

Current positions	<p>CARNEGIE MELLON UNIVERSITY, Pittsburgh, Pennsylvania Associate Professor of Mathematics, 2015–present; Asst. Professor, 2010–2015</p> <p>MATHEMATICAL ASSOCIATION OF AMERICA, Washington, D.C. Leader (National Coach), USA International Math Olympiad Team, 2013–present Assistant (2002, 2003); Instructor (2008, 2009); Deputy Leader (2004, 2010–2013)</p> <p>EXPII, INC., Pittsburgh, Pennsylvania Founder and CEO, 2014–present</p>
Previous positions	<p>MICROSOFT RESEARCH, Seattle, Washington Research Intern, Summer 2009</p> <p>THE D.E. SHAW GROUP, New York, New York Quantitative Analyst Intern, Summers 2005 and 2007</p>
Education	<p>PRINCETON UNIVERSITY, Princeton, New Jersey Ph.D., Mathematics, 2010</p> <p>CAMBRIDGE UNIVERSITY, Cambridge, United Kingdom Master of Advanced Study in Mathematics with Distinction, 2005</p> <p>CALIFORNIA INSTITUTE OF TECHNOLOGY, Pasadena, California Bachelor of Science with Honor, Mathematics, 2004; GPA 4.3/4.3, class rank 1</p>
Awards, fellowships, and grants	<p>Coach, 2-time winning Int'l Math Olympiad team (2015, 2016); last USA win 1994 NSF CAREER Grant DMS-1455125, Extremal Combinatorics (2015–2020) E-Learning Bronze Award (ExpII), 2016 QS Reimagine Education Awards Finalist (ExpII), 2016 SXSWedu Startup Competition Pittsburgh 40 under 40, Pittsburgh Magazine (2017) Julius Ashkin Teaching Award, Carnegie Mellon University (2016) ExpII grants: Overdeck Family Fndn. and Templeton World Charity Fndn. (2016) NSF Grant DMS-1201380, Extremal Combinatorics (2012–2015) Coach, CMU Putnam math team rank #2,5,2,5,2,1,6 (2011–2017); last top-5 in 1987 NSA Young Investigators Grant (2011–2012) USA-Israel Binational Science Foundation Grant (2011–2015) NSF Infrastructure Grant for USA Math Olympiad Program (2010–2013) Fannie and John Hertz Foundation Graduate Fellowship (2005–2010) NSF Graduate Research Fellowship (2006–2009) Winston Churchill Foundation Scholarship (2004–2005) for study at Cambridge 16th and 18th places, 2002 and 2003 Putnam Mathematical Competitions 7th place team (out of 3,150), 2004 ACM Int'l Colleg. Programming Contest Silver medal, 1999 Int'l Math Olympiad / 3rd place, 1996 Nat'l MathCounts Nat'l Olympiad training camp qual. in 3 subjects (math, computing, chemistry).</p>

Patent applications	<p>P. Loh, L. Hamilton, and R. Li, Adaptive learning system using automatically-rated problems and pupils, <i>U.S. Patent App. #15/435930</i>, filed Feb. 17, 2017</p> <p>E. Lubetzky, Y. Peres, D. Malkhi, P. Loh, Distributed stochastic clustering for automated formation of connected networks of agents, <i>U.S. Patent App. #13/347,674</i>, filed Jan. 10, 2012</p>
Research focus	Advance theoretical understanding of combinatorics, probability, and algorithms, while practically implementing, commercializing, and scaling real-world applications
Selected publications	<p>P. Loh and J. Ma, Diameter critical graphs, <i>Journal of Combinatorial Theory Series B</i> 117 (2016), 34–58</p> <p>M. Lavrov and P. Loh, Hamiltonian increasing paths in random edge orderings, <i>Random Structures and Algorithms</i> 48 (2016), 588–611</p> <p>J. Fox, P. Loh, and Y. Zhao, The critical window for the classical Ramsey-Turán problem, <i>Combinatorica</i> 35 (2015), 435–476</p> <p>W. Gan, P. Loh, and B. Sudakov, Maximizing the number of independent sets of a fixed size, <i>Combinatorics, Probability and Computing</i> 24 (2015), 521–527</p> <p>P. Loh and E. Lubetzky, Stochastic coalescence in logarithmic time, <i>Annals of Applied Probability</i> 23 (2013), 492–528</p>
Selected research talks	<p>Stanford Mathematics Department Colloquium, <i>Directed paths: from Ramsey to Ruzsa and Szemerédi</i> (2016)</p> <p>National Institutes of Health Frontiers in Data Science Lecture Series (talk joint with National Science Foundation), <i>World-Scale Personalized Learning through Crowdsourcing and Algorithms</i> (2016)</p> <p>International Congress of Mathematicians 2014 Satellite Conference on Extremal and Structural Graph Theory (Gyeongju, Korea), <i>Diameter critical graphs</i> (2014)</p> <p>Clay Mathematics Institute Workshop on Extremal and Probabilistic Combinatorics (Oxford, UK), <i>Hamiltonian increasing paths in random edge orderings</i> (2014)</p> <p>ACM-SIAM Symposium on Discrete Algorithms (Kyoto, Japan), <i>Stochastic coalescence in logarithmic time</i> (2012)</p>
Select media coverage	<p>In 2016, contributed 4 puzzles published in <i>The New York Times</i> “Numberplay,” 3 in <i>FiveThirtyEight</i> “Riddler,” and 1 in <i>The Wall Street Journal</i> “Varsity Math” nyti.ms/2k01LMk nyti.ms/2k4n9md nyti.ms/2k4AivB nyti.ms/2k5n01W 53eig.ht/211CTwA 53eig.ht/2aMQR7j 53eig.ht/2ijvLLM on.wsj.com/1Q4czFi</p> <p>Promoted math through interviews with international press after USA team won International Math Olympiad in 2015 and 2016. Featured on <i>CBS Weekend News</i>, quoted in <i>Washington Post</i>, <i>NPR</i>, <i>The Atlantic</i>, <i>China Newsweek</i>, etc. Selected:</p>

cbsnews.com/news/americas-best-young-math-minds-compete-in-rio
wpo.st/EMFZ2 wpo.st/ZJzZ2 n.pr/1TIURr3 53eig.ht/2bSSfbu
theatlantic.com/magazine/archive/2016/03/the-math-revolution/426855
lat.ms/1fE20y0 str.sg/Ze6V news.inewsweek.cn/detail-2135.html

YouTube video “The Most Beautiful Equation in Math” with over 2 million views, 3rd highest in Carnegie Mellon University channel. youtu.be/IUTGFQpKaPU

Created interactive site for weekly creative math puzzles expii.com/solve, which was used for collaboration with film *The Man Who Knew Infinity* to run first phase of new global search for undiscovered math talent. Appeared in *The Hindu*.

ifcfilms.com/films/the-man-who-knew-infinity

thehindu.com/features/education/spirit-of-ramanujan-math-talent-initiative/article8630088.ece

Math consultant quoted about basketball free throws s.cleveland.com/0lHF13J and Pi Day n.pr/1MwveW0

Selected general talks

National Museum of Mathematics (New York), Math Encounters Public Lecture, *Massive Numbers, from the International Mathematical Olympiad* (2015)

Commencement Address, Chinese International School (Hong Kong), *Mathematics and Impact* (2017)

Bangladesh Mathematical Olympiad (Dhaka, Bangladesh), public lecture for math students and entrepreneurs, *Math and Creativity; Entrepreneurship* (2016)

SXSWedu Conference & Festival (Austin), Launch Startup Competition Finalist Pitch, *Personal Learning* (2016)

Coolidge Corner Theatre and Sloan Foundation Science on Screen lecture in conjunction with screening of *The Man Who Knew Infinity*, Pittsburgh Filmmakers / Regent Square Theater (Pittsburgh), *Intuition, Paradoxes, and Proof* (2016)

Advisory / committees

Association for Women in Mathematics Advisory Board (2016–present)

Fannie and John Hertz Foundation Fellowship Interviewer (2016–present), and Program Committee (2017–present)

New York Academy of Sciences Global STEM Alliance, STEM Education Framework Advisory Board (2016–present)

Association for Computing Machinery International Collegiate Programming Competition Industry Advisory Board (2017–present)

Mathematical Association of America Second Century Campaign Steering Committee (2015–2016)