

## Curriculum Vitae

Maria Chudnovsky

### Contact Information

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**Date of Birth** January 6, 1977

### Present Position

Liu Family Professor of IEOR, and Professor of Mathematics, Columbia University

### Research Interests

Graph Theory and Combinatorial Optimization

### Employment history

2014- Professor, Columbia University

2006-2013 Associate Professor, Columbia University

2005-2006 Assistant Professor, Princeton University

2003-2008 Clay Research Fellow, The Clay Mathematics Institute

2003-2005 Veblen Research Instructor, Princeton University and the IAS

### Education

Ph.D Princeton University, Mathematics, 2003

*Thesis Title* : Berge Trigraphs and Their Applications.

*Thesis Advisor*: Paul Seymour

M.A Princeton University, 2002

M.SC Technion, Israel Institute of Technology, Mathematics, 1999.

*Thesis Title* : Systems of Disjoint Representatives.

*Thesis Advisor*: Ron Aharoni

B.A. *Summa Cum Laude* Technion, Israel Institute of Technology , Mathematics, 1996.

### **Honors and Awards**

- Invited speaker, Combinatorics Section, International Congress of Mathematicians, Seoul 2014
- MacArthur Foundation Fellowship (2013-2017)
- NSF Grant DMS-1265803 (2013-2018)
- NSF Grant IIS-1117631 (2011-2014, joint with Tony Jebara)
- NSF Grant DMS-1001091 (2010-2013)
- D.R. Fulkerson Prize (2009, joint with Neil Robertson, Paul Seymour and Robin Thomas)
- NSF Grant DMS-0758364 (2008-2011)
- Ostrowski research stipend (2004)
- Clay Mathematics Institute Research Fellowship (2003-2008)

### **Editorial Boards**

Journal of Graph Theory, SIAM Journal on Discrete Mathematics, Discrete Mathematics and Theoretical Computer Science

**Program Committees:** SODA 2009, Perspectives in Discrete Mathematics 2012, SODA 2013, SIAM DM14

### **Post-doc Supervision**

- Bernard Ries (now at Universite Paris Dauphine)
- Andrew King (now at D-Wave Systems)

- Juraj Stacho (now at Google)
- Radoslav Fulek (in progress)

### **PhD Student Supervision**

- Yori Zwols (PhD 2010, now at Google)
- Alexandra Fradkin (PhD 2011, now at the Center for Communications Research, Princeton )
- Irena Penev (PhD 2012, now at ENS Lyon)
- Krzysztof Choromanski (PhD 2013, now at Google Research)
- Matthieu Plumettaz (PhD 2014)
- Peter Maceli (in progress)
- Mingxian Zhong (in progress)
- Irene Lo (in progress)

### **MSc Student Research Supervision**

Mingxian Zhong (2013), Juba Ziani (2013)

### **Undergraduate Theses Supervision**

David Lyn (2005), Rohan Kapadia (2005,2006), Alexandra Ovetsky (2005,2006), Varun Jalan (2010), Max Ehrman (2012)

### **Other Experience**

1996 - 1999 Service in the Israel Defense Force.

### **Teaching**

*Spring 2010, Spring 2011, Spring 2012, Spring 2013, Spring 2014* Columbia University, Graph Theory—A Combinatorial View, CSORE4010

*Spring 2009* Columbia University, Introduction to OR—Deterministic Models, IEOR4004

*Spring 2009, Spring 2011, Spring 2013* Columbia University, Advanced Topics in IEOR—Graph Theory, IEOR8100

*Fall 2008, Fall 2009, Fall 2010, Fall 2011, Fall 2012* Columbia University, Introduction to Mathematical Programming, IEOR 3608

*Spring 2007, Fall 2009, Fall 2011* Columbia University, Introduction to OR—Deterministic Models, IEOR4004

*Fall 2006* Columbia University, Advanced Topics in IEOR—Graph Theory, IEOR8100

*Spring 2005* Princeton University, Introduction to Graph Theory, MAT306/COS342

*Fall 2002* Princeton University, MAT 202, Linear Algebra With Applications

## **Invited Talks**

### **2014**

- Bordeaux Graph Workshop, Bordeaux, France
- Mathematics Colloquium, Rutgers University, Piscataway, NJ
- Gentry Lectures, Wake Forest University, Winston-Salme, NC
- IMA Workshop on Extremal and Probabilistic Combinatorics, Minneapolis, MN
- Combinatorics Section, ICM 2014, Seoul, South Korea
- 2014 Workshop on Structure in Graphs and Matroids, Princeton, NJ
- Erdos Memorial Lecture, AMS Sectional Meeting, Knoxville, TN
- Forty-Fifth Southeastern International Conference on Combinatorics, Graph Theory, and Computing, Boca Raton, FL
- Brandeis-Harvard-MIT-Northeastern joint Mathematics Colloquium, NEU, Boston, MA
- Mathematics Colloquium, Caltech, Pasadena, CA
- Oberwolfach Meeting on Combinatorics, Oberwolfach, Germany

### **2013**

- Mathematics Colloquium, University of Pennsylvania, Philadelphia, PA

- ORFE Colloquium, Princeton University, Princeton, NJ
- Paris Graph Theory Day, Université Paris Diderot, Paris, France
- Women and Mathematics, IAS, Princeton
- Symposium on Visions in the Theory of Computing, UC Berkeley, CA
- McGill University workshop on graph coloring, Bellairs Research Center, Barbados
- Oberwolfach Meeting on Graph Theory, Oberwolfach, Germany

### 2012

- KAIST Graph Theory Day, KAIST, Daejeon, South Korea
- Columbia Theory Day, Columbia University, New York, NY
- Distinguished Lecture, School of Computing, Informatics, and Decision Systems Engineering, ASU, Tempe, AZ
- Geometry, Structure and Randomness in Combinatorics, Pisa, Italy
- Third Workshop on Graphs and Matroids, Maastricht, The Netherlands
- Joint Colloquium at the Mathematics Institute SANU and Mathematics Faculty of Belgrade University, Belgrade, Serbia
- SIAM conference on Discrete Mathematics, Halifax, Canada
- Matchings, Matroids, and Extensions, A Conference in Honor of Bill Cunningham's 65th Birthday, University of Waterloo, Waterloo, Canada
- Paul Erdős Lecture Series, University of Memphis Centennial Celebration, Memphis, TN
- Graph Theory at Georgia Tech, Georgia Tech, Atlanta, GA
- McGill University workshop on graph coloring, Bellairs Research Center, Barbados
- Workshop on  $\chi$ -bounded graph classes, ENS Lyon, Lyon, France

### 2011

- Tutte Seminar, University of Waterloo, Ontario, Canada

- University of Connecticut Mathematics Department Colloquium, University of Connecticut, Storrs, CT
- KAIST Graph Theory Day 2011, KAIST, Daejeon, South Korea
- Atlanta Lecture Series in Combinatorics and Graph Theory (featured speaker), Georgia Tech, Atlanta, GA
- Fourth International Conference on Combinatorics, Graph Theory and Applications, Elgersburg, Germany
- One-Day Meeting in Combinatorics, Mathematical Institute, University of Oxford, Oxford, UK
- A conference on Structural Graph Theory, Universite Paris 7, Paris, France
- Oberwolfach Meeting on Combinatorics, Oberwolfach, Germany

### 2010

- Workshop on Discrete Optimization, IPAM, Los Angeles, CA
- PACM Colloquium, Princeton University, Princeton, NJ
- Conference on Geometric Graph Theory, EPFL, Lausanne, Switzerland
- Second Workshop on Graphs and Matroids, Maastricht, The Netherlands
- Minisymposium on Graph Coloring, SIAM Discrete Math meeting, Austin, TX
- Symposium "Diskrete Mathematik", Vienna, Austria
- Operations Research Center Seminar, MIT, Boston, MA
- Mathematics Colloquium, University of Calgary, Calgary, AB, Canada
- Mathematics Colloquium, University of Central Florida, Orlando, FL
- Oberwolfach Meeting on Graph Theory, Oberwolfach, Germany
- Mathematics Undergraduate Colloquium, University of Pennsylvania, Philadelphia, PA

### 2009

- Bertinoro Workshop on Algorithms and Graphs, Bertinoro, Italy
- Workshop on Topics in Graphs and Hypergraphs, IPAM, Los Angeles, CA
- Mathematics Colloquium, University of Buenos Aires, Buenos Aires, Argentina
- Mathematics Colloquium, Technion, Haifa, Israel
- 2009 AMS Spring Central Sectional Meeting, Special Session on Graph Theory, UIUC, Champaign, IL
- Everett Pitcher Lecture Series, Lehigh University, Bethlehem, PA
- 13th Combinatorial Optimization Workshop, Aussois, France
- Invited MAA address at the 2009 Joint Mathematics Meetings, Washington, DC

## 2008

- The Fourth International Conference on Combinatorial Mathematics and Combinatorial Computing, Auckland, New Zealand
- BIRS workshop on Graph Minors, Banff, Canada
- Graph Theory 2008 at Sandbjerg Manor, Denmark
- Netherlands Workshop on Graphs and Matroids, Sittard, The Netherlands
- Princeton/Oxford Meeting, Oxford University, Oxford, England
- Workshop on Combinatorial Optimization and Discrete Algorithms, RIMS, Kyoto, Japan
- New Directions in Algorithms, Combinatorics, and Optimization, Georgia Institute of Technology, Atlanta, GA
- Mathematics Colloquium, Haifa University, Haifa, Israel
- Joint Mathematics and IME Colloquium, WMU, Kalamazoo, MI
- Mathematics Colloquium, Brigham Young University, Provo, Utah
- 3eme cycle romand de Recherche Operationnelle, Zinal, Switzerland
- Oberwolfach Meeting on Combinatorics, Oberwolfach, Germany

## 2007

- Joint Meeting of the AMS - NZMS 2007, Victoria University, Wellington, New Zealand
- IV Latin-American Graphs Algorithms and Optimization, Puerto Varas, Chile
- The ADONET-CIRM School on Graphs and Algorithms, Levico Terme, Italy
- Combinatorics Seminar, CUNY Graduate Center, New York, NY
- Princeton Discrete Math Seminar, Princeton, NJ
- 21st British Combinatorial Conference, Reading, UK
- *C&O@40*, University of Waterloo, Waterloo, ON, Canada
- 20th Cumberland Conference, Emory University, Atlanta, GA
- Oberwolfach Meeting on Graph Theory, Oberwolfach, Germany
- ACM-SIAM Symposium on Discrete Algorithms (SODA), New Orleans, LA

## 2006

- Combinatorics Seminar, University of Michigan, Ann Arbor, MI
- Discrete Mathematics and Theoretical Computer Science Seminar, Yale University, New Haven, CT
- CS Colloquium, City University of New York, New York, NY
- 2nd Annual Heilbronn Conference, Bristol, UK
- CS Colloquium, New York University, New York, NY
- 19th International Symposium on Mathematical Programming, Rio de Janeiro, Brazil
- SIAM Conference on Discrete Mathematics, Victoria, BC
- Sixth Haifa Workshop on Interdisciplinary Applications of Graph Theory, Combinatorics and Algorithms, University of Haifa, Haifa, Israel
- Theory of Computing Seminar, The Hebrew University at Jerusalem, Jerusalem, Israel
- Bar Ilan University Discrete Math Seminar, Israel



- Discrete Math Seminar, The Hebrew University at Jerusalem, Jerusalem, Israel
- Discrete Math and Theory of Computing Seminar, Rutgers University, Piscataway, NJ
- Joint SFU/UBC Discrete Mathematics Computing Science Seminar, Vancouver, BC, Canada
- Theory of combinatorial algorithms Mittagsemnar, ETH, Zurich, Switzerland
- Oberwolfach Meeting on Combinatorics, Oberwolfach, Germany

### 2005

- Workshop on Graph Classes, Width Parameters and Optimization, Prague, The Czech Republic
- 7th International Colloquium on Graph Theory ICGT '05, Giens, France
- Combinatorics Seminar, UC Berkeley, Berkeley, CA
- Mathematics Colloquium UC Berkeley, Berkeley, CA
- Combinatorial Mathematics and its Applications, Oxford, England
- Princeton/Oxford Meeting, Oxford University, Oxford, England
- Mathematics Colloquium, The Ohio State University, Columbus, OH
- 49th Graph Theory Day, Shirley, NY
- MAA annual meeting, Metropolitan New York Section, Queens, NY
- Workshop on Combinatorics and Telecommunications, Icapui, Ceara, Brazil
- Computer Science/Discrete Mathematics Seminar, IAS, Princeton, NJ
- 9th Combinatorial Optimization Workshop, Aussois, France
- CAM Colloquium, Cornell University, Ithaca, NY
- Oberwolfach Meeting on Graph Theory, Oberwolfach, Germany
- Algorithms seminar, McGill University, Montreal, Canada

### 2004

- Joint conference: the 2004 NZIMA Conference in Combinatorics and its Applications and the 29th Australasian Conference in Combinatorial Mathematics and Combinatorial Computing, Lake Taupo, New Zealand
- Combinatorics Seminar, University of Pennsylvania, Philadelphia, PA
- ACCOTA 2004 International Workshop, Combinatorial and Computational Aspects of Optimization, Topology and Algebra, San Cristbal de las Casas, Chiapas, Mexico
- Tenth annual Big Sky Conference on Discrete Mathematics, Missoula, MN
- Latin American Conference on Combinatorics, Graphs and Applications, Santiago, Chile
- Prague Midsummer Combinatorial Workshop XI, Prague, Czech Republic
- Graph Theory 2004 conference in memory of Claude Berge, Paris, France
- SIAM Conference on Discrete Mathematics, Nashville, TN
- Computer Science Colloquium, University of Haifa, Haifa, Israel
- Mathematics Colloquium, The Technion, Haifa, Israel
- Fourth Haifa Workshop on Interdisciplinary Applications of Graph Theory, Combinatorics and Algorithms, University of Haifa, Haifa, Israel
- France-Israel Expert Workshop on Graph Classes and Graph Algorithms, University of Haifa, Haifa, Israel
- Computer Science/ Discrete Math Seminar, IAS, Princeton, NJ
- Combinatorics Seminar, LaPCS, Université Claude Bernard Lyon 1, Lyon, France
- Oberwolfach Meeting on Combinatorics, Oberwolfach, Germany

### 2003

- Advances in Graph and Matroid Theory, The Ohio State University, Columbus, OH
- DIMACS Mixer Series, Princeton, NJ
- Princeton/Oxford Meeting, Oxford University, Oxford, England
- Combinatorics, Probability and Algorithms, Centre de recherches mathématiques, Université de Montreal, Montreal, Canada

- Combinatorics Seminar, Tel-Aviv University, Tel-Aviv, Israel
- Spring School on Combinatorics, Topology and Convexity at the Institute for Advanced Study, The Hebrew University at Jerusalem, Jerusalem, Israel
- Erdos Lecture, The Hebrew University at Jerusalem, Jerusalem, Israel
- Special Colloquium, Haifa University, Haifa, Israel
- CMI Research Academy, Clay Mathematics Institute, Cambridge, MA
- Combinatorics Seminar, University of Pennsylvania, Philadelphia, PA
- CS Theory Seminar, Department of Computer Science, Princeton, NJ
- ACO Colloquium, Georgia Institute of Technology, Atlanta, GA
- Tenth Workshop on Applied/Advanced Research in Combinatorial Optimization, University of Southern Denmark, Odense, Denmark
- Oberwolfach Meeting on Graph Theory, Oberwolfach, Germany
- Tutte Seminar, University of Waterloo, Ontario, Canada

## 2002

- ACCOTA 2002 International Workshop, Combinatorial and Computational Aspects of Optimization, Topology and Algebra, San Cristbal de las Casas, Chiapas, Mexico
- 2nd Columbia Optimization Day, Advances in Optimization, Columbia University, New York, NY
- ARCC Workshop on The Perfect Graph Conjecture, American Institute of Mathematics, Palo Alto, CA
- The Joint ALADDIN/Theory/Operations Research Seminar, Carnegie Mellon University, Pittsburgh, PA
- Discrete Math/Theory of Computing Seminar, Rutgers University, Piscataway, NJ
- Combinatorics and Number Theory Seminar, SUNY at Binghamton
- A Conference on Matroid Structure Theory in Honour of W.T. Tutte, The Ohio State University
- CS Theory Seminar, Department of Computer Science, Princeton

- Oberwolfach Meeting on Geometric Convex Combinatorics, Oberwolfach, Germany
- Discrete Mathematics Day at Dartmouth College

**2001**

- Courant Institute Geometry Seminar, NYU, New York, NY
- Princeton Discrete Math Seminar, Princeton, NJ
- Sectional meeting of AMS, April 28-29, 2001  
Session on matchings in graphs and hypergraphs

**2000**

- Bar Ilan University Discrete Math Seminar, Israel
- The Technion Discrete Math Seminar, Israel