

Computer Science  
Columbia University  
kgoldner@cs.columbia.edu

# Kira Goldner

www.kiragoldner.com

500 West 120<sup>th</sup> St, Room 450  
New York, NY 10027  
Cell: 610-324-3931

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## APPOINTMENTS:

**Columbia University, New York, NY** July 2019 – Present  
NSF Mathematical Sciences Postdoctoral Research Fellow  
Data Science Institute Postdoctoral Fellow  
Host: Tim Roughgarden

**The Simons Institute, Berkeley, CA** Aug. 2019 – Oct. 2019  
Research Fellow  
Program: Online and Matching-Based Market Design

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## EDUCATION:

**University of Washington, Seattle, WA** 2014 – 2019  
Ph.D. in Computer Science and Engineering  
Dissertation: Mechanism Design for a Complex World: Rethinking Standard Assumptions  
Advisor: Anna Karlin  
Masters in Computer Science and Engineering 2016  
Advisor: Anna Karlin

**Oberlin College, Oberlin, OH** 2010 – 2014  
Bachelor of Arts: Mathematics Major, Computer Science Minor

**Budapest Semesters in Mathematics, Budapest, Hungary** Fall 2013  
*Honors*, Study Abroad

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## RESEARCH INTERESTS:

My interests lie in algorithmic mechanism design and approximation, in particular, in (1) mechanism design for social good, e.g. within health insurance and online labor markets, (2) maximizing revenue in settings that are motivated by practice, and (3) relaxing traditional assumptions (e.g. known priors or risk-neutrality).

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## AWARDS, SCHOLARSHIPS, AND DISTINCTIONS:

NSF Mathematical Sciences Postdoctoral Research Fellowship 2019  
Columbia Data Science Institute Postdoctoral Fellowship  
Microsoft Research PhD Fellowship 2017  
Facebook Fellowship Finalist  
UW Society for Women Engineers Evening with Industry Outstanding Female Award  
Google Anita Borg Memorial Scholarship 2016  
NSF Graduate Research Fellowship Program: Honorable Mention  
National Defense in Science and Engineering Fellowship: Alternate Selectee  
NSF Graduate Research Fellowship Program: Honorable Mention 2015  
Phi Beta Kappa 2014  
NSF S-STEM Scholar in Computation and Modeling at Oberlin College 2012  
John F. Oberlin merit scholarship for \$25,000 annually for four years (top level awarded) 2010

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## PUBLICATIONS:

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**Reducing Inefficiency in Carbon Auctions with Imperfect Competition**, with Nicole Immorlica and Brendan Lucier. In *Proceedings of the 11<sup>th</sup> Conference on Innovations in Theoretical Computer Science (ITCS 2020)*.

**Bulow-Klemperer-Style Results for Welfare-Maximization in Two-Sided Markets**, with Moshe Babaioff and Yannai A. Gonczarowski. In *Proceedings of the 31<sup>st</sup> ACM-SIAM Symposium on Discrete Algorithms (SODA 2020)*.

**Combinatorial Auctions with Interdependent Valuations: SOS to the Rescue**, with Alon Eden, Michal Feldman, Amos Fiat, and Anna R. Karlin. In *Proceedings of the 20<sup>th</sup> ACM Conference on Economics and Computation (EC 2019)*.

**Best Paper with a Student Lead Author.**

**Simple and Approximately Optimal Pricing for Proportional Complementarities**, with Yang Cai, Nikhil R. Devanur, and R. Preston McAfee. In *Proceedings of the 20<sup>th</sup> ACM Conference on Economics and Computation (EC 2019)*.

**When to Limit Entry Under Mandatory Purchase**, with Meryem Essaidi and S. Matthew. In *the 3<sup>rd</sup> Workshop on Mechanism Design for Social Good (MD4SG 2019)*.

**Mechanism Design for Social Good**, with Rediet Abebe. In *ACM SIGAI AI Matters, 4.3, October 2018*.

**Interdependent Values without Single-Crossing**, with Alon Eden, Michal Feldman, and Amos Fiat. In *Proceedings of the 19<sup>th</sup> ACM Conference on Economics and Computation (EC 2018)*.

**Revenue Maximization with an Uncertainty-Averse Buyer**, with Shuchi Chawla, J. Benjamin Miller, and Emmanouil Pountourakis. In *Proceedings of the 29<sup>th</sup> ACM-SIAM Symposium on Discrete Algorithms (SODA 2018)*.

**A Report on the Workshop on Mechanism Design for Social Good**, with Rediet Abebe. In *ACM SIGecom Exchanges, 16.2, June 2018*.

**A Prior-Independent Revenue-Maximizing Auction for Multiple Additive Bidders**, with Anna Karlin. In *Proceedings of the 12<sup>th</sup> Conference on Web and Internet Economics (WINE 2016)*.

**The FedEx Problem**, with Amos Fiat, Anna Karlin, and Elias Koutsoupias. In *Proceedings of the 17<sup>th</sup> ACM Conference on Economics and Computation (EC 2016)*.

**Minimal Partial Languages and Automata**, with F. Blanchet-Sadri and Aidan Shackleton. In *Proceedings of the 19<sup>th</sup> International Conference on Implementation and Applications of Automata (CIAA 2014)*.

**Different Optimal Solutions in Shared Path Graphs**, with Sean McCulloch. In *Proceedings of the 2012 Midstates Conference for Undergraduate Research in Computer Science and Mathematics (MCURCSM 2012)*.

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## WORKSHOP, TUTORIAL, AND RESEARCH GROUP ORGANIZATION:

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**Tutorial on the Menu Size of Precise and Approximate Revenue-Maximizing Auctions** June 2018  
Organizer and Presenter, with Yannai A. Gonczarowski at ACM-EC, Ithaca, NY

**The 2<sup>nd</sup> Workshop on Mechanism Design for Social Good** June 2018  
Organizer and PC Chair, with Rediet Abebe at ACM-EC, Ithaca, NY

<b>Tutorial on Mechanism Design for Social Good</b> Organizer and Presenter, at WINE, Bangalore, India	Dec. 2017
<b>The 1<sup>st</sup> Workshop on Mechanism Design for Social Good</b> Organizer and PC Chair, with Rediet Abebe at ACM-EC, Cambridge, MA	June 2017
<b>The Mechanism Design for Social Good research group</b> Organizer and Co-Founder, with Rediet Abebe	2016-2018

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## RESEARCH INTERNSHIPS AND LONG-TERM VISITS:

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<b>Visitor</b> , Microsoft Research Herzliyah, hosted by Moshe Babaioff	Dec. 2018 – Jan. 2019
<b>Research Intern</b> , Microsoft Research New England, hosted by Brendan Lucier	Summer 2018
<b>Visitor</b> , Tel Aviv University, hosted by Michal Feldman and Amos Fiat	Nov. 2017 – Mar. 2018
<b>Visitor</b> , Princeton University, hosted by Matt Weinberg	Oct. – Nov. 2017
<b>Research Intern</b> , Microsoft Research Redmond, hosted by Nikhil Devanur	Summer 2017
<b>Visitor</b> , Tel Aviv University, hosted by Michal Feldman and Amos Fiat	Jan. – Feb. 2017
<b>Visitor</b> , University of Wisconsin-Madison, hosted by Shuchi Chawla	Oct. – Nov. 2016
<b>Visitor</b> , The Simons Institute, hosted by the Algorithms & Uncertainty Semester	Aug. – Sept. 2016
<b>Visitor</b> , The Simons Institute, hosted by the Economics & Computation Semester	Fall 2015
<b>Undergraduate Research Assistant</b> , UNC Greensboro NSF REU, hosted by Francine Blanchet-Sadri	Summer 2013
<b>Undergraduate Research Assistant</b> , Oberlin College, hosted by Robert Bosch	Spring 2013
<b>Undergraduate Research Assistant</b> , Ohio Wesleyan NSF REU, hosted by Sean McCulloch	Summer 2012

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## INVITED WORKSHOPS:

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Young Researcher Workshop on Economics and Computation, Tel Aviv University, Israel	Jan. 2020
Workshop on Algorithms for Learning and Economics, Rhodes, Greece	July 2019
Plenary Speaker at Data Science for Social Good Workshop, Georgia Tech, Atlanta, GA	Apr. 2019
Northwestern Quarterly Theory Workshop, Evanston, IL	Nov. 2018
Bellairs Workshop on Algorithmic Game Theory, Holetown, Barbados	Apr. 2018
Heidelberg Laureate Forum, Heidelberg, Germany	Sept. 2017
Greece Economic and Algorithmic Theory Week, Ikaria, Greece	July 2017
Young Researcher Workshop on Economics and Computation, Tel Aviv University, Israel	Jan. 2017
Women in Theory Workshop, Berkeley, CA	May 2016
CRA-W Grad Cohort Conference, San Francisco, CA	Apr. 2015

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## INVITED TALKS:

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<b>Reducing Inefficiency in Carbon Auctions with Imperfect Competition</b> Innovations in Theoretical Computer Science, Seattle, WA	Jan. 2020
Young Researcher Workshop on Economics and Computation, Tel Aviv University, Israel	Jan. 2020
Social Responsibility of Algorithms Interdisciplinary Workshop, Paris, France	Dec. 2020
Marketplace Innovation Workshop, Palo Alto, CA	June 2019
Data Science for Social Good Workshop, Atlanta, GA	Apr. 2019

## Mechanism Design for Social Good

Technion Game Theory Playtime Seminar, Haifa, Israel	Dec. 2019
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Washington University CS Department Colloquia Series, St. Louis, MO	Nov. 2019
Workshop on Algorithms for Learning and Economics, Rhodes, Greece	July 2019
<b>Mechanism Design under Interdependent Valuations</b>	
MIT Algorithms and Complexity Seminar, Cambridge, MA	Oct. 2019
<b>Simple and Approximately Optimal Pricing for Proportional Complementarities</b>	
Minisymposium on Algorithmic Game Theory at CANADAM, Vancouver, BC, Canada	May 2019
Hebrew University of Jerusalem Computation and Economics Seminar, Jerusalem, Israel	Jan. 2019
INFORMS Annual Meeting, Phoenix, AZ	Nov. 2018
<b>Interdimensional Mechanism Design</b>	
Northwestern Quarterly Theory Workshop, Evanston, IL	Nov. 2018
UW Allen School Colloquium, Seattle, WA	Oct. 2018
AmosFest, Tel Aviv, Israel	Nov. 2017
<b>Optimal Mechanism Design for Single-Minded Agents</b>	
INFORMS Annual Meeting, Phoenix, AZ	Nov. 2018
Georgia Tech ACO Student Seminar, Atlanta, GA	Apr. 2018
UW Theory Seminar, Seattle, WA	Apr. 2018
Hebrew University of Jerusalem Computation and Economics Seminar, Jerusalem, Israel	Jan. 2018
Tel Aviv University Algorithms Seminar, Tel Aviv, Israel	Dec. 2017
<b>Interdependent Values without Single-Crossing</b>	
Bellairs Workshop on Algorithmic Game Theory, Barbados	Apr. 2018
<b>The FedEx Problem</b>	
Princeton Mechanism Design Reading Group, Princeton, NJ	Oct. 2017
Conference of the International Federation of Operational Research Societies, Quebec, Canada	July 2017
STOC Workshop on Bayesian Mechanism Design, Montreal, Canada	June 2017
Hebrew University of Jerusalem Lo Letzivot Seminar, Jerusalem, Israel	Jan. 2017
Weizmann Institute Foundations of Computer Science Seminar, Rehovot, Israel	Jan. 2017
Young Researcher Workshop on Economics and Computation, Tel Aviv, Israel	Jan. 2017
UW-Madison Theory Seminar, Madison, WI	Nov. 2016
Microsoft Research Theory Seminar, Redmond, WA	Oct. 2016
UC Berkeley Theory Lunch, Berkeley, CA	Sept. 2016
Stanford University Theory Lunch, Palo Alto, CA	Sept. 2016
ACM Conference on Economics and Computation, Maastricht, Netherlands	July 2016
Google Scholar's Retreat, Mountain View, CA	June 2016
UW Theory Seminar, Seattle, WA	May 2016
<b>Revenue Maximization with an Uncertainty-Averse Buyer</b>	
Microsoft Research Theory Lunch, Redmond, WA	Sept. 2017
UW Theory Lunch, Seattle, WA	May 2017
<b>A Prior-Independent Revenue-Maximizing Auction for Multiple Additive Bidders</b>	
Conference on Web and Internet Economics, Montreal, Canada	Dec. 2016
UW Theory Seminar, Seattle, WA	Jan. 2016
<b>Incentives and the Bitcoin Protocol</b>	

Heidelberg Laureate Forum: Workshop on Transactions and Blockchains, Heidelberg, Germany	Sept. 2017
UW CSE Women's Day, Seattle, WA	Jan. 2016
UW CSE Women's Day, Seattle, WA	May 2015
CRA-W Grad Cohort, San Francisco, CA	Apr. 2015

### **Minimal Partial Language and Automata**

Conference on Implementation and Application of Automata, Germany	July 2014
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### **Different Optimal Solutions in Shared Path Graphs**

Midstates Conference for Undergraduate Research in Computer Science and Mathematics	Nov. 2012
5 Colleges of Ohio Summer Research Symposium	July 2012

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### **SERVICE AND OUTREACH:**

<b>Program Committee</b> for EC '20, Tackling Climate Change with Machine Learning at ICLR 2020	2020
<b>Program Committee</b> for AAAI '20, EC '19, NetEcon '19, MD4SG '19 (Theory area chair)	2019
<b>External Reviewer</b> for JACM, JAIR, SODA '20, FOCS '19	2019
<b>Program Committee</b> for AIES '19	2018
<b>External Reviewer</b> for TEAC, STOC '19, ITCS '19, SODA '19, WINE '18, ESA '18	2018
<b>Member</b> , PhD Admissions Committee, University of Washington CSE	2017 – 2019
<b>External Reviewer</b> for STOC '18, SODA '18, WINE '17, ESA '17, ICALP '17	2017
<b>External Reviewer</b> for IPCO '17, STACS '17, SODA '17, WINE '16, EC '16	2016
<b>Co-Chair</b> , Graduate Women's Organization, University of Washington CSE	2015 – 2016
<b>Co-Chair</b> , Graduate Prospective Student Committee, University of Washington CSE	
<b>Founder and Mentor</b> , Mentoring Program for Undergraduate Women, University of Washington CSE	
<b>Member</b> , Graduate Prospective Student Committee, University of Washington CSE	2014 – 2015
<b>Founder and Co-Chair</b> , Women in Math and Computer Science, Oberlin College	Spring 2014

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### **TEACHING ASSISTANTSHIPS:**

Applied Algorithms (Professional Masters Program), University of Washington	Spring 2015
Foundations of Computing II, University of Washington	Fall 2014
Theory of Computer Science, Oberlin College	Spring 2014
Introduction to Computer Science, Oberlin College	Spring 2013
Introduction to Computer Science, Oberlin College	Spring 2012