

# Ziv Scully

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## Academic Appointments

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<b>Cornell University</b> , <i>Assistant Professor, ORIE</i>	Ithaca, NY, <i>2023–present</i>
<b>Massachusetts Institute of Technology</b> , <i>Postdoctoral Fellow</i>	Cambridge, MA, <i>Spring 2023</i>
<b>Harvard University</b> , <i>Postdoctoral Fellow</i>	Berkeley, CA, <i>Spring 2023</i>
<b>University of California, Berkeley</b> , <i>Postdoctoral Fellow</i>	Pittsburgh, PA, <i>Fall 2022</i>

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## Education

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<b>Carnegie Mellon University</b> , <i>PhD and MS, Computer Science</i>	Pittsburgh, PA, <i>2016–2022</i>
<b>Massachusetts Institute of Technology</b> , <i>BS, Math with Computer Science</i>	Cambridge, MA, <i>2012–2016</i>
<b>Brookline High School</b>	Brookline, MA, <i>2008–2012</i>

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## Research Experience

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**MIT CSAIL and Harvard SEAS**, *Postdoctoral Fellow* Cambridge, MA, *Spring 2023*  
MENTORS: Piotr Indyk (MIT) and Michael Mitzenmacher (Harvard).  
Recipient of a FODSI (Foundations Of Data Science Institute) postdoctoral fellowship.

**UC Berkeley Simons Institute**, *Postdoctoral Fellow* Berkeley, CA, *Fall 2022*  
MENTOR: Ola Svensson.  
Participant in the *Data-Driven Decision Processes* program.

**Carnegie Mellon University**, *Graduate Research Assistant* Pittsburgh, PA, *2016–2022*  
ADVISORS: Mor Harchol-Balter and Guy Blelloch.  
THESIS: *A New Toolbox for Scheduling Theory*, CMU-CS-22-132.  
Research in queueing theory, resource allocation, and scheduling. Interests include scheduling algorithms for complex jobs with multiple tasks and performance analysis of complex scheduling policies.

**IBM Research**, *Research Intern* Yorktown Heights, NY, *Summer 2019*  
MENTORS: Mark Squillante and Soumyadip Ghosh.  
As part of the Mathematics of AI team, researched queueing and scheduling problems from the perspectives of learning theory and distributionally robust optimization.

**Harvard Medical School**, *Research Intern* Boston, MA, *Summer 2016*  
MENTOR: Walter Fontana.  
Researched dynamic connectivity algorithms for KaSim, a simulator for protein interaction networks.

**MIT CSAIL**, *Undergraduate Researcher* Cambridge, MA, *2014–2016*  
ADVISOR: Adam Chlipala.  
Worked on Ur/Web, a pure functional programming language for web applications. Built a compiler optimization that automatically finds opportunities for caching SQL-query-backed output and implements both caching and corresponding cache invalidation.

**MIT PRIMES**, *Math Research Student* Cambridge, MA, *2011–2012*  
Researched a discrete nonlinear dynamical system (2011) and matrix determinant algorithms for computer algebra (2012) in MIT PRIMES, a program to introduce high school students to math and science research.

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## Teaching Experience

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**Carnegie Mellon University, Instructor** Pittsburgh, PA, *Fall 2021*

Taught inaugural session of CMU 15-920, a half-semester course on diversity, equity, and inclusion (DEI) through the lens of computer science academia. Course was developed by a team of computer science PhD students, including myself, specifically for fellow computer science PhD students.

**Carnegie Mellon University, Teaching Assistant** Pittsburgh, PA, *Fall 2017 and Spring 2020*

Led recitations, designed new course material, held office hours, and graded for CMU 15-857, Analytical Performance Modeling (Fall 2017). Led course administration, held office hours, and graded for CMU 15-455, Undergraduate Complexity Theory (Spring 2020).

**MIT Educational Studies Program, AP Physics C Teacher** Cambridge, MA, *2014–2015*

Together with coteacher Matthew DeCross, designed a curriculum and taught weekly classes to local high school students in preparation for the Physics C Advanced Placement exam.

**Massachusetts Institute of Technology, Lab Assistant** Cambridge, MA, *Spring 2013*

Helped answer students' questions during twice-weekly lab sessions of MIT 6.01, a lab-based introduction to electrical engineering and computer science.

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## Industry Experience

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**NOVID (Expai, Inc.), Algorithms Consultant** Pittsburgh, PA, *Winter 2020*

NOVID is a smartphone-based exposure notification and pre-exposure notification app developed to fight COVID-19. Led a project to help NOVID catch potential exposures from prolonged but distant contact between individuals in the same room.

**Intentional Software Corporation, Software Developer Intern** Bellevue, WA, *Summer 2015*

Became proficient with Intentional's unique application platform and wrote product code using it, both individually and as part of a six-person team.

**Bridgewater Associates, Technology Associate Intern** Westport, CT, *Summer 2014*

Completed a project in the trading department on a team with two other interns. Gained experience with machine learning and Hadoop.

**TripAdvisor, Software Engineering Intern** Newton, MA, *Summer 2013*

Built customer-facing web pages, developed internal tools for customer service, and fixed a myriad of bugs as part of the Vacation Rentals team.

### Programming Language Skills

PROFICIENT: Haskell, Standard ML, C, Java, C#, Python, Mathematica, Ur/Web.

FAMILIAR: MIT Scheme, C++, OCaml, JavaScript, 8051 assembly, Bluespec SystemVerilog, Rust, and others.

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## Awards

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**2022 SIGMETRICS Doctoral Dissertation Award, Winner** November 2022

**2022 CMU SCS Distinguished Dissertation Award, Honorable Mention** November 2022

**INFORMS George Nicholson Student Paper Competition, Winner** October 2022

**SIGMETRICS 2021 Best Paper Award, Winner** June 2021

**STOC 2021 TheoryFest, Featured Paper** June 2021

<b>SIGMETRICS 2020 Best Video Award, Winner</b>	<i>June 2020</i>
<b>SIGMETRICS 2019 Outstanding Student Paper Award, Winner</b>	<i>June 2019</i>
<b>Performance 2018 Best Student Paper Award, Winner</b>	<i>December 2018</i>
<b>INFORMS Applied Probability Society Best Student Paper Prize, Finalist</b>	<i>November 2018</i>
<b>National Science Foundation Graduate Fellowship Program, Awardee</b>	<i>2016–2019</i>
<b>ARCS Foundation Scholarship, Recipient</b>	<i>2016–2019</i>
<b>PLDI 2016 Student Research Competition, Undergraduate Third Place</b>	<i>June 2016</i>
<b>National Merit Scholarship Program, Finalist</b>	<i>February 2012</i>
<b>Intel Science Talent Search, Semifinalist</b>	<i>January 2012</i>
<b>Siemens Competition, Regional Semifinalist</b>	<i>October 2011</i>

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## Awards Won by Advised Students

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**SIGMETRICS 2021 Student Research Competition, Undergraduate Winner: Edwin Peng** *June 2021*

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## Publications

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### **Performance of the Gittins Policy in the G/G/1 and G/G/k, With and Without Setup Times**

Y. Hong and Z. Scully (2023).

In *Proceedings of the ACM Workshop on Mathematical Performance Modeling and Analysis (MAMA 2023)*, June 2023, Orlando, FL.

### **Reducing Heavy-Traffic Response Time with Asymmetric Dispatching**

R. Xie and Z. Scully (2023).

In *Proceedings of the ACM Workshop on Mathematical Performance Modeling and Analysis (MAMA 2023)*, June 2023, Orlando, FL.

### **Optimal Scheduling in the Multiserver-job Model under Heavy Traffic**

I. Grosf, Z. Scully, M. Harchol-Balter, A. Scheller-Wolf (2022).

*Proceedings of the ACM on Measurement and Analysis of Computing Systems*, 6(3), 51.

SHORT VERSION: *Abstracts of the 2023 ACM International Conference on Measurement and Modeling of Computer Systems (SIGMETRICS 2023)*, June 2023, Orlando, FL.

### **A New Toolbox for Scheduling Theory**

Z. Scully (2022).

PhD Dissertation. *Computer Science Technical Report Collection*, CMU-CS-22-132. Carnegie Mellon University.

AWARD: 2022 SIGMETRICS Doctoral Dissertation Award.

AWARD: 2022 CMU SCS Distinguished Dissertation Award honorable mention.

### **On the Gittins Index for Multistage Jobs**

S. Aalto and Z. Scully (2022).

*Queueing Systems*.

### **Uniform Bounds for Scheduling with Job Size Estimates**

Z. Scully, I. Grosf, and M. Mitzenmacher (2022).

In *13th Innovations in Theoretical Computer Science Conference (ITCS 2022)*, January 2022, Berkeley, CA, USA (virtual).

### **The Most Common Queueing Theory Questions Asked by Computer Systems Practitioners**

M. Harchol-Balter and Z. Scully (2021).

In *First International Workshop on Teaching Performance Analysis of Computer Systems* (TeaPACS 2021). November 2021, Milan, Italy (virtual).

### **The Gittins Policy in the M/G/1 Queue**

Z. Scully and M. Harchol-Balter (2021).

In *19th International Symposium on Modeling and Optimization in Mobile, Ad Hoc, and Wireless Networks* (WiOpt 2021). October 2021, Philadelphia, PA, USA (virtual).

### **Bounding Mean Slowdown in Multiserver Systems**

Z. Scully (2021).

In *Proceedings of the ACM Workshop on Mathematical Performance Modeling and Analysis* (MAMA 2021). June 2021, Beijing, China (virtual).

### **When Does the Gittins Policy Have Asymptotically Optimal Response Time Tail?**

Z. Scully and L. van Kreveld (2021).

In *Proceedings of the ACM Workshop on Mathematical Performance Modeling and Analysis* (MAMA 2021). June 2021, Beijing, China (virtual).

### **Nudge: Stochastically Improving upon FCFS**

I. Grosf, K. Yang, Z. Scully, and M. Harchol-Balter (2021).

*Proceedings of the ACM on Measurement and Analysis of Computing Systems*, 5(2), 21.

AWARD: SIGMETRICS 2021 Best Paper Award.

SHORT VERSION: *Abstracts of the 2021 ACM International Conference on Measurement and Modeling of Computer Systems* (SIGMETRICS 2021). June 2021, Beijing, China (virtual).

### **The Gittins Policy Is Nearly Optimal in the M/G/k under Extremely General Conditions**

Z. Scully, I. Grosf, and M. Harchol-Balter (2020).

*Proceedings of the ACM on Measurement and Analysis of Computing Systems*, 4(3), 43.

AWARD: 2022 INFORMS George Nicholson Student Paper Competition winner.

SHORT VERSION: *Abstracts of the 2021 ACM International Conference on Measurement and Modeling of Computer Systems* (SIGMETRICS 2021). June 2021, Beijing, China (virtual).

### **Optimal Multiserver Scheduling with Unknown Job Sizes in Heavy Traffic**

Z. Scully, I. Grosf, and M. Harchol-Balter (2020).

In *Proceedings of the 38th International Symposium on Computer Performance, Modeling, Measurements and Evaluation* (Performance 2020). November 2020, Milan, Italy (virtual).

SHORT VERSION: In *Proceedings of the ACM Workshop on Mathematical Performance Modeling and Analysis* (MAMA 2020). June 2020, Boston, MA, USA (virtual).

### **Characterizing Policies with Optimal Response Time Tails under Heavy-Tailed Job Sizes**

Z. Scully, L. van Kreveld, O. Boxma, J. Dorsman, and A. Wierman (2020).

*Proceedings of the ACM on Measurement and Analysis of Computing Systems*, 4(2), 30.

SHORT VERSION: *Abstracts of the 2020 ACM International Conference on Measurement and Modeling of Computer Systems* (SIGMETRICS 2020). June 2020, Boston, MA, USA (virtual).

### **Simple Near-Optimal Scheduling for the M/G/1**

Z. Scully, M. Harchol-Balter, and A. Scheller-Wolf (2020).

*Proceedings of the ACM on Measurement and Analysis of Computing Systems*, 4(1), 11.

AWARD: SIGMETRICS 2020 Best Video Award.

SHORT VERSION: *Abstracts of the 2020 ACM International Conference on Measurement and Modeling of Computer Systems* (SIGMETRICS 2020). June 2020, Boston, MA, USA (virtual).

SHORT VERSION: In *Proceedings of the ACM Workshop on Mathematical Performance Modeling and Analysis* (MAMA 2019). June 2019, Phoenix, AZ, USA.

### **Mean Field Analysis of Join-Below-Threshold Load Balancing for Resource Sharing Servers**

I. Horváth, Z. Scully, and B. Van Houdt (2019).

*Proceedings of the ACM on Measurement and Analysis of Computing Systems*, 3(3), 57.

SHORT VERSION: *Abstracts of the 2020 ACM International Conference on Measurement and Modeling of Computer Systems* (SIGMETRICS 2020). June 2020, Boston, MA, USA (virtual).

### **Unfair Scheduling Patterns in NUMA Architectures**

N. Ben-David, Z. Scully, and G. Blelloch (2019).

In *Proceedings of the 28th International Conference on Parallel Architectures and Compilation Techniques* (PACT 2019). September 2019, Seattle, WA, USA.

### **Open Problem—M/G/1 Scheduling with Preemption Delays**

Z. Scully (2019).

*Stochastic Systems*, 9(3), 311–312.

### **Load Balancing Guardrails: Keeping Your Heavy Traffic on the Road to Low Response Times**

I. Groszof, Z. Scully, and M. Harchol-Balter (2019).

*Proceedings of the ACM on Measurement and Analysis of Computing Systems*, 3(2), 42.

AWARD: SIGMETRICS 2019 Outstanding Student Paper Award.

AWARD: Featured at STOC 2021 TheoryFest.

SHORT VERSION: *Abstracts of the 2019 ACM International Conference on Measurement and Modeling of Computer Systems* (SIGMETRICS 2019). June 2019, Phoenix, AZ, USA.

### **The Markovian Price of Information**

A. Gupta, H. Jiang, Z. Scully, and S. Singla (2019). In *International Conference on Integer Programming and Combinatorial Optimization* (IPCO 2019). May 2019, Ann Arbor, MI, USA.

### **SRPT for Multiserver Systems**

I. Groszof, Z. Scully, and M. Harchol-Balter (2018).

In *Proceedings of the 36th International Symposium on Computer Performance, Modeling, Measurements and Evaluation* (Performance 2018). December 2018, Toulouse, France.

AWARD: Performance 2018 Best Student Paper Award.

SHORT VERSION: In *Proceedings of the ACM Workshop on Mathematical Performance Modeling and Analysis* (MAMA 2018). June 2018, Irvine, CA, USA.

### **Optimal Scheduling and Exact Response Time Analysis for Multistage Jobs**

Z. Scully, M. Harchol-Balter, and A. Scheller-Wolf (2018).

arXiv:1805.06865 [cs.PF].

### **SOAP Bubbles: Robust Scheduling under Adversarial Noise**

Z. Scully, M. Harchol-Balter (2018).

In *Proceedings of the 56th Allerton Conference on Communications, Control and Computing* (Allerton Conference 2018). October 2018, Monticello, IL, USA.

### **SOAP: One Clean Analysis of All Age-Based Scheduling Policies**

Z. Scully, M. Harchol-Balter, and A. Scheller-Wolf (2018).

*Proceedings of the ACM on Measurement and Analysis of Computing Systems*, 2(1), 16.

AWARD: INFORMS Applied Probability Society Best Student Paper Prize finalist.

SHORT VERSION: *Abstracts of the 2018 ACM International Conference on Measurement and Modeling of Computer Systems* (SIGMETRICS 2018). June 2018, Irvine, CA, USA.

### **Optimally Scheduling Jobs with Multiple Tasks**

Z. Scully, G. Blelloch, M. Harchol-Balter, and A. Scheller-Wolf (2017).

In *Proceedings of the ACM Workshop on Mathematical Performance Modeling and Analysis* (MAMA 2017). June 2017, Urbana, IL, USA.

### **A Program Optimization for Automatic Database Result Caching**

Z. Scully and A. Chlipala (2017).

In *Proceedings of the 44th ACM SIGPLAN-SIGACT Symposium on Principles of Programming Languages* (POPL 2017). January 2017, Paris, France.

### **Motors and Impossible Firing Patterns in the Parallel Chip-Firing Game**

T.-Y. Jiang, Z. Scully, and Y. X. Zhang (2015).

*SIAM Journal on Discrete Mathematics*, 29(1), 615–630.

SHORT VERSION: *DMTCS Proceedings*, vol. AT (FPSAC 2015), 537–548.

### **Efficient Calculation of Determinants of Symbolic Matrices with Many Variables**

T. Khovanova and Z. Scully (2013).

arXiv:1304.4691 [cs.SC].

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## **Academic Service**

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**ACM SIGMETRICS / IFIP Performance 2024 Program Committee**, *Member* August 2023–March 2024

**IFIP Performance 2023 Program Committee**, *Member* May–July 2023

**IFIP Performance 2021 Program Committee**, *Member* May–July 2021

**CMU CSD Diversity, Equity, and Inclusion Committee**, *Member* April 2021–August 2022

**CMU Scheduling and Queueing At LLunch (SQUALL)**, *Organizer* February 2021–August 2022

**CMU CSD Doctoral Review Committee**, *Member* January 2018–August 2022

**CMU CSD Admitted PhD Student Visit Day**, *Website Chair* 2018–2019

### **Reviewing**

ACM SIGMETRICS (PC member), ACM Transactions on Modeling and Computer Simulation, ACM Transactions on Modeling and Performance Evaluation of Computing Systems, Discrete Mathematics, EATCS ICALP, European Journal of Operational Research, FUN with Algorithms, IFIP Performance (PC member), Indagationes Mathematicae, INFORMS Journal on Computing, IEEE/ACM Transactions on Networking, Mathematics of Operations Research, Management Science, Omega, Operations Research, Operations Research Letters, Performance Evaluation, Queueing Systems, Stochastic Models.

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## **Student Advising**

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**Edwin Peng**, *CMU Undergraduate*

September 2019–May 2022

Worked on analyzing preemptive M/G/1 scheduling with preemption overhead. Won undergraduate division of SIGMETRICS 2021 Student Research Competition with submission titled “Exact Response Time Analysis of Preemptive Priority Scheduling with Switching Overhead”.

**Evan Wu**, *CMU Undergraduate*

May–September 2020

Worked on strengthening and extending the results of “Simple Near-Optimal Scheduling for the M/G/1”.

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## Conference and Workshop Presentations

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- 2023 INFORMS APS Conference**, *Invited talk* Nancy, France, *June 2023*  
TALK: “Performance of the Gittins Policy in the  $G/G/1$  and  $G/G/k$ , With and Without Setup Times”.
- TeaPACS at SIGMETRICS 2023**, *Invited talk* Orlando, FL, *June 2023*  
TALK: “The Role of Advanced Math in Teaching Performance Modeling”.
- LATA at SIGMETRICS 2023**, *Invited talk* Orlando, FL, *June 2023*  
TALK: “Uniform Bounds for Scheduling with Job Size Estimates”.
- 2023 Joint Mathematics Meetings**, *Invited talk* Boston, MA, *January 2023*  
TALK: “How Robust Is the Gittins Policy for Queue Scheduling?”
- 2022 INFORMS Annual Meeting**, *Invited talk* Indianapolis, IN, *October 2022*  
TALK: “The Gittins Policy is Nearly Optimal in the  $M/G/k$  under Extremely General Conditions”, in INFORMS George Nicholson Best Student Paper Competition award session.
- EURO 2022**, *Invited talk* Espoo, Finland, *July 2022*  
TALK: “The Gittins Policy in the  $M/G/1$  Queue”.
- 2022 CORS/INFORMS International**, *Two invited talks* Vancouver, BC, Canada, *June 2022*  
TALK 1: “Drifting Towards Progress in Multiserver Scheduling”.  
TALK 2: “WINE: A New Queueing Identity for Analyzing Scheduling Policies in Multiserver Systems”.
- ITCS 2022**, *Talk* Berkeley, CA (virtual), *January 2022*  
TALK: “Uniform Bounds for Scheduling with Job Size Estimates”.
- 2021 INFORMS Annual Meeting**, *Invited talk* Los Angeles, CA (virtual), *October 2021*  
TALK: “A New Queueing Identity with Applications to Multiserver Scheduling”.
- WiOpt 2021**, *Invited talk* Philadelphia, PA (virtual), *October 2021*  
TALK: “The Gittins Policy in the  $M/G/1$  Queue”.
- SIGMETRICS 2021**, *Tutorial and talk* Beijing, China (virtual), *June 2021*  
TUTORIAL: “Coupling Techniques for Complex Control Problems”, with Sid Banerjee.  
TALK: “The Gittins Policy is Nearly Optimal in the  $M/G/k$  under Extremely General Conditions”.
- MAMA at SIGMETRICS 2021**, *Talk* Beijing, China (virtual), *June 2021*  
TALK: “Bounding Mean Slowdown in Multiserver Systems”.
- Performance 2020**, *Talk* Milan, Italy (virtual), *November 2020*  
TALK: “Optimal Multiserver Scheduling with Unknown Job Sizes in Heavy Traffic”.
- SIGMETRICS 2020**, *Two talks* Boston, MA (virtual), *June 2020*  
TALK 1: “Simple Near-Optimal Scheduling for the  $M/G/1$ ”.  
TALK 2: “Characterizing Policies with Optimal Response Time Tails under Heavy-Tailed Job Sizes”.
- MAMA at SIGMETRICS 2020**, *Talk* Boston, MA (virtual), *June 2020*  
TALK: “Optimal Multiserver Scheduling with Unknown Job Sizes in Heavy Traffic”.
- 2019 INFORMS Annual Meeting**, *Invited talk* Seattle, WA, *October 2019*  
TALK: “Simple Near-Optimal Scheduling for the  $M/G/1$ ”.
- Cornell ORIE Young Researchers Workshop 2019**, *Invited talk* Ithaca, NY, *October 2019*  
TALK: “Simple Near-Optimal Scheduling for the  $M/G/1$ ”.

**PACT 2019, Talk** Seattle, WA, *September 2019*  
TALK: “Unfair Scheduling Patterns in NUMA Architectures”.

**SIGMETRICS 2019, Tutorial** Phoenix, AZ, *June 2019*  
TUTORIAL: “The Power of SOAP Scheduling”, with Mor Harchol-Balter.

**MAMA at SIGMETRICS 2019, Talk** Phoenix, AZ, *June 2019*  
TALK: “Simple Near-Optimal Scheduling for the M/G/1”.

**Young European Queueing Theorists 2018, Invited talk** Toulouse, France, *December 2018*  
TALK: “Optimal Scheduling and Exact Response Time Analysis for Multistage Jobs”.

**2018 INFORMS Annual Meeting, Three invited talks** Phoenix, AZ, *November 2018*  
TALK 1: “SOAP: One Clean Analysis of All Age-Based Scheduling Policies”, in INFORMS APS Best Student Paper Prize award session.  
TALK 2: “Optimal Scheduling and Exact Response Time Analysis for Multistage Jobs”.  
TALK 3: “Open Problem—M/G/1 Scheduling with Preemption Delays”, in INFORMS APS “Open Problems in Applied Probability” session.

**SIGMETRICS 2018, Talk and poster** Irvine, CA, *June 2018*  
TALK: “SOAP: One Clean Analysis of All Age-Based Scheduling Policies”. POSTER: “SOAP: One Clean Analysis of All Age-Based Scheduling Policies”.

**IMACCS 2018, Poster** Columbus, OH, *June 2018*  
POSTER: “SOAP: One Clean Analysis of All Age-Based Scheduling Policies”.

**2017 INFORMS Annual Meeting, Invited talk** Houston, TX, *October 2017*  
TALK: “Optimally Scheduling Jobs with Multiple Tasks”.

**2017 INFORMS APS Conference, Invited talk** Evanston, IL, *July 2017*  
TALK: “Optimally Scheduling Jobs with Multiple Tasks”.

**MAMA at SIGMETRICS 2017, Talk** Urbana, IL, *June 2017*  
TALK: “Optimally Scheduling Jobs with Multiple Tasks”.

**POPL 2017, Talk** Paris, France, *January 2017*  
TALK: “A Program Optimization for Automatic Database Result Caching”.

**PLDI 2016 Student Research Competition, Talk and poster** Santa Barbara, CA, *June 2016*  
TALK: “A Program Optimization for Automatic Database Result Caching”.  
POSTER: “A Program Optimization for Automatic Database Result Caching”.

**2012 MIT PRIMES Conference, Talk** Cambridge, MA, *May 2012*  
TALK: “Efficient Calculation of Determinants of Symbolic Matrices with Many Variables”.

**2012 MAA Undergraduate Student Poster Session, Poster** Boston, MA, *January 2012*  
POSTER: “Trees and Motors in the Parallel Chip-Firing Game”.

**2011 MIT PRIMES Conference, Talk** Cambridge, MA, *May 2011*  
TALK: “Progress on the Parallel Chip-Firing Problem”.



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## Visits and Other Talks

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### **Stanford University**

Stanford, CA, *May 2023*

HOST: Jann Spiess.

TALK: “A New Toolbox for Scheduling Theory”.

VENUE: GSB OIT Seminar.

### **TCS+**

Virtual seminar, *February 2023*

TALK: “Recent Progress in Queueing and Scheduling Theory (for a TCS Audience)”.

### **Massachusetts Institute of Technology**

Cambridge, MA, *February 2023*

TALK: “Local Hedging for Combinatorial Pandora’s Box Problems with Optional Inspection”.

VENUE: Algorithms & Complexity Seminar.

### **Harvard University**

Cambridge, MA, *February 2023*

TALK: “A New Toolbox for Scheduling Theory”.

VENUE: Systems-Theory Seminar.

### **UC Berkeley**

Berkeley, CA, *August 2022*

TALK: “Markov-Process Multi-Golf: A Gittins Index Tutorial”.

VENUE: Data-Driven Decision Processes Whiteboard Talk.

### **Northwestern University**

Evanston, IL, *August 2022*

HOST: Anton Braverman.

TALK: “A New Toolbox for Scheduling Theory”.

### **University of Amsterdam**

Amsterdam, The Netherlands, *July 2022*

HOST: Jan-Pieter Dorsman.

TALK: “A New Toolbox for Scheduling Theory”.

VENUE: Applied Probability Seminar.

### **Eindhoven University of Technology**

Eindhoven, The Netherlands, *June 2022*

HOST: Onno Boxma.

TALK: “A New Toolbox for Scheduling Theory”.

VENUE: SOR Seminar.

### **University of Michigan**

Ann Arbor, MI (virtual), *February 2022*

HOST: Eunshin Byon.

TALK: “A New Toolbox for Scheduling Theory”.

VENUE: IOE Seminar.

### **Cornell University**

Ithaca, NY (virtual), *January 2022*

HOST: David A. Goldberg.

TALK: “A New Toolbox for Scheduling Theory”.

VENUE: ORIE Special Seminar.

### **University of Chicago**

Chicago, IL (virtual), *January 2022*

HOST: René Caldentey.

TALK: “A New Toolbox for Scheduling Theory”.

VENUE: Workshop in Operations/Management Science.

### **California Institute of Technology**

Pasadena, CA (virtual), *January 2022*

HOSTS: Pietro Perona and Adam Wierman.

TALK: “A New Toolbox for Scheduling Theory”.

VENUE: Frontiers in Computing + Mathematical Sciences Symposium.

**University of Michigan** Ann Arbor, MI (virtual), *September 2021*  
 HOST: Lei Ying.  
 TALK: “How to Schedule Near-Optimally under Real-World Constraints”.  
 VENUE: CSP Seminar.

**Cornell University** Ithaca, NY, *July–August 2021*  
 HOST: Sid Banerjee.

**Stanford University** Stanford, CA (virtual), *May 2021*  
 HOST: Balaji Prabhakar.  
 TALK: “The Gittins Policy is Nearly Optimal in the M/G/k under Extremely General Conditions”.  
 VENUE: Information Theory Forum.

**The Ohio State University** Columbus, OH (virtual), *March 2021*  
 HOST: Ness Shroff.  
 TALK: “Near-Optimal Scheduling: Towards a Unified Theory”.

**University of Illinois at Urbana-Champaign** Urbana, IL (virtual), *February 2021*  
 HOST: R. Srikant.  
 TALK: “The Gittins Policy is Nearly Optimal in the M/G/k under Extremely General Conditions”.  
 VENUE: SINE Seminar.

**Carnegie Mellon University** Pittsburgh, PA (virtual), *November 2020*  
 TALK: “The Gittins Policy is Nearly Optimal in the M/G/k under Extremely General Conditions”.  
 VENUE: CS Theory Lunch.

**Stanford University** Stanford, CA, *October 2019*  
 HOST: Ramesh Johari.  
 TALK: “Simple Near-Optimal Scheduling for the M/G/1”.  
 VENUE: ISL Colloquium.

**University of California, Berkeley** Berkeley, CA, *October 2019*  
 HOST: Rhonda Righter.  
 TALK: “SOAP: One Clean Analysis of All Age-Based Scheduling Policies”.  
 VENUE: IEOR Seminar.

**University of Washington** Seattle, WA, *September 2019*  
 HOST: Anna Karlin.  
 TALK: “SOAP: One Clean Analysis of All Age-Based Scheduling Policies”.  
 VENUE: CS Theory Seminar.

**IBM Research** Yorktown Heights, NY, *June–August 2019*  
 HOSTS: Mark Squillante and Soumyadip Ghosh.  
 TALK: “SOAP: One Clean Analysis of All Age-Based Scheduling Policies”.  
 VENUE: IBM Research Seminar.

**University of Antwerp** Antwerp, Belgium, *April–May 2019*  
 HOST: Benny Van-Houdt.

**Eindhoven University of Technology** Eindhoven, The Netherlands, *December 2018*  
 HOST: Onno Boxma.  
 TALK: “SOAP: One Clean Analysis of All Age-Based Scheduling Policies”.  
 VENUE: Stochastics Colloquium.

**University of Amsterdam**Amsterdam, The Netherlands, *December 2018*

HOST: Jan-Pieter Dorsman.

TALK: “SOAP: One Clean Analysis of All Age-Based Scheduling Policies”.

VENUE: SPIP Meeting.

**California Institute of Technology**Pasadena, CA, *June 2018*

HOST: Adam Wierman.

**Carnegie Mellon University**Pittsburgh, PA, *April 2018*

TALK: “SOAP: One Clean Analysis of All Age-Based Scheduling Policies”.

VENUE: CS Theory Lunch.

**Carnegie Mellon University**Pittsburgh, PA, *February 2017*

TALK: “Scheduling with the Gittins Index”.

VENUE: CS Theory Lunch.

**Conference Sessions Chaired****2022 INFORMS Annual Meeting**Indianapolis, IN, *October 2022*

Queueing and Scheduling: Multiserver Systems and Uncertainty.

**2022 CORS/INFORMS International Conference**Vancouver, BC, Canada, *June 2022*

Multiserver Queues: Emerging Techniques in Performance Analysis.

**Other Activities****SIGBOVIK Organizing Committee, General Chair, Committee Member**Pittsburgh, PA, *2017–2018*Served on the committee that organizes SIGBOVIK, a tongue-in-cheek conference featuring ~~joke~~ Extremely Serious™ computer science research that occurs every  $O(\text{April } 1)$  at CMU. Served as general chair in 2018.**CMU SCS Musical, Music Director, Musician**Pittsburgh, PA, *2017–2018*

Played in (2017–2018) and conducted (2018) the pit band for the CMU School of Computer Science musical. Instruments: clarinet, tenor sax, drum pad.

**MIT Educational Studies Program, Program Director, Teacher**Cambridge, MA, *2012–2017*

Codirected two educational programs for middle- and high-school students, Spring HSSP 2013 and ProveIt 2013–2014, and taught numerous classes to middle- and high-school students on a variety of math and programming topics, including aforementioned employment teaching AP Physics C.

**MIT Asymptones, President, Singer, Arranger**Cambridge, MA, *2012–2016*

Sang bass and arranged music for the Asymptones a cappella group. Served as group president in 2015.

**MIT Alpha Epsilon Pi Philanthropy, Logistics Lead, Graphic Designer**Cambridge, MA, *2013–2014*

Designed a novel event, produced graphics, and led logistics for MIT AEPI’s 2014 philanthropy campaign, which raised \$30,000 for the Save a Child’s Heart charity.