

# CURRICULUM VITAE

Bruce E. Sagan

**Office:**

Department of Mathematics  
Wells Hall  
619 Red Cedar Road  
Michigan State University  
East Lansing, MI 48824-1027  
tel: (517) 355-8329  
FAX: (517) 432-1562  
e-mail: [sagan@math.msu.edu](mailto:sagan@math.msu.edu)  
URL: [www.math.msu.edu/~sagan](http://www.math.msu.edu/~sagan)

**Home:**

2059 Georgetown Blvd.  
Ann Arbor, MI 48105-1532  
tel: (734) 769-7642

**EDUCATION:**

1974-1979      MASSACHUSETTS INSTITUTE OF TECHNOLOGY,  
Cambridge, MA., Ph.D. in Mathematics, January 1979.  
Thesis:      “Partially Ordered Sets with Hooklengths  
                 - an Algorithmic Approach.”  
Advisor:      Professor Richard Stanley.  
1971-1974      CALIFORNIA STATE UNIVERSITY, Hayward, CA.  
B.S. in Mathematics, Summa Cum Laude, June 1974.

**ACADEMIC CAREER:**

1994–present      MICHIGAN STATE UNIVERSITY, East Lansing, MI.  
Full Professor  
2007–2010      NATIONAL SCIENCE FOUNDATION, Arlington, VA.  
Program Officer  
2005–2006      DIMACS, Rutgers, NJ  
Visiting Professor.  
2005 (Spring)      MITTAG-LEFFLER INSTITUTE, Djursholm, Sweden  
Visiting Professor.  
2001 (Winter)      NEWTON INSTITUTE, Cambridge, England  
Visiting Professor.  
1997 (Winter)      MATHEMATICAL RESEARCH INSTITUTE, Berkeley, CA

General Member.

1989–1994 MICHIGAN STATE UNIVERSITY, East Lansing, MI.  
Associate Professor

1993–1994 ROYAL INSTITUTE OF TECHNOLOGY, Stockholm, Sweden,  
Visiting Professor.

1991 (Spring) UNIVERSITY OF CALIFORNIA, San Diego, CA,  
Visiting Professor.

1986–1989 MICHIGAN STATE UNIVERSITY, East Lansing, MI.  
Assistant Professor

1988 (Spring) INSTITUTE FOR MATH. AND ITS APPLICATIONS,  
Minneapolis, MN., Visiting Senior Member.

1986 (Fall) UNIVERSITE DU QUEBEC, Montréal PQ  
Visiting Professor.

1985–1986 UNIVERSITY OF PENNSYLVANIA, Philadelphia, PA.  
Visiting Lecturer.

1984–1985 MIDDLEBURY COLLEGE, Middlebury, VT.  
Assistant Professor of Mathematics

1983–1984 UNIVERSITY COLLEGE OF WALES, Aberystwyth, Wales.  
NATO postdoctoral fellow.

1980–1983 UNIVERSITY OF MICHIGAN, Ann Arbor, MI.  
Assistant Professor of Mathematics.

1979–1980 UNIVERSITE LOUIS PASTEUR, Strasbourg, France.  
NSF postdoctoral fellow.

## **GRANTS**

1979–1980 NSF Postdoctoral Fellowship, U.S. – France  
Exchange of Scientists Program

1980–1981 NSF Summer Research Grant

1983–1984 NATO Postdoctoral Fellowship in Science

1987–1988 All University Research Initiation Grant

1988–1989 NSF Summer Research Grant

1990 SCREMS Computer Hardware Grant  
NSF/ICM-90 Travel Grant  
National Science Council of Taiwan Research Grant

1991 Special Foreign Travel Fund Award

1991–1992 All University Research Initiation Grant

1993 Special Foreign Travel Fund Award

	National Science Council of Taiwan Research Grant
1994	Bar Ilan University Visitor Grant
1995	Special Foreign Travel Fund Award Research In Pairs Grant, Oberwolfach
1996	Australian National University Visitor Grant
1997	MSRI General Membership Grant Special Foreign Travel Fund Award
1999	University of Florida Visitor Grant
2000	University of Waterloo Visitor Grant
2001	Special Foreign Travel Fund Award Newton Institute Subsistence Award
2003	Clay Institute Partnership (conference in honor of Richard Stanley) NSF Grant (conference in honor of Richard Stanley)
2005	University of Florida Visitor Grant Mittag-Leffler Institute Subsistence Award Special Foreign Travel Fund Award
2007	Visiting Faculty Program Grant (MSU)
2011	co-PI, "Summer Undergraduate Research Institute in Experimental Mathematics," H98230-11-1-0222, National Security Agency, \$176,107, 2011–2012.
2011	co-PI, "REU Site in Applied and Discrete Mathematics," DMS-1062817, National Science Foundation, \$275,406, 2011–2014 .
2013	co-PI, "Summer Undergraduate Research Institute in Experimental Mathematics," H98230-11-1-0222, National Security Agency, \$94,045 in 2013, additional \$76,868 awarded in August 2013

## **PHD STUDENTS**

1988–1992	Kathy Dempsey
1990–1993	Margaret Readdy
1991–1993	José Giraldo
1992–1995	Ping Zhang
1994–1998	David Gebhard
1994–1999	Larry Liu
1999–2003	Szu-En Cheng
2005–2007	Adam Goyt
2008–2011	Bob Willenbring
2011-2015	Joshua Hallam
2013–2015	Kenneth Barrese
2011–2016	Samantha Dahlberg
2011–present	Emad Zahedi
2014–present	Emily Olson
2016– present	Duff Baker-Jarvis

## ADDRESSES

- 1979 International Seminar on Algorithm and Combinatorics, Sophia-Antipolis, France  
Conference on Combinatorics and Representations of the Symmetric Group,  
Oberwolfach, Germany
- 1981 Michigan Graph Theory Conference, Ann Arbor, MI  
Lotharingien Seminar, Bayreuth, Germany  
Swedish Mathematical Society Annual Meeting, Stockholm, Sweden
- 1982 Conference on Combinatorics, Oberwolfach, Germany  
Conference on Combinatorics, Giessen, Germany  
AMS Meeting special session, Algebraic Combinatorics, Cincinnati, OH
- 1983 University of Manchester, Manchester, England
- 1984 AMS Meeting special session, Enumerative Combinatorics, Minneapolis, MN  
University of Warwick, Coventry, England  
University of Wales Pure Math Colloquium, Gregynog, Wales  
Lotharingien Seminar, Burg Feuerstein, West Germany  
University College of Wales, Bangor, Wales  
University of Birmingham, Birmingham, England  
University of College of Wales, Cardiff, Wales  
University of Wales History of Math Course, Gregynog, Wales  
Conference on Combinatorics, Invariant Theory, and  
Representations of the Symmetric Group, Oberwolfach, Germany
- 1985 Symposium on Combinatorics and the Symmetric Group,  
Durham, England  
Canadian Math. Soc. Meeting, special session on Combinatorics,  
Québec City, Québec  
AMS Meeting special session, Enumerative Combinatorics, Worcester, MA  
AMS Meeting special session, Algebraic Combinatorics, Anaheim, CA  
M.I.T. Special Year in Combinatorics, Cambridge, MA
- 1986 University of Pennsylvania, Philadelphia, PA  
Bryn Mawr College, Bryn Mawr, PA
- 1987 AMS Meeting special session, Combinatorics and Representation Theory,  
San Antonio, TX  
University of Waterloo, Waterloo, ONT  
Discrete Math. Conference, Wright State University, Dayton, OH

- 1988 Université du Québec, Montréal, P.Q.  
 DePaul University, Chicago, IL  
 M.I.T., Cambridge, MA  
 Central Michigan University, Mt. Pleasant, MI  
 XXXI Semester on Classical Algebraic Structures, Stefan Banach  
 International Center, Warsaw, Poland  
 Program in Applied Combinatorics, IMA, Minneapolis, MN
- 1989 Université de Bordeaux, Bordeaux, France  
 Capitol City Conference on Combinatorics and Theoretical  
 Computer Science, Washington, D.C.  
 Conference on Combinatorics, Oberwolfach, Germany
- 1990 National Chengchi University, Taipei, Taiwan  
 ICM, Kyoto, Japan  
 Conference on Commutative Algebra and Combinatorics, Nagoya, Japan  
 University of Illinois at Chicago, Chicago, IL
- 1991 University of Pennsylvania, Philadelphia, PA  
 Arizona State University, Tempe, AZ  
 3rd Conference on Formal Power Series and Algebraic Combinatorics,  
 Bordeaux, France  
 University of California at San Diego, La Jolla, CA  
 California Institute of Technology, Pasadena, CA  
 North Texas State University, Denton, TX
- 1992 University of Miami, Coral Gables, FL  
 Hyperplane Workshop, Madison, WI  
 AMS Meeting special session, Combinatorics and Graph Theory, Dayton, OH  
 Mittag-Leffler Institute, Djursholm, Sweden  
 4th Conference on Formal Power Series and Algebraic Combinatorics,  
 Montréal, Québec  
 7th International Conference on Graph Theory, Combinatorics,  
 Algorithms and Applications, Kalamazoo, MI  
 AMS Meeting special session, Combinatorics and Geometry, Springfield, MO  
 University of Calgary, Calgary, Alberta
- 1993 Freie Universität, Berlin, Germany  
 National Chiao Tung University, Hsinchu, Taiwan  
 Academia Sinica, Taipei, Taiwan  
 Dalian University of Technology, Dalian, China  
 South China Normal University, Guangzhou, China  
 3rd China - U.S.A. International Conference in Graph Theory,

- Combinatorics, Algorithms and Applications, Beijing, China  
 Jerusalem Combinatorics '93, Jerusalem, Israel  
 AMS Meeting, special session on Geometric Methods in Combinatorics,  
 Washington, D.C.  
 AMS Meeting, special session on Algebraic Combinatorics, Knoxville, TN  
 Cornell University, Ithaca, NY
- 1994 MIGHTY XXIII, Kalamazoo, MI  
 Conference on Hyperplane Arrangements, Marseilles, France  
 Universität Wien, Vienna, Austria  
 Università di Milano, Milan, Italy  
 Universität Erlangen, Erlangen, Germany  
 Royal Institute of Technology, Stockholm, Sweden
- 1995 George Washington University, Washington, D.C.  
 Howard University, Washington, D.C.  
 Séminaire Lotharingien de Combinatoire, Hesselberg, Germany  
 FPSAC 1995, Paris, France  
 Conference on combinatorics and the symmetric group, Oberwolfach, Germany  
 Hebrew University, Jerusalem, Israel  
 Technion University, Haifa, Israel  
 Bar Ilan University, Tel Aviv, Israel  
 Ben Gurion University, Be'er Sheva, Israel
- 1996 MRSI, Berkeley, California  
 MIGHTY XXIV, Alma, MI  
 University of Melbourne, Australia  
 University of Queensland, Brisbane, Australia  
 University of Central Queensland, Rockhampton, Australia  
 Australia National University, Canberra, Australia  
 University of Sydney, Sydney, Australia  
 Rotafest, M.I.T., Cambridge  
 University of Texas, El Paso, TX
- 1997 Ohio State University, Columbus, OH  
 FPSAC 1997, Vienna, Austria  
 Santa Clara University, Santa Clara, CA  
 California State University, Hayward, CA  
 AMS special session on Algebraic Combinatorics, San Diego, CA
- 1998 Winnipeg Combinatorial Math. Conference, Winnipeg, Canada  
 Japanese Math. Soc. Workshop on Hyperplane Arrangements, Tokyo, Japan  
 AMS special session on Algebraic Combin., Louisville, KY

State University of New York, Albany, NY

- 1999 AMS special session on Algebraic and Geometric Combin., Providence, RI  
FPSAC 1999, Barcelona, Spain  
MIGHTY XXXI, Oakland, MI  
AMS special session on Algebraic and Geometric Combin., Gainesville, FL
- 2000 Western Michigan University, Kalamazoo, MI  
9th Int'l Conference on Graphs, Combinatorics, Algorithms, and Appl., Kalamazoo, MI  
University of Waterloo, Waterloo, ONT
- 2001 Queen Mary College, London, England  
University of Manchester Institute of Science and Technology, Manchester, England  
University College of Wales, Aberystwyth, Wales  
Oxford University, Oxford, England  
Newton Institute, Cambridge, England  
University of Klagenfurt, Klagenfurt, Austria  
Conference on Tutte Polynomials and related topics, Barcelona, Spain  
Bay Area Discrete Math Day, Hayward, CA
- 2002 Conference on Multilinear Algebra and Matroid Theory, Lisbon, Portugal
- 2003 AMS special session on Lattice Theory, Baltimore, MD  
Conference on Permutation Patterns, Dunedin, New Zealand  
AMS special session on Algebraic and Topological Combinatorics, New York, NY  
Seminar: Université du Québec, Montréal, PQ  
Joint SIAM-CAIMS minisymposium on Graph Theory, Montréal, PQ  
FPSAC 2003, Vadstena, Sweden
- 2004 Colloquium: SUNY, Binghamton, NY  
Seminar: Rutgers, Piscataway, NJ  
Colloquium: Dalhousie University, Halifax, Nova Scotia  
Conference for Richard Stanley's 60th birthday, MIT, Cambridge, MA  
AMS special session on Graph Polynomials, Pittsburgh, PA
- 2005 Colloquium: Temple University, Philadelphia, PA  
Seminar: University of Pennsylvania, Philadelphia, PA  
Seminar: Dartmouth College, Hanover, NH  
Seminar: Rutgers University, Piscataway, NJ  
Seminar: Ohio State University, Columbus, OH  
3rd Conference on Permutation Patterns, Gainesville, FL  
Colloquium: University of Florida, Gainesville FL  
Colloquium: SUNY Binghamton, Binghamton, NY

- Seminar: Lafayette College, Easton, PA  
Mittag-Leffler Institute, Djursholm, Sweden  
Seminar: Saint Michael's College, Colchester, VT  
Words 2005, Université du Québec, Montréal, PQ  
Conference on Combinatorial Geometries and Applications, CIRM,  
Marseilles, France  
AMS special session on Graph Invariants, Bard College,  
Annandale-on-Hudson, NY  
AMS special session on Algebraic and Geometric Combinatorics, Bard College,  
Annandale-on-Hudson, NY  
Seminar: University of Linköping, Linköping, Sweden  
Seminar: Royal Institute of Technology, Stockholm, Sweden
- 2006 Seminar: Rutgers University, Piscataway, NJ  
Colloquium: Dartmouth College, Hanover, NH  
Colloquium: George Washington University, Washington, DC  
Discrete Mathematics Days in the Northeast, SUNY, Albany, NY  
Colloquium: SUNY Binghamton, Binghamton, NY  
4th Conference on Permutation Patterns, Reykjavík, Iceland  
Featured address: FPSAC 2006, UCSD, La Jolla, CA
- 2007 Featured address: 18th British Postgraduate Combinatorial Conference,  
St Andrews, Scotland  
5th Conference on Permutation Patterns, St Andrews, Scotland  
Lecture series: Summer School on Algebra and Combinatorics, Lisbon, Portugal  
Seminar: George Washington University, Washington, D.C.  
Colloquium: Howard University, Washington, D.C.  
CMS special session on Combinatorics and Physics, London, Canada  
Conference for Andreas Blass' 60th Birthday, Toronto, Canada
- 2008 Conference for Anders Björner's 60th Birthday, Stockholm, Sweden  
Colloquium: DePaul University, Chicago, IL  
Seminar: San Francisco State University, San Francisco, CA  
Seminar series: George Washington University, Washington, D.C.  
Conference on Combinatorics and Groups, Gainesville, FL  
Colloquium: George Mason University, Fairfax, VA  
Colloquium: Tulane University, New Orleans, LA  
Seminar: Dartmouth, Hanover, NH  
Memorial Conference in Honor of Tom Brylawski, UNC, Chapel Hill, NC  
Seminar: North Carolina State University, Raleigh, NC  
Colloquium: Howard University, Washington, D.C.  
Seminar: University of Delaware, Newark, DE



- 2009 Minicourse on Capstone Courses, Joint Mathematics Meetings, Washington, D.C.  
AMS special session on Applications of Algebraic and Geometric Combinatorics,  
North Carolina State University, Raleigh, NC  
Seminar: University of Illinois, Urbana-Champaign, IL  
Ulam Centennial Conference, University of Florida, FL  
AMS special session on Algebraic Combinatorics, Pennsylvania State  
University, College Park, PA  
7th Conference on Permutation Patterns, Florence, Italy  
FPSAC 2009, Hagenberg, Austria  
Colloquium: Howard University, Washington, D.C.  
AMS-KMS special session on Algebraic Combinatorics, Seoul, Korea  
Algebraic Combinatorics Workshop, KAIST, Daejeon, Korea
- 2010 Seminar: Rutgers University, Piscataway, NJ  
Seminar: Virginia Commonwealth University, Richmond, VA  
Colloquium: University of Virginia, Charlottesville, VA  
AMS special session on Enumerative Combinatorics, San Francisco, CA  
Workshop on Combinatorics, Enumeration, and Invariant Theory, George Mason  
University, Fairfax, VA  
Mathfest special session on Visualizing Combinatorics through Tilings, Pittsburgh, PA  
AMS special session on Analytic Combinatorics, Syracuse, NY  
SIAM mini-symposium on Enumerative Combinatorics, Austin, TX  
8th French Combinatorial Conference, Orsay, France  
Seminar: University of Pennsylvania, Philadelphia, PA  
Colloquium: Bucknell University, Lewisburg, PA
- 2011 Colloquium: University of Connecticut, Storrs, CT  
AMS special session on Algebraic Combinatorics, Iowa City, IA  
AMS special session on Algebraic and Geometric Combinatorics, Statesboro, GA  
Waterloo Workshop on Computer Algebra, Waterloo, ON, Canada  
Featured address: British Combinatorial Conference, Exeter, England  
Seminar: University of Michigan, Ann Arbor, MI  
Featured address: International Conference on Discrete Mathematics  
and Its Applications, Taipei, Taiwan
- 2012 AMS special session on Enumerative and Geometric Combinatorics, Lawrence, KS  
Seminar: University of Washington, Seattle, WA  
Seminar: Simon Fraser University, Burnaby, BC, Canada  
Colloquium: Chalmers University of Technology, Göteborg, Sweden  
SIAM mini-symposium on Algebraic Combinatorics, Halifax, NS, Canada  
SIAM mini-symposium on Graph Polynomials, Halifax, NS, Canada  
AMS special session on Rook Theory and Applications, New Orleans, LA

- 2013 Featured addresses: Southeastern International Conference  
on Combinatorics, Graph Theory, and Computing, Boca Raton, FL  
Colloquium: West Virginia University, Morgantown, WV  
Seminar: University of Michigan, Ann Arbor, MI  
Seminar: University of Kentucky, Lexington, KY  
Kappa Mu Epsilon Talk: Central Michigan University, Mt. Pleasant, MI  
Seminar: LACIM, Montréal, PQ, Canada  
CanaDAM mini-symposium on Enumerative Combinatorics, St John's, NL, Canada  
AMS special session on Multiple Analogues of Combinatorial Special Numbers  
and Associated Identities, Philadelphia, PA  
Featured addresses: Atlanta Lecture Series in Combinatorics  
and Graph Theory, Atlanta, GA  
Colloquium: Linköpings Universitet, Linköping, Sweden
- 2014 Colloquium: University of Michigan, Ann Arbor, MI  
Seminar: University of Washington, Seattle, WA  
Lecture Series: Lake Michigan Workshop on Combinatorics and Graph Theory,  
Kalamazoo, MI  
Featured address: Conference on Bijective and Algebraic Combinatorics, Gainesville, FL  
Featured address: CombinaTexas, College Station, TX  
Colloquium: Michigan Technological University, Houghton, MI  
Seminar: Center for Combinatorics, Nankai, China  
Lecture series: 4th Encuentro Colombiano de Combinatoria, Bogotá, Colombia  
Stanley@70 Conference, Cambridge, MA  
Patterns in Permutations, Johnson City, TN  
Colloquium: York University, Toronto, ONT, Canada  
AMS Special Session on Algebraic Combinatorics, Eau Claire, WI  
Featured address: Clemson Mini-Conference, Clemson, SC  
Seminar: Central Michigan University, Mt. Pleasant MI
- 2015 AMS special session on Enumerative Combinatorics, San Antonio, TX  
Seminar: Rutgers University, Piscataway, NJ  
Invited address: Midwest Combinatorics Conference, Minneapolis, MN  
Featured address: Patterns in Permutations, London, England  
AMS special session on Enumerative Algebraic and Geometric Combinatorics, Chicago, IL  
AMS special session on Combinatorial and Geometric Representation Theory, Chicago, IL  
AMS special session on Enumerative Combinatorics, Chicago, IL
- 2016 Combinatorial Algebra meets Algebraic Combinatorics, London, Ont  
Invited address: Pattern avoidance and genome sorting, Saarbrücken, Germany  
AMS special session on Combinatorics of Symmetric Functions, Athens, GA  
Midwest Graph Theory Conference LVII, Dayton, OH  
Colloquium: UCLA, Los Angeles, CA

XXI Coloquio Latinoamericano de Algebra, Buenos Aires, Argentina  
AMS special session on Enumerative Combinatorics, Minneapolis, MN

2017 AMS special session on Applications of Partially Ordered Sets, Atlanta, GA  
AMS special session on Algebraic and Enumerative Combinatorics, Bloomington, IN  
Colloquium: Dartmouth College, Hanover, NH  
Invited address: IPM Combinatorics and Computing Conference, Tehran, Iran  
Invited address: British Combinatorial Conference, Glasgow, Scotland  
Featured address: AMS sectional meeting, Buffalo, NY

### **AWARDS, HONORS, SERVICE**

1985 Good Teaching Award, University of Pennsylvania  
1990 J.S. Frame Teaching Award, Michigan State University  
2004 J.S. Frame Teaching Award, Michigan State University  
2004-present Editor-in-chief, Electronic Journal of Combinatorics

### **RESEARCH INTERESTS**

Algebraic, enumerative, and topological combinatorics as well as graph theory: symmetric functions, groups and representations, tableaux algorithms, chromatic and independence polynomials of graphs, the mobius function and homology of partially ordered sets, pattern avoidance and containment in permutations and other combinatorial structures.

# PUBLICATION LIST

Bruce E. Sagan

## PAPERS

1. An analog of Schensted's algorithm for shifted Young tableaux, *J. Combin. Theory Ser. A* **27** (1979), 10–18.
- 1a. Also included in “Young Tableaux in Combinatorics, Invariant Theory, and Algebra, an Anthology of Recent Work,” Joseph P. S. Kung ed., Academic Press, New York (1982), 29–37.
2. A cyclic derivative in non-commutative algebra (with G.-C. Rota and P. Stein), *J. Algebra* **64** (1980), 54–75.
3. On selecting a random shifted Young tableau, *J. Algorithms* **1** (1980), 213–234.
4. Congruences derived from group action (with G.-C. Rota), *European J. Combin.* **1** (1980), 67–76.
5. From sets to functions: 3 elementary examples (with S.-N. Joni and G.-C. Rota), *Discrete Math.* **37** (1981), 193–202.
6. Enumeration of partitions with hooklengths, *European J. Combin.* **3** (1982), 85–94.
7. Bijective proofs of certain vector partition identities, *Pacific J. Math.* **102** (1982), 171–178.
8. A note on Abel polynomials and rooted labeled forests, *Discrete Math.* **44** (1983), 293–298.
9. Computer-aided analysis of monotonic sequence games (with F. Harary and D. West), *Atti Accad. Perolitana Pericolanti Cl. Sci. Fis. Mat. Natur.* **61** (1983), 67–78.
10. Signed posets (with F. Harary), *Bull. Calcutta Math. Soc.* (1983), 3–10.
11. Congruences via Abelian groups, *J. Number Theory* **20** (1985), 210–237.
12. Bijective proofs of two broken circuit theorems (with A. Blass), *J. Graph Theory* **10** (1986), 15–21.
13. Shellability of exponential structures, *Order* **3** (1986), 47–54.
14. Shifted tableaux, Schur  $Q$ -functions, and a conjecture of R. P. Stanley, *J. Combin. Theory Ser. A* **45** (1987), 62–103.

15. A note on independent sets in trees, *SIAM J. on Discrete Math.* **1** (1988), 105–108.
16. Inductive and injective proofs of log concavity results, *Discrete Math.* **68** (1988), 281–292.
17. Probabilistic algorithms for trees (with Y.-N. Yeh), *Fibonacci Quart.* **27** (1989), 201–208.
- 17a. Also included as a *Rapport de Recherche*, Université du Québec, Montréal (1987).
18. The ubiquitous Young tableau, in “Invariant Theory and Tableaux,” Dennis Stanton ed., IMA Volumes in Math. and its Applications, Vol. 19, Springer-Verlag, New York (1990), 262–298.
19. Robinson-Schensted algorithms for skew tableaux (with R. P. Stanley), *J. Combin. Theory Ser. A* **55** (1990), 161–193.
20. The twisted  $N$ -cube with application to multiprocessing (with Abdol-Hossein Esfahanian and Lionel M. Ni), *IEEE Trans. on Computers* **40** (1991), 88–93.
- 20a. Also appeared as: On enhancing hypercube multiprocessors, “1988 International Conference on Parallel Processing,” 86–89.
21. A maj statistic for set partitions, *European J. Combin.* **12** (1991), 69–79.
22. Eigenvectors and eigenvalues of some special graphs IV. Multi-level circulants (with S.-L. Lee, Y.-L. Luo and Y.-N. Yeh), *Internat. J. of Quantum Chem.* **41** (1992), 105–116.
23. Log concave sequences of symmetric functions and analogs of the Jacobi-Trudi determinants, *Trans. Amer. Math. Soc.* **329** (1992), 795–811.
24. Inductive proofs of  $q$ -log concavity, *Discrete Math.* **99** (1992), 298–306.
25. Congruence properties of  $q$ -analogs, *Adv. in Math.* **95** (1992), 127–143.
26. The *Combinatorica* software package, *College Math. J.* **23** (1992), 335–339.
27. Lattice paths, reflections, & dimension-changing bijections (with R. K. Guy and C. Krattenthaler), *Ars Combin.* **34** (1992), 3–15.
28. Basic derivations for subarrangements of Coxeter arrangements (with T. Józefiak), *J. Algebraic Combin.* **2** (1993), 291–320.
29. Combinatorial proofs of hook generating function for skew plane partitions, *Theoret. Comput. Sci.* **117** (1993) 273–287.
- 29a. Also appeared in: “Series Formelles et Combinatoire Algebrique (Actes de Colloque, Bordeaux, 1991),” 369–384.

30. Maximizing Möbius functions on subsets of Boolean algebras (with Y.-N. Yeh and G. Ziegler), *Discrete Math.* **126** (1994), 293–311.
31. Partition lattice  $q$ -analogs associated with  $q$ -Stirling numbers (with K. Dempsey and C. Bennett), *J. Algebraic Combin.* **3** (1994), 261–283.
32. A generalization of Rota’s NBC theorem, *Adv. in Math.* **111** (1995), 195–207.
33. Enumeration of trees by inversions (with I. M. Gessel and Y.-N. Yeh), *J. Graph Theory* **19** (1995), 435–459.
34. A relative of the Thue-Morse sequence (with J.-P. Allouche, A. Arnold, J. Berstel, S. Brlek, W. Jockusch, and S. Plouffe), *Discrete Math.* **139** (1995), 455–461.
35. A generalization of semimodular supersolvable lattices (with C. Bennett), *J. Combin. Theory Ser. A* **72** (1995), 209–231.
36. La correspondance de Robinson-Schensted pour les tableaux oscillants gauches (with S. Dulucq), *Discrete Math.* **139** (1995), 129–142.
37. The Tutte polynomial of a graph, depth-first search, and simplicial complex partitions (with I. M. Gessel), *Electronic J. Combin.* (*Foata Festschrift Volume*), **3** (1996), R9, 36 pages.
38. Subspace arrangements of type  $B_n$  and  $D_n$  (with A. Björner), *J. Algebraic Combin.*, **5** (1996), 291–314.
39. The Wiener polynomial of a graph (with Y.-N. Yeh and P. Zhang), *Internat. J. of Quantum Chem.*, **60** (1996), 959–969.
40. Arithmetic properties of generalized Euler numbers (with P. Zhang), *Southeast Asian Bull. Math.*, **21** (1997), 73–78.
41. Möbius functions of lattices (with A. Blass), *Adv. in Math.*, **127** (1997), 94–123.
42. Characteristic and Ehrhart polynomials (with A. Blass), *J. Algebraic Combin.*, **7** (1998), 115–126.
43. Unimodality and the reflection principle, *Ars Combin.*, **48** (1998), 65–72.
44. Why the characteristic polynomial factors, *Bull. Amer. Math. Soc.*, **36** (1999), 113–134.
45. A Littlewood-Richardson rule for factorial Schur functions (with A. Molev), *Trans. Amer. Math. Soc.* **351** (1999), 4429–4443.
46. Young tableaux, in “CRC Handbook of Discrete and Combinatorial Mathematics,” Kenneth Rosen ed., CRC Press, Boca Raton, 2000, 129–132.

47. Left-modular elements of lattices (with L. Liu), *J. Combin. Theory, Ser. A*, (special issue dedicated to the memory of Gian-Carlo Rota) **91** (2000), 369–385.
48. Sinks in acyclic orientations of graphs (with D. Gebhard), *J. Combin. Theory, Ser. B*, **80** (2000), 130–146.
49. Schur functions in algebraic combinatorics, in “Encyclopaedia of Mathematics, Supplement II” M. Hazewinkel ed., Kluwer Academic Publishers, Dordrecht, 2000, 409–411.
50. A chromatic symmetric function in noncommuting variables (with D. Gebhard), *J. Algebraic Combin.*, **13** (2001), 227–255.
51. The multiplicities of a dual-thin  $Q$ -polynomial association scheme (with J. Caughman, IV), *Electronic J. Combin.*, **8** (2001), Note 4, 5 pp. (electronic).
52. Pattern frequency sequences and internal zeros (with M. Bóna and V. Vatter), *Adv. in Appl. Math.* (special issue in memory of Rodica Simion,) **28** (2002), 395–420.
53. Two injective proofs of a conjecture of Simion (with M. Bóna), *J. Combin. Theory, Ser. A* **102** (2003), 212–216.
54. Bounding quantities related to the packing density of the pattern  $1(\ell + 1)\ell \dots 2$  (with M. Hildebrand and V. Vatter), *Adv. in Appl. Math.*, **33** (2004), 633–653.
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