

# Tim Randolph

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**Research**      Exact algorithms, parameterized complexity, graph theory, combinatorics, probability.

**Interests**

**Education**      Columbia University, New York, NY.      2018-Present  
PhD in Computer Science Theory.  
Advised by Professors Rocco Servedio and Xi Chen.

Columbia University, New York, NY.      2018-2019  
MS in Computer Science.

Williams College, Williamstown, MA.      2014-2018  
B.A. Computer Science with Highest Honors, Mathematics with Honors,  
Philosophy. Concentration in Cognitive Science. (Magna Cum Laude.)  
Thesis:  $(k, p)$ -Planar Graphs. Advised by Professor William Lenhart.  
GPA: 3.96. GRE: 170vb/170qt

**Publications**      Xi Chen, Yaonan Jin, Tim Randolph and Rocco Servedio. “Average-Case Subset Balancing Problems.” *SODA* 2022.

Nick Arnosti and Tim Randolph. “The Alaskan Hunting License Lottery is Flexible and Approximately Efficient.” *Management Science* 2021; *EC* 2021.

Xi Chen, Tim Randolph, Rocco Servedio, and Tim Sun. “A Lower Bound on Cycle Finding in Sparse Digraphs.” *SODA* 2020.

Emilio di Giacomo, William J. Lenhart, Giuseppe Liotta, Timothy W. Randolph, Alessandra Tappini. “ $(k, p)$ -Planarity: A Relaxation of Hybrid Planarity.” arXiv:1806.11413v2. *WALCOM* 2019.

Timothy W. Randolph. “Tight Bounds for  $(t, 2)$  Broadcast Domination on Finite Grids.” arXiv:1805.06058. *Rose-Hulman Undergraduate Mathematics Journal* 20, 2019.

Benjamin F. Drews, Pamela E. Harris, Timothy W. Randolph. “Optimal  $(t, r)$  Broadcasts on the Infinite Grid.” arXiv:1711.11116. *Discrete Applied Mathematics* 255, 2018.

Research Presentations

“Parallel Lotteries: Insights from Alaskan Hunting Permit Allocation,”  
22nd Conference on Economics and Computation (EC '21), Virtual, 7/21/21.

“Alaskan Hunting License Lotteries are Flexible & Approximately Efficient,”  
DSI Financial and Business Analytics Center, New York, NY, 11/12/2019;  
also WINE 2019, Columbia University, New York, NY, 12/10/2019.

“The Case for Wasteful Allocation Mechanisms,” INFORMS Workshop on  
Market Design, Phoenix, AZ, 6/28/2019.

“ $k$ -Ticket Lotteries: Insights From Alaska,” 3rd Workshop on Mechanism  
Design for Social Good, Phoenix, AZ, 6/28/2019.

“ $(k,p)$ -planar Drawings of Cluster Graphs,” Williams College Summer Science  
Expo, Williamstown, MA, 8/11/2017.

“Automated Constraint Pattern Extraction,” Microsoft Bing Intern Summary  
Presentation, Seattle, WA, 8/17/2016.

Teaching

Instructor for COMS W3261: Computer Science Theory, Columbia University.  
Summer 2021.

Guest lecture in CSCI 4236: Computational Complexity, Columbia University.  
11/1/2019.

Substitute for CSOR 4231: Analysis of Algorithms. Columbia University.  
10/24/2019.

TA for COMS 4231: Analysis of Algorithms, Columbia University. 2019.

Innovative Teaching Summer Institute (ITSI) Certification. 2019.

TA for COMS 6998-06: Computation and Brain, Columbia University. 2018.

TA for COMS 3261: Computer Science Theory, Columbia University. 2019.

Service

PhD Coordinator, CUCS Emerging Scholars Program. 2019-Present.  
 Organized ESP, a peer-taught, discussion-based seminar focused on group problem-solving and exposing students to the breadth of computer science. Developed new initiatives and curriculum to engage underrepresented groups and nontraditional students in computer science at Columbia. Quadrupled program size.

Organizer, Pre-Submission Application Review Program 2020-Present.  
 Helped create, implement and review applications for Columbia's first STEM PhD application feedback program.

Organizer, Columbia Grad Student Theory Retreat 2019-Present.  
 Created Columbia's first annual theory retreat for graduate students.

Speaker, Columbia "Demystifying the Dissertation" Initiative 2020-2021.  
 Lead seminars about pursuing and applying to graduate school.

Awards

Columbia CS Department Service Award, 2020 and 2021

Sam Goldberg Prize  
 Awarded for the best colloquium in Computer Science at Williams College.

Sigma Xi

Phi Beta Kappa (Junior Year)  
 Awarded to students in the top 5% of graduating class by GPA.

Williams Class of 1960s Scholar in Computer Science (2x)  
 Awarded to exceptional students endorsed by the department for academic careers.

Williams Class of 1960s Scholar in Cognitive Science  
 Awarded to exceptional students endorsed by the department for academic careers.

Interests

Trail running, books, yoga, travel, maps, drawing, mountains.