

# CLARA S. CHAN

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## EDUCATION

- Coursework in Biology and Computational Biology (2007-2009), MIT.
- Ph.D. (1992) Mathematics, MIT.  
Dissertation: *On Shellings and Subdivisions of Convex Polytopes*.  
Advisor: Richard P. Stanley
- M.A. (1988) Mathematics, University of Chicago.
- A.B. (1987) *magna cum laude*, Phi Beta Kappa, Harvard University.

## ACADEMIC EMPLOYMENT

- 2025–present: **Associate Teaching Professor**, Department of Mathematics, Wellesley College.
- 2019–2024: **Lecturer**, Department of Mathematics, Wellesley College.
- 2015–2018: **Visiting Lecturer**, Department of Mathematics, Wellesley College.
- 2013–2018: **Research Affiliate**, Broad Institute and CSAIL, MIT.
- 2010-2012: **Research Scientist**, Department of Biology, MIT.
- 2005–2014: **Adjunct Research Staff**, I.D.A. Center for Communications Research, Princeton, NJ.
- 1997–2005: **Research Staff**, I.D.A. Center for Communications Research, Princeton, NJ.
- 1996-1997: **Visiting Assistant Professor**, Department of Mathematics, Wesleyan University.
- 1996: **Research Staff**, I.D.A. Center for Communications Research, Princeton, NJ.
- 1995-1996: **Assistant Professor**, Department of Mathematics, Virginia Polytechnic Institute.
- Fall 1994: **Visiting Fellow**, Mathematical Sciences Institute of Cornell University.
- 1993-1994: **Research Staff**, I.D.A. Center for Communications Research, Princeton, NJ.
- 1992-1993: **Postdoctoral Fellow**, Department of Mathematics, Hokkaido University, Sapporo, Japan.

## RESEARCH INTERESTS

- Combinatorics
- Convex Geometry
- Cryptology
- Computational Biology

- Biology

## RESEARCH PUBLICATIONS

- *Plane Trees and H-vectors of Shellable Cubical Complexes*, SIAM Journal of Discrete Mathematics, **4** (1991), no. 4, 568-574.
- *On Subdivisions of Simplicial Complexes: Characterizing Local H-vectors*, Journal of Discrete & Computational Geometry, **11** (1994), 465-476.
- *A Survey of H-vectors and Local H-vectors*, Kyoto University R.I.M.S. Kokyuroku, **857** (1994), 81-98.
- *Kruskal-Katona for Some Cubical Complexes*, Mathematical Sciences Institute of Cornell University Technical Document (1994). *Joint with L. Billera and N. Liu.*
- *Buchsbaum and Eulerian Complexes* Journal of Pure & Applied Algebra, **98** (1995), 7-13. *Joint with D. Jungreis and R. Stong.*
- *Depths and Betti Numbers of Homology Manifolds* Kluwer Proceedings Series (1995), ed. N. White. *Joint with D. Jungreis and R. Stong.*
- *Neighborly Cubics and a Cubical Lower Bound Conjecture* Israel Journal of Mathematics, **102** (1997), 297-315. *Joint with E. Babson and L. Billera.*
- *Flag Complexes, Labelled Rooted Plane Trees, and Cubical Complexes* Contemporary Mathematics, **223** (1999), 91-102. *Joint with L.J.Billera and N. Liu.*
- *On the Volume of the Polytope of Doubly Stochastic Matrices* Experimental Mathematics, **8** (1999), no. 3, 291-300. *Joint with D. Robbins.*
- *Counting Faces of Cubical Spheres Modulo 2* Discrete Mathematics, **212** (2000), no. 3, 169-183. *Joint with E. Babson.*
- *On the Volume of a Certain Polytope* Experimental Mathematics, **9** (2000), no. 1, 91-99. *Joint with D. Robbins and D. Yuen.*
- *On the Expected Value of the Minimum Assignment* Random Structures & Algorithms, **21** (2002), no. 1, 33-58. *Joint with M. Buck and D. Robbins.*
- *David P. Robbins (1942-2003)* Advances in Applied Mathematics, **34** (2005), no. 4, 647-653. *Joint with D. Lieberman, L. Neuwirth, A. Richter, and D. Robbins.*
- *Colored Quasiforests and Graphical Degree Sequences* European Journal of Combinatorics, pending revision.
- *32 internal papers* I.D.A. Center for Communications Research (1992–2005). *Joint with various coauthors at I.D.A. C.C.R.)*
- *Mec1 is one of multiple kinases that prime the Mcm2-7 helicase for phosphorylation by Cdc7* Molecular Cell, **40** (Nov. 2010), 353-363. *Joint with J.Randell, A. Fan, L. Francis, R. Heller, K. Galani and S. Bell.*
- *Origin-Dependent DNA Replication in vitro: Insights into DDK and S-CDK function and Replisome Assembly* Cell, **146** (July 2011), no. 1, 80-91. *Joint with R. Heller, S. Kang, W. Lam, S. Chen, and S. Bell.*

- *Evidence of Abundant Stop Codon Readthrough in Drosophila and other Metazoa* Genome Research, **21** (Dec. 2011), no. 12, 2096-2113. Joint with I. Jungreis, M. Lin, R. Spokony, N. Negre, A. Victorson, K. White, and M. Kellis.
- *Separation of DNA Replication from the Assembly of Break-Competent Meiotic Chromosomes* PLoS Genetics, **8** (2012), no. 5, e1002643. Joint with H. Blitzblau, A. Hochwagen, and S. Bell.
- *Heterologous Stop Codon Readthrough of Metazoan Readthrough Candidates in Yeast* PLoS ONE, **8** (2013), no. 3, e59450. Joint with I. Jungreis and M. Kellis.
- *Highly evolvable malaria vectors: The genomes of 16 Anopheles mosquitoes* Science, **347** (Jan. 2015), no. 6217, 1258522. Joint with D. Neafsey and R. Waterhouse et al.
- *Evolutionary Dynamics of Abundant Stop Codon Readthrough* Molecular Biology and Evolution, **33** (Dec. 2016), no. 12, 3108-3132. Joint with I. Jungreis, R. Waterhouse, G. Fields, M. Lin, and M. Kellis.

## AWARDS

- 1995–1998: National Science Foundation Career Grant.
- 1994–1995: National Science Foundation Research Planning Grant.
- 1994–1995: Mathematical Association of America Project NExT Fellowship.
- 1992–1993: Japan Society for Promotion of Science Postdoctoral Fellowship.
- 1987–1990: Office of Naval Research Graduate Fellowship.

## CONFERENCE TALKS

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