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# Curriculum Vitae

*Kerry Ojakian*

## Education

- 8/2004 • Ph.D. Mathematics  
Carnegie Mellon University (Pittsburgh, PA)
- 12/1995 • B.S. Mathematics and Computer Science  
University of Michigan (Ann Arbor, Michigan)

## Teaching

- 9/2020 - present • Associate Professor at Bronx Community College, CUNY (Bronx, NY)  
Courses: Developmental Algebra (MTH 05), College Algebra (MTH 06), Statistics (MTH 23), Statistics with Algebra (MTH 23.5), Calculus I (MTH 31), Calculus II (MTH 32), Linear Algebra (MTH 42), Discrete Mathematics I and II (CSI 30, CSI 35)  
Computer Programming I, II, and III (CSI 31, CSI 32, CSI 33), First Year Seminar (FYS 11)
- 8/2012 - 9/2020 • Assistant Professor at Bronx Community College, CUNY (Bronx, NY)
- 1/2011 - 5/2012 • Assistant Professor at St. Joseph's College (Patchogue, NY)  
Courses: Precalculus, Calculus II, Discrete Mathematics, Topology
- 8/2010 - 12/2010 • Adjunct Assistant Professor at Queens College, CUNY (Queens, NY)  
Courses: Discrete Math
- 8/2009 - 5/2010 • Substitute Assistant Professor at Queens College, CUNY (Queens, NY)  
Courses: Calculus I, Precalculus, Discrete Math, Differential Equations
- 6/2008 - 7/2008 • Adjunct Assistant Professor at City College, CUNY (New York, NY)  
Taught linear algebra to middle school and high school teachers
- 5/2001 - 6/2001 • Instructor at Carnegie Mellon University (Pittsburgh, PA)  
Taught 6 week Discrete Math summer course
- 5/1999 - 6/1999 • Instructor at Carnegie Mellon University (Pittsburgh, PA)  
Taught 6 week Calculus summer course
- 8/1997 - 5/2003 • Teaching Assistant at Carnegie Mellon University (Pittsburgh, PA)  
Assisted lecturer by running weekly recitations, holding office hours, and grading work  
Courses (during 6 years): Calculus (all levels), Concepts of Math, Discrete Math

## Postdoctoral Positions

5/2005 - 7/2009 • Instituto Superior Tecnico (Lisbon, Portugal)

8/2004 - 12/2004 • Charles University (Prague, Czech Republic)

## Research

### *Research Interests*

- Combinatorics, Games on Graphs, Logic

### *Papers*

- *Bounding the  $k$ -rainbow total domination number.* Discrete Mathematics, Volume 344, Issue 8, August 2021 (with Riste Skrekovski and Aleksandra Tepeh).
- *Capture-time Extremal Cop-Win Graphs.* Discussiones Mathematicae Graph Theory, 41 (2021), 923-948 (with David Offner).
- *A Combinatorial Interpretation of The Bijection of Goulden and Yong.* AKCE International Journal of Graphs and Combinatorics, 2020, vol. 17, no. 1, 429-442.
- *Comparing the power of cops to zombies in pursuit-evasion games.* Discrete Applied Mathematics. Volume 271, 1 December 2019, Pages 144-151. (with David Offner).
- *Variations of Cops and Robber on the Hypercube.* The Australasian Journal of Combinatorics, Volume 59 (2), Pages 229-250, 2014 (with David Offner).
- *A characterization of computable analysis on unbounded domains using differential equations.* Information and Computation, 209 (8) 1135-1159, 2011 (with M. L. Campagnolo).
- *Characterizing computable analysis with differential equations.* In: V. Brattka, R. Dillhage, T. Grubba and A. Klutsch, editors, Proceedings of the Fifth International Conference on Computability and Complexity in Analysis, Electronic Notes in Theoretical Computer Science, 221:23-35, 2008 (with M. L. Campagnolo).
- *The elementary computable functions over the real numbers: applying two new techniques.* Archive for Mathematical Logic, 46(7-8):593-627, 2008 (with M. L. Campagnolo).
- *Using approximation to relate computational classes over the reals* In: J. Durand-Lose and M. Margenstern, editors, MCU 2007, Lecture Notes in Computer Science, 4664:39-61, 2007 (with M. L. Campagnolo).
- *The methods of approximation and lifting in real computation.* In: D. Cenzer, R. Dillhage, T. Grubba, and K. Weihrauch, editors, Proceedings of the Third International Conference on Computability and Complexity in Analysis, Electronic Notes in Theoretical Computer Science, 167:387-423, 2007 (with M. L. Campagnolo).
- *Upper and lower Ramsey bounds in bounded arithmetic.* Annals of Pure and Applied Logic, 135(1-3):135-150, 2005.

## Grants

- 5/2017 • PSC-CUNY (Traditional A), titled *Cops and Robber Game: Extremal Results and Infinite Graphs*
- 5/2016 • PSC-CUNY (Traditional A), titled *Cop-Win Graphs: Three Directions*
- 5/2014 • PSC-CUNY (Traditional A), titled *Bijections and Factorizations*
- 2/2014 • Bronx Community College Presidential Grant, titled *Real World Applications for MTH 05*
- 5/2013 • PSC-CUNY (Traditional A), titled *The Graph Theoretic Game of Cops and Robber*
- 2/2013 • CUNY grant (Improving Outcomes in High Enrollment Remedial and Gateway Courses) entitled *Web-assisted MTH 05 with Incremental Steps and Progressive Assessments*

## Talks

- 5/2021 • Queensborough Community College (CUNY) Mathematics Colloquia (Queens, NY)  
*Bounding the  $k$ -rainbow total domination number*
- 9/2019 • New York Combinatorics Seminar at the Graduate Center in NY, NY  
*Bounding the  $k$ -rainbow total domination number*
- 5/2019 • CanaDAM 2019 (Vancouver, Canada)  
*Graphs that are cop-win, but not zombie-win*
- 8/2018 • Graph Searching in Canada Workshop (Regina, Canada)  
*Zombies Can Be Much Dumber Than Cops*
- 6/2017 • Canadian Discrete and Algorithmic Mathematics Conference (Toronto, Canada)  
Minisymposium on Pursuit-Evasion Games on Graphs  
*Extremal Cop-Win Graphs*
- 5/2017 • AMS Sectional Meeting (NY, NY)  
Special Session on Applications of Network Analysis, in Honor of Charlie Suffel's 75th Birthday  
*Three Graph Duals and A Bijection*
- 3/2016 • AMS Sectional Meeting (Stony Brook, NY)  
Special Session on Graph Vulnerability Parameters and their Role in Network Analysis  
*Extremal cop-win graphs*
- 6/2015 • Canadian Mathematical Society Summer Meeting (Charlotten, PEI, Canada)  
Session on Graphs, Designs and Hypergraphs  
*Capture time of cop-win graphs*
- 5/2015 • 3<sup>rd</sup> Graph Searching in Canada (GRASCan) Workshop 2015 (Montreal, Canada)  
*Cop-win Graphs and Strategy*
- 4/2015 • Faculty Day at Bronx Community College, CUNY (Bronx, NY)  
*Games, Cops, and Robbers*
- 2/2015 • NYC Combinatorics Seminar, Graduate Center, CUNY (NY, NY)  
*Graph Minor Theorem (An exposition)*

## Talks (continued)

- 7/2014 • IFORS 2014 (Barcelona, Spain)  
*Structural Characterizations of Cop Win Graphs*
- 5/2014 • 27th Cumberland Conference on Combinatorics, Graph Theory, and Computing (Morgantown, WV)  
*Relating Graphs to Factorizations of Permutations*
- 5/2014 • Bronx EdTech Showcase (Bronx, NY)  
*Expanding the Online Math Homework System WeBWork to CUNY*
- 2/2014 • Graph Searching - Graph Protection Workshop (Jacksonville, FL)  
*Structure and Strategy in Cops and Robber*
- 5/2013 • 26th Cumberland Conference on Combinatorics, Graph Theory, and Computing (Murfreesboro, Tennessee)  
*Cops and Robber on the Hypercube*
- 4/2013 • 2nd Graph Searching in Canada Workshop (Toronto, Canada)  
*Cops and Robber on the Hypercube*
- 10/2012 • Bronx Community College Research Seminar (Bronx, NY)  
*Cops and Robber on the Hypercube*

## Service

- 6/2021 - present • Supervising a student in a CUNY REU (Research Experience for Undergraduates) for project titled "Network Analysis"
- 2/2021 - present • Supervising a student in LSAMP (Louis Stokes Alliance for Minority Participation) CUNY program for project titled "Machine Learning"
- 5/2021 - present • Representative to the College Senate for the Department of Mathematics and Computer Science at Bronx Community College
- 8/2017 - present • Secretary of Executive Committee at BCC chapter of Professional Staff Congress
- 1/2014 - present • Chair of the WeBWorK committee for the Bronx Community College Mathematics and Computer Science department
- 8/2011 - present • Co-organizer of the New York Combinatorics Seminar at Graduate Center
- 9/2019 - 8/2020 • Coordinating and Developing Experimental Course MTH 20
- 8/2019 - 5/2021 • Alternate Representative to the College Senate for the Department of Mathematics and Computer Science at Bronx Community College
- 1/2019 - 5/2021 • S-STEM Mentor
- 1/2019 - 7/2019 • Hiring Committee Member for Mathematics and Computer Science Department at Bronx Community College
- 4/2018 • Co-organizer of the conference Graph Theory Day (Brooklyn College, CUNY)

## Service (continued)

- 4/2017 • Co-organizer of the conference Graph Theory Day (City Tech, CUNY)
- 4/2017 and 4/2018 • Judge at BCC Science Fair
- 1/2017 - 12/2018 • Supervised a LSAMP (Louis Stokes Alliance for Minority Participation) CUNY project titled *Computer Simulations of Wraparound Universes*
- 8/2015 - 8/2019 • Alternate-at-large representative in the College Senate at Bronx Community College
- 7/2015 • Co-organizer of the Weak Arithmetics Days Conference (at Graduate Center)
- 5/2015 • Co-organizer of the conference Graph Theory Day (Bronx Community College, CUNY)
- 8/2014 - 8/2017 • Member of Executive Committee at BCC chapter of Professional Staff Congress
- 7/2014 • Represented BCC at the Salzburg Global Citizenship Program
- 4/2014 • Judge at New York City Math Fair for high school students
- 1/2014 - 4/2014 • Hiring Committee for Bronx Community College Math and CS department
- 8/2013 - 8/2015 • Alternate College Senate representative for the department of mathematics and computer science at Bronx Community College
- 2/2013 - 5/2016 • Faculty mentor for the Mathematics, Engineering, Technology, and Science Scholarship Program
- 11/2013 - 12/2013 • Faculty organizer (partnering with student government) for Study-a-Thons
- 6/2013 - 8/2013 • Supervised an undergraduate student at BCC on a mathematics research project as part of the LSAMP program.
- 4/2013 • Co-organized the MTH 05 and MTH 30 workshops
- 8/2011 - 5/2016 • Co-advisor for a Ph.D. student at the Graduate Center