMS sectional meeting, Binghamton, NY  
 2003 University of Kentucky Algebraic Combinatorics Seminar

## INVITED ADDRESSES AND SEMINAR TALKS (CONT'D)

- 2003 "The pre-WDVV ring of physics and its topology"  
 International Conference on Number Theory and Combinatorics in Physics, Gainesville, FL  
 2003 University of Kentucky Topology Seminar  
 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"  
 University of Kentucky Colloquium  
 2001 AMS sectional meeting, Lawrence, KS  
 2000 "The Stanley-Reisner ring and an application to string theory"  
 University of Kentucky Combinatorics Seminar  
 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 Kentucky 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  
 1999 "Recent developments in polytopal theory"  
 Temple University Colloquium  
 1998 "Valuations and complex hyperplane arrangements"  
 MIT Combinatorics Seminar  
 1998 Invited series of lectures, Hungarian Academy of Sciences, Budapest, HUNGARY  
 1998 I: "Introduction to flag vectors and their linear span," Eötvös University  
 1998 II: "Zonotopes and hyperplane arrangements," Hungarian Academy of Sciences  
 1998 "Mixed volumes and slices of the cube"  
 University of Florida Colloquium

## INVITED ADDRESSES AND SEMINAR TALKS (CONT'D)

- “Mixed volumes and slices of the cube”  
 1997 Georgia Institute of Technology Combinatorics Seminar  
 1997 Cornell University Combinatorics and Algebraic Geometry Seminar  
 “Convex geometry and combinatorics”  
 1997 Chalmers Technical University Colloquium, Göteborg, SWEDEN  
 “Hyperplane arrangements and the  $\mathbf{cd}$ -index”  
 1997 MSRI Geometric Combinatorics Workshop  
 “Binomial posets”  
 1997 Cornell University Working Seminar in Algebraic Combinatorics  
 “Coproducts, the  $\mathbf{cd}$ -index and zonotopes”  
 1996 University of Waterloo Tutte Colloquium, CANADA  
 “Coproducts and the  $\mathbf{cd}$ -index”  
 1996 8th Int'l FPSAC Conference, University of Minnesota  
 “Sheffer posets and  $r$ -signed permutations”  
 1995 Cornell University Combinatorics and Algebraic Geometry Seminar  
 “The  $r$ -cubical lattice and a generalization of the  $\mathbf{cd}$ -index”  
 1995 7th Int'l FPSAC Conference, Paris–Marne-la-Vallée, FRANCE  
 1995 MIT Combinatorics Seminar  
 1995 Cornell University Combinatorics and Algebraic Geometry Seminar  
 1994 Royal Institute of Technology Combinatorics Seminar; Stockholm, SWEDEN  
 “Juggling and applications to  $q$ -analogues”  
 1994 Università di Milano, Milano, ITALY  
 1994 6th Int'l FPSAC Conference, DIMACS/Rutgers University  
 1994 LACIM; UQAM Combinatorics Seminar  
 1994 University of Minnesota Combinatorics Seminar  
 “A new proof of the interval of ranks case for the Boolean algebra”  
 1993 Joint Meeting of AMS and Sociedad Matematica Mexicana; Mérida, MEXICO  
 “Extremal problems for the Möbius function”  
 1993 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

## SEMINAR ORGANIZER

- Spring 2001 – Present Discrete CATS Seminar  
 Interdisciplinary seminar in CATS = Combinatorics, Algebra, Topology  
 and Statistics; formerly the UK Algebraic Combinatorics Seminar  
 See <http://www.math.uky.edu/~readdy/Seminar>.
- 2008 – Present WILDCATS Seminar  
 (WILDCATS = Work, Interactions and Leading Developments in CATS)  
 Colloquium version of the Discrete CATS Seminar

## TALKS GIVEN TO STUDENTS

- 2010 "The stable marriage theorem"  
University of Kentucky Math Club
- 2009 "Manifold combinatorics"  
Talk given to incoming University of Kentucky 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 University of Kentucky graduate students
- 2004 "Polytopes: techniques and open questions"  
Talk given to incoming University of Kentucky 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 University of Kentucky 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

- Summer 1997 Faculty Advisor, Cornell's Research Experiences for Undergraduates (REU) Program  
Advised two students.
- Summer 2000 Advised four 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  
 Calculus I, Math 113: Fall 2003, Spring 2005, Fall 2011  
 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  
 Differential Equations, Math 214: Spring 2012  
 Introductory Probability, Math 320: Spring 2010  
 Matrix Algebra, Math 322: Spring 2002, Fall 2003, Fall 2004, Fall 2007, Fall 2008  
 Applicable Algebra, Math 340: Spring 2003  
 Introduction to Complex Variables, Math 433: Fall 2002

*Graduate Courses:*

Polytopes: The ABCDs of Enumerating Flags, Math 714: Fall 2011  
 Enumerative Combinatorics, Math 614: Spring 2012, Spring 2010, Spring 2009,  
 Spring 2006, Spring 2004, Spring 2003  
 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 AND SERVICE

2012	Review Advisory Panel for the Simons Foundation
2012 – 2014	University-wide Graduate Council Committee on Fellowships & Traineeships
2011 – Present	Postdoctoral Scholar Hiring Committee
2011 – Present	Morton Middle School Professor Volunteer (one hour per week in math)
Fall 2009	Chair, Discrete Math Prelim Exam Committee
2008 – Present	Founder and Organizer of the Math Movie of the Month <a href="http://www.math.uky.edu/~movies/">http://www.math.uky.edu/~movies/</a>
Fall 2009	Cassidy Elementary School Arts & Sciences Extravaganza Day Organized and ran the interactive session “Mathematical Puzzles” for kindergarten, first and third grade classes.
Fall 2008	Faculty Volunteer for Math High School Day
Fall 2008	Faculty Sponsor for internship of Ms. Maram Haddad
2008 – 2009	Course Czar for Calculus II
2007 – 2010	Cassidy Elementary School Professor Volunteer (one hour per week in math)
2006 – 2007	Hiring Committee (while on sabbatical)
2005 – 2006	Executive Committee
2004 – 2005	Graduate Recruiting Committee
2003 – 2004	Promotion and Tenure Committee
2003 – 2004	Executive Committee, Member At-Large
2003 – 2004	Chair, Discrete Math Prelim Exam Committee
2003 – Present	Member, Discrete Math Prelim Exam Committee (including while on sabbatical)
2002 – 2004	Graduate Committee
2001 – 2002	Executive Committee
2001 – 2002	Chair, Salary Committee
2000 – 2002	Salary Committee
2000 – 2001	Homepage Committee
June 2006 – April 2009	Chair, PhD Committee: Patricia Muldoon Brown
May 2009 – July 2009	PhD Committee: Rama Kuvuluru
Jan 2009 – April 2011	PhD Committee: Eric Clark
April 2008 – Present	PhD Committee: JiYoon Jung
April 2006 – May 2010	PhD Committee: Daniel Wells
April 2006 – July 2008	PhD Committee: Carlos Nicolas
April 2004 – April 2008	PhD Committee: Michael Slone
Feb 2003 – April 2005	PhD Committee: Kathy Sharrow
Mar 2002 – April 2004	PhD Committee: Matt Menzel
Sept 2001 – Nov 2003	PhD Committee: Gareth Bendall
Mar 2001 – April 2003	PhD Committee: Laura Schmidt
Oct 2011 – Present	Chair, Masters Exam Committee: Yue Cai
Sept 2011 – Present	Chair, Masters Exam Committee: Jeffrey Vanasse
Feb 2010 – April 2010	Chair, Masters Exam Committee: John Rotramel
Nov 2009 – April 2010	Chair, Masters Exam Committee: Katie Ouellette
Feb 2005 – April 2005	Chair, Masters Exam Committee: Patricia Muldoon
Feb 2005 – April 2005	Chair, Masters Exam Committee: Keith Kohrs

## COMMITTEE WORK AND SERVICE (CONT'D)

Mar 2004 – April 2004	Chair, Masters Exam Committee: Matt Brown
April 2003 – July 2003	Chair, Masters Exam Committee: Michael Slone
April 2003 – May 2003	Chair, Masters Exam Committee: Ron Williams
April 2003 – May 2003	Chair, Masters Exam Committee: Traci Wilde
Mar 2003 – April 2003	Chair, Masters Exam Committee: Bryson Perry
Apr 2009 – Dec 2009	Masters Exam Committee: Megan Robertson
Oct 2008 – Nov 2008	Masters Exam Committee: Matt Zeckner
Mar 2008 – April 2008	Masters Exam Committee: JiYoon Jung
Mar 2006 – April 2006	Masters Exam Committee: Daniel Wells
Mar 2006 – April 2006	Masters Exam Committee: Carlos Nicholas
Mar 2004 – April 2004	Masters Exam Committee: Scott Godefroy
Mar 2004 – April 2004	Masters Exam Committee: Adam Feldhaus
Nov 2003 – Dec 2003	Masters Exam Committee: Jennifer Rowe
Oct 2003 – Nov 2003	Masters Exam Committee: John Eveland
April 2003 – May 2003	Masters Exam Committee: Kim Lowman
Feb 2002 – April 2002	Masters Exam Committee: David Harness
Feb 2002 – April 2002	Masters Exam Committee: Jennifer Rice
April 2001	Foreign Language Exam Committee: Jakayla Robbins
March 2001	Foreign Language Exam Committee: Gareth Bendall

## ADVISING AND MENTORING

2006 – Present	Volunteer Mentor for the AWM Mentor Network
2004 – Present	Academic Advisor for 3 to 5 graduate students per year
2002 – 2004	EDGE (Enhancing Diversity in Graduate Education) Mentor

## REFEREING

## JOURNALS:

*Advanced Studies in Contemporary Mathematics*  
*American Mathematical Monthly*  
*Annals of Combinatorics*  
*Combinatorica*  
*Discrete and Computational Geometry*  
*Discrete Mathematics*  
*Discrete Mathematics and Theoretical Computer Science*  
*Electronic Journal of Combinatorics*  
*Information Processing Letters*  
*Journal of Algebraic Combinatorics*  
*Journal of Combinatorial Theory, Series A*  
*Journal of Integer Sequences*  
*Proceedings of the AMS*

## GRANTS:

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

## CONFERENCES:

Referee for the FPSAC'06 Conference, San Diego (1 paper)  
Referee for the FPSAC'04 Conference, Vancouver, CANADA (8 papers)

## MEMBERSHIPS IN PROFESSIONAL SOCIETIES

American Mathematical Society  
Association for Women in Mathematics  
Mathematical Association of America

Listed in the American Men and Women of Science, 1998–1999 edition.

## LANGUAGES

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

## PUBLICATIONS

- [1] Extremal problems for the Möbius function in the face lattice of the  $n$ -octahedron, *Discrete Mathematics*, Special issue on Algebraic Combinatorics, **139** (1995), 361–380.
- [2] Sheffer posets and  $r$ -signed permutations, *Annales des Sciences Mathématiques du Québec*, **19**, no. 2 (1995), 173–196, with R. Ehrenborg.
- [3] Juggling and applications to  $q$ -analogues, *Discrete Mathematics*, Special issue on Algebraic Combinatorics, **157** (1996), 107–125, with R. Ehrenborg.
- [4] The  $r$ -cubical lattice and a generalization of the  $cd$ -index, *European Journal of Combinatorics*, **17** (1996), 709–725, with R. Ehrenborg.
- [5] The  $c$ - $2d$ -index of oriented matroids, *Journal of Combinatorial Theory, Series A* **80** (1997), 79–105, with L. J. Billera and R. Ehrenborg.
- [6] Coproducts and the  $cd$ -index, *Journal of Algebraic Combinatorics* **8** (1998), 273–299, with R. Ehrenborg.
- [7] The  $cd$ -index of zonotopes and arrangements, *Mathematical essays in honor of Gian-Carlo Rota* (Bruce E. Sagan and Richard P. Stanley, eds.), Birkhäuser Boston, 1998, 23–40, with L. J. Billera and R. Ehrenborg.
- [8] Mixed volumes and slices of the cube, *Journal of Combinatorial Theory, Series A* **81** (1998), 121–126, with R. Ehrenborg and E. Steingrímsson.
- [9] On valuations, the characteristic polynomial and complex subspace arrangements, *Advances in Mathematics* **134** (1998), 32–42, with R. Ehrenborg.
- [10] On flag vectors, the Dowling lattice and braid arrangements, *Discrete and Computational Geometry* **21** (1999), 389–403, with R. Ehrenborg.
- [11] Cutting polytopes and flag  $f$ -vectors, *Discrete and Computational Geometry*, **23** (2000), 261–271, with R. Ehrenborg, D. Johnston and R. Rajagopalan.
- [12] The Dowling transform of subspace arrangements, *Journal of Combinatorial Theory, Series A*, **91** (2000), 322–333, with R. Ehrenborg.
- [13] The Yuri Manin ring and its  $\mathcal{B}_n$ -analogue, *Advances in Applied Math*, **26** (2001), 154–167.
- [14] A probabilistic approach to the descent statistic, *Journal of Combinatorial Theory, Series A*, **98** (2002), 150–162, with R. Ehrenborg and M. Levin.
- [15] Homology of Newtonian coalgebras, *European Journal of Combinatorics*, **23** (2002), 919–927, with R. Ehrenborg.
- [16] The pre-WDVV ring of physics and its topology, *The Ramanujan Journal*, Special issue on the Number Theory and Combinatorics in Physics, **10** (2005), 269–281.
- [17] Classification of the factorial functions of Eulerian binomial and Sheffer posets, *Journal of Combinatorial Theory, Series A*, **114** (2007), 339–359, with R. Ehrenborg.

- [18] The Möbius function of partitions with restricted block sizes, *Advances in Applied Math*, **39** (2007), 283–293, with R. Ehrenborg.
- [19] Exponential Dowling structures, *European Journal of Combinatorics*, **30** (2009) 311–326, with R. Ehrenborg.
- [20] Cyclotomic factors of the descent set polynomial, *Journal of Combinatorial Theory, Series A*, **116** (2009) 247–264, with D. Chebikin, R. Ehrenborg and P. Pylyavskyy.
- [21] Affine and toric hyperplane arrangements, *Discrete and Computational Geometry*, **41** (2009), 481–512, with R. Ehrenborg and M. Slone.
- [22] The Tchebyshev transforms of the first and second kind, *Annals of Combinatorics*, **14** (2010), 211–244, with R. Ehrenborg.
- [23] On the non-existence of an  $R$ -labeling, *Order*, **28** (2011) 437–442, with R. Ehrenborg.
- [24] Enumerative and asymptotic analysis of a moduli space, *Advances in Applied Math*, **47** (2011), 575–588.
- [25] The Rees product of posets, *Journal of Combinatorics*, **2** (2011), 165–191, with P. Muldoon Brown.
- [26] Level Eulerian posets, to appear, *Graphs and Combinatorics*, with R. Ehrenborg and G. Hetzei, 25 pages, arXiv:1009.3976v1 [math.CO].
- [27] Euler flag enumeration of Whitney stratified spaces, submitted, *Acta Mathematica*, with R. Ehrenborg and M. Goresky, 38 pages.
- [28] The cd-index of balanced and Bruhat graphs, preprint, with R. Ehrenborg, 22 pages.

## SEQUENCES

Six 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, . . . ;

## 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.

## RESEARCH MONOGRAPH (IN PROGRESS)

Louis Billera, Richard Ehrenborg and Margaret A. Readdy, "Polytopes: The ABCD's of Enumerating Flags."

March 2012