

# 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

2018–2019      MASSACHUSETTS INSTITUTE OF TECHNOLOGY, Cambridge, MA.  
Visiting 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
- 2019 co-PI, “Validating and Extending Methods for Extracting the Backbone of Bipartite  
Projections,” SES-1851625, National Science Foundation, \$120,000, Summer 2019.
- 2020 co-PI “Extracting the backbone of complex human networks,” Center for Business  
and Social Analytics (MSU), \$24,926, 2020–2021.
- 2020 co-PI, “Extracting the Backbone of Weighted Networks,” SES-2016320,  
National Science Foundation, \$148,879, Summer 2020.

## **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

2011–2017	Emad Zahedi
2014–2017	Emily Olson
2016–2019	Duff Baker-Jarvis
2017–2021	Rachel Domagalski
2020–present	Quinn Minnich
2020–present	Jinting Liang
2021–present	Jamie Kimble

## 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 Chiaio 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  
Universita 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  
Keynote address: FPSAC 2006, UCSD, La Jolla, CA
- 2007 Keynote 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  
 Keynote address: British Combinatorial Conference, Exeter, England  
 Seminar: University of Michigan, Ann Arbor, MI

Keynote 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 Keynote 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  
Keynote 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  
Keynote address: Conference on Bijective and Algebraic Combinatorics, Gainesville, FL  
Keynote 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  
Keynote 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  
 Keynote 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  
 Invited address: 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  
 Mathematical Adventures and Diversions, Lafayette College, Easton, PA  
 Colloquium: Lafayette College, Easton, PA  
 AMS special session on Algebraic and Enumerative Combinatorics, Bloomington, IN  
 Colloquium: Dartmouth College, Hanover, NH  
 Invited address: Mini-symposium on Patterns in permutaitons and words,  
 British Combinatorial Conference, Glasgow, Scotland  
 Keynote address: AMS sectional meeting, Buffalo, NY  
 Seminar: University of Washington, Seattle, WA
- 2018 Seminar: University of Michigan, Ann Arbor, MI  
 Seminar: Brandeis University, Waltham, MA  
 Invited address: Krattenthalerfest, Strobl, Austria  
 Featured address: Discrete Mathematics Day of the Northeast, Kingston, RI  
 AMS special session on Combinatorics in Algebra and Algebraic Geometry,  
 Ann Arbor, MI  
 Seminar: Williams College, Williamstown, MA  
 Colloquium: University of Florida, Gainesville, FL  
 Seminar: University of Florida, Gainesville, FL
- 2019 Invited address, Helen Barton Lecture Series, Greensboro, NC  
 Colloquium: Wake Forest University, NC  
 Colloquium: Worcester Polytechnic Institute, Worcester, MA  
 Seminar, MIT, Cambridge, MA  
 Seminar, University of California, San Diego, CA  
 Seminar, Universtiy of Colorado, Boulder, CO  
 Seminar, University of Massachusetts, Amherst, MA  
 Invited address, Harvard University, Cambridge, MA  
 Invited address, Electronic Journal of Combinatroids Conference, Vancouver, BC

- AMS special session on Patterns in Permutations, Gainesville, FL
- 2020 Featured address, NY Regional Graduate Mathematics Conference, Syracuse, NY, virtual  
 Address, Permutation Patterns 2020, virtual  
 Seminar, University of Minnesota, Minneapolis, MN, virtual  
 Poster, Dynamical Algebraic Combinatorics Conference, virtual  
 ANT-COG Seminar, University of North Carolina, Greensboro, NC, virtual  
 Cluster Algebra Seminar, Michigan State University, East Lansing, MI, virtual  
 Online Cluster Algebra Seminar, virtual
- 2021 Seminar, University of British Columbia, Vancouver, BC, virtual  
 Seminar, Illinois Institute of Technology, Chicago, IL, virtual  
 Poster, Commutative Algebra meets Algebraic Combinatorics, virtual  
 Seminar, Arizona State University, Tempe, AZ, virtual  
 Invited address, Conference in honor of Yeong-Nan Yeh, Taipei, Taiwan, virtual  
 Address: Southeastern International Conference  
   on Combinatorics, Graph Theory, and Computing, virtual  
 Featured address, Discrete Math Days in the Northeast, virtual  
 Address, CanaDAM, virtual  
 Seminar, Dartmouth College, Hannover, NH, virtual  
 Colloquium, Universidad de Sevilla, Spain, virtual  
 AMS Special Session on Geometric and Topological Combinatorics, virtual  
 Invited address, BIRS Workshop on Dynamical Algebraic Combinatorics, virtual
- 2022 Seminar, Université de Paris Nord, Paris, France, virtual  
 AMS Special Session on Permutation Enumeration, JMM, virtual  
 Seminar, Dartmouth College, Hannover, NH, virtual  
 Tamura/Lilly Lecture, Oberlin, OH  
 Address, Permutation Patterns 2022, Valparaiso, IN  
 Seminar, Algebraic and Combinatorial Perspectives in the Mathematical Sciences, virtual  
 Special talk, AMS Special Session on Enumerative Combinatorics, Chattanooga, TN  
 Seminar, Örebro University, Sweden  
 Invited address, Enumerative Combinatorics conference, Oberwolfach, Germany
- 2023 Seminar, University of Michigan, Ann Arbor, MI  
 Math-for-Everyone lecture, University of Notre Dame, Notre Dame, IL  
 Seminar, University of Notre Dame, Notre Dame, IL  
 Alexanderson Lecture, Santa Clara University, CA  
 Seminar, University of California, Berkeley, CA  
 Seminar, San Francisco State University, San Francisco, CA  
 Invited Address: International Conference on Enumerative Combinatorics  
 and Applications, virtual

Featured Address: Triangle Lectures in Combinatorics, Raleigh, NC  
Invited Address, Algebraic Combinatorics Virtual Expedition, virtual  
Seminar, Illinois Institute of Technology, Chicago, IL  
Colloquium, DePaul University, Chicago, IL  
Colloquium, University of North Carolina, Greensboro, NC, virtual  
Seminar, York University, York, ON  
Seminar, University of South Carolina, virtual  
Seminar, Dartmouth College, Hannover, NH, virtual  
Colloquium, University of Southern California, Los Angeles, CA

2024 Colloquium, Illinois Institute of Technology, Chicago, IL  
Featured Address, Bruce Sagan Birthday Conference, Gainesville, FL  
AMS Special Session on Posets in algebraic and geometric combinatorics, Milwaukee, WI  
AMS Special Session on Permutation Patterns, Washington, DC  
Invited address, Group Theory and its Neighboring Disciplines, Denver, CO  
Workshop, Algebraic Combinatorics Virtual Expedition, virtual  
AMS Special Session on Symmetric Functions and Applications, Albany, NY  
AMS Special Session on Permutation Patterns, Albany, 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.
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