

## Clara S. Chan

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**Research Interests** Combinatorics, convex geometry, cryptology, computational biology, biology

**Education** *Massachusetts Institute of Technology, Cambridge, Massachusetts*  
Coursework in Biology and Computational Biology, September 2007 to May 2009.

*Massachusetts Institute of Technology, Cambridge, Massachusetts*  
Ph.D. in Mathematics, June 1992.  
Thesis: “On Shellings and Subdivisions of Convex Polytopes”  
Thesis Advisor: Richard P. Stanley.

*University of Chicago, Chicago, Illinois*  
M.A. in Mathematics, June 1988.

*Harvard University, Cambridge, Massachusetts*  
A.B. in Mathematics, June 1987.  
Magna cum laude, Phi Beta Kappa.

**Awards** *National Science Foundation Career Grant*  
August 1995 to August 1998.

*National Science Foundation Research Planning Grant*  
September 1994 to April 1995.

*Mathematical Association of America Project NExT Fellowship*  
August 1994 to August 1995.

*Japan Society for Promotion of Science Postdoctoral Fellowship*  
September 1992 to August 1993.

*Office of Naval Research Graduate Fellowship*  
October 1987 to September 1990.

## Experience

*Wellesley College, Wellesley, MA*

Visiting Lecturer, Department of Mathematics, from August 2015.

*Massachusetts Institute of Technology, Cambridge, MA*

Research Affiliate, Broad Institute and CSAIL, from August 2013.

*Massachusetts Institute of Technology, Cambridge, MA*

Research Scientist, Department of Biology, January 2010 to February 2012.

*I.D.A. Center for Communications Research, Princeton, NJ*

Adjunct Research Staff, January 2005 to August 2014.

Research Staff, July 1997 to January 2005.

*Wesleyan University, Middletown, CT*

Visiting Assistant Professor of Mathematics, September 1996 to June 1997.

*I.D.A. Center for Communications Research, Princeton, NJ*

Research Staff, January 1996 to August 1996.

*Virginia Polytechnic Institute & State University, Blacksburg, VA*

Assistant Professor of Mathematics, January 1995 to August 1996.

*Mathematical Sciences Institute of Cornell University, Ithaca, NY*

Visiting Fellow, September 1994 to January 1995.

*I.D.A. Center for Communications Research, Princeton, NJ*

Research Staff, September 1993 to August 1994.

*Hokkaido University, Sapporo, Japan*

Postdoctoral Fellow, August 1992 to August 1993.

*I.D.A. Center for Communications Research, Princeton, NJ*

Research Staff, Summer 1992.

*Massachusetts Institute of Technology, Cambridge, MA*

Teaching Assistant and Recitation Instructor, Spring 1991 and 1992.

Lecturer, Summer Session on Linear Algebra, 1991.

Organizer, Seminar on Combinatorics and Topology, summer 1989.

*Harvard University Division of Applied Sciences, Cambridge, MA*

Recitation Instructor, Spring 1986.

- Conference Talks**
- Research Institute for the Mathematical Sciences, Kyoto, Japan, June 1993.*  
Conference on Modern Aspects of Combinatorial Structure of Convex Polytopes.
  - A.M.S. Regional Conference, Brooklyn, New York, April 1994.*  
Special Session on Discrete Geometry.
  - Caribbean Mathematics Foundation Conference Series, June 1994.*  
Conference on Invariant Methods and Discrete & Computational Geometry.
  - Mathematisches Forschungsinstitut Oberwolfach, Germany, February 1995.*  
Conference on Algebraic and Geometric Combinatorics.
  - A.M.S. Regional Conference, Greensboro, North Carolina, November 1995.*  
Special Session on Algebraic Combinatorics and Young Tableaux.
  - A.M.S. Meeting, Orlando, FL, January 1996.*  
Special Session on Algebraic Combinatorics.
  - Nankai University, Tianjin, China, June 1996.*  
International Conference on Combinatorics.
  - Hebrew Univeristy of Jerusalem, Jerusalem, Israel, December 1996.*  
Conference on Algebraic and Geometric Combinatorics.
  - I.D.A. Center for Communications Research, May 1994 to September 2004*  
Internal conferences.

## Papers

- Plane Trees and H-vectors of Shellable Cubical Complexes*  
SIAM Journal of Discrete Mathematics (1991), Vol. 4, No. 4, 568-574.
- On Subdivisions of Simplicial Complexes: Characterizing Local H-vectors*  
Journal of Discrete & Computational Geometry (1994), Vol. 11, 465-476.
- A Survey of H-vectors and Local H-vectors*  
Kyoto University R.I.M.S. Kokyuroku (1994), Vol. 857, 81-98.
- Kruskal-Katona for Some Cubical Complexes (with L. Billera and N. Liu)*  
Mathematical Sciences Institute of Cornell University Technical Document (1994).
- Buchsbaum and Eulerian Complexes (with D. Jungreis and R. Stong)*  
Journal of Pure & Applied Algebra (1995), Vol. 98, 7-13.
- Depths and Betti Numbers of Homology Manifolds (with D. Jungreis and R. Stong)*  
Kluwer Proceedings Series, ed. N. White.(1995)
- Neighborly Cubics and a Cubical Lower Bound Conjecture (with E. Babson and L. Billera)*  
Israel Journal of Mathematics (1997), Vol. 102, 297-315.
- Flag Complexes, Labelled Rooted Plane Trees, and Cubical Complexes (with L.J.Billera and N. Liu)*  
Contemporary Mathematics (1999), Vol. 223, 91-102.
- On the Volume of the Polytope of Doubly Stochastic Matrices (with D. Robbins)*  
Experimental Mathematics (1999), Vol. 8, No. 3, 291-300.
- Counting Faces of Cubical Spheres Modulo 2 (with E. Babson)*  
Discrete Mathematics (2000), Vol. 212, No. 3, 169-183.
- On the Volume of a Certain Polytope (with D. Robbins and D. Yuen)*  
Experimental Mathematics (2000), Vol. 9, No. 1, 91-99.
- On the Expected Value of the Minimum Assignment (with M. Buck and D. Robbins)*  
Random Structures & Algorithms (2002), Vol. 21, No. 1, 33-58.
- David P. Robbins (1942-2003) (with D. Lieberman, L. Neuwirth, A. Richter, and D. Robbins)*  
Advances in Applied Mathematics (2005), Vol. 34, No. 4, 647-653.
- Colored Quasiforests and Graphical Degree Sequences*  
European Journal of Combinatorics, pending revision.
- 32 internal papers (with various coauthors at I.D.A. C.C.R.)*  
I.D.A. Center for Communications Research, August 1992 to January 2005.
- Mec1 is one of multiple kinases that prime the Mcm2-7 helicase for phosphorylation by Cdc7 (with J.Randell, A. Fan, L. Francis, R. Heller, K. Galani and S. Bell)*  
Molecular Cell (Nov. 2010), Vol. 40, 353-363.
- Origin-Dependent DNA Replication in vitro: Insights into DDK and S-CDK function and Replisome Assembly (with R. Heller, S. Kang, W. Lam, S. Chen, and S. Bell)*  
Cell (July 2011), Vol. 146, No. 1, 80-91.
- Evidence of Abundant Stop Codon Readthrough in Drosophila and other Metazoa (with I. Jungreis, M. Lin, R. Spokony, N. Negre, A. Victorsen, K. White, and M. Kellis)*  
Genome Res. (Dec. 2011), Vol. 21, No. 12: 2096-2113
- Separation of DNA Replication from the Assembly of Break-Competent Meiotic Chromosomes (with H. Blitzblau, A. Hochwagen, and S. Bell)*  
PLoS Genetics (2012), Vol. 8, No. 5, e1002643
- Heterologous Stop Codon Readthrough of Metazoan Readthrough Candidates in Yeast (with I. Jungreis and M. Kellis)*  
PLoS ONE (2013), Vol. 8, No. 3, e59450
- Highly evolvable malaria vectors: The genomes of 16 Anopheles mosquitoes (with D. Neafsey and R. Waterhouse et al)*  
Science (Nov. 2014), doi: 10.1126/science.1258522

