

CURRICULUM VITAE  
CIPRIAN MANOLESCU

Department of Mathematics  
Columbia University  
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**Personal:**

Born December 24, 1978 in Alexandria, Romania  
Citizenship: Romania. US Permanent Resident

**Education:**

Ph.D. Harvard University, June 2004  
Advisor: Peter B. Kronheimer  
Thesis: *A spectrum valued TQFT from the Seiberg-Witten equations*  
B.A. Harvard University, June 2001, Summa cum laude in Mathematics  
Senior thesis: *Finite dimensional approximation in Seiberg-Witten theory*

**Research Interests:**

Gauge theory, symplectic geometry, low-dimensional topology

**Professional History:**

Associate Professor, UCLA, 2008-Present  
Associate Professor, Columbia University, 2008-Present  
Assistant Professor, Columbia University, 2005-2008  
Research Fellow, Clay Mathematics Institute, 2004-2008  
Veblen Research Instructor, joint position at Princeton University and the Institute for Advanced Study, 2004-2005

**Honors and Awards:**

University Research Fellowship of The Royal Society (UK), 2008  
NSF Grant DMS-0803465 "Applications and Refinements of Floer Homology," 2008-2011  
Clay Research Fellowship, 2004-2008  
Miller Fellowship at UC Berkeley, 2004 (declined)  
Putnam Fellowship at Harvard University, 2002-2004  
The Frank and Brennie Morgan Prize for Outstanding Research in Mathematics  
by an Undergraduate Student, awarded jointly by AMS-MAA-SIAM, 2001  
The Mumford Prize for the most promising undergraduate in the Mathematics Department  
at Harvard, June 2001  
The Hoopes Prize for outstanding senior thesis at Harvard, June 2001  
Elected in Phi Beta Kappa as a junior at Harvard, spring 2000  
Harvard College Research Program grant (advisor: Peter Kronheimer) - summer 1999 and 2000  
John Harvard Scholar (1998-2001)  
Putnam fellow, for being placed in the top five on the Putnam Mathematical Contest: 1997, 1998, and 2000  
Detur Book Prize for top academic achievement during the freshman year at Harvard, 1998

Three Gold Medals with maximal score (42 points) at the International Mathematical Olympiad:  
Toronto, Canada (1995); Bombay, India (1996); Mar del Plata, Argentina (1997)  
Two Gold Medals with maximal score at the Balkan Mathematical Olympiad:  
Bacau, Romania (1996); Kalambaka, Greece (1997)

### Publications:

On the Khovanov and knot Floer homologies of quasi-alternating links (with P. Ozsváth),  
*Proceedings of the Fourteenth Gökova Geometry / Topology Conference* (2007), to appear  
Combinatorial cobordism maps in Heegaard Floer theory (with R. Lipshitz and J. Wang),  
*Duke Mathematical Journal* (2008), to appear  
On combinatorial link Floer homology (with P. Ozsváth, D. Thurston and Z. Szabó),  
*Geometry and Topology*, Vol. 11 (2007), 2339-2412  
A combinatorial description of knot Floer homology (with P. Ozsváth and S. Sarkar),  
*Annals of Mathematics* (2008), to appear  
An unoriented skein exact triangle for knot Floer homology,  
*Mathematical Research Letters*, Vol. 14 (2007), 839-852  
Link homology theories from symplectic geometry,  
*Advances in Mathematics*, Vol. 211 (2007), 363-416  
A concordance invariant from the Floer homology of double branched covers (with B. Owens),  
*International Math. Research Notices*, Vol. 2007, doi:10.193/imrn/rnm077  
Nilpotent slices, Hilbert schemes, and the Jones polynomial,  
*Duke Mathematical Journal*, Vol. 132 (2006), 311-369  
A gluing theorem for the relative Bauer-Furuta invariants,  
*Journal of Differential Geometry*, Vol. 76 (2007), 117-153  
Seiberg-Witten-Floer stable homotopy type of 3-manifolds with  $b_1 = 0$ ,  
*Geometry and Topology*, Vol. 7 (2003), 889-932

### Preprints:

Symplectic instanton homology (with C. Woodward), in preparation  
Periodic Floer pro-spectra from the Seiberg-Witten equations (with P.B. Kronheimer), math/0203243

### Conference Talks:

Fifty Years since Fox and Milnor, conference at Brandeis University, June 2008  
Workshop on Mirror Symmetry and Symplectic Geometry, MIT, May 2008  
Knots in Washington XXVI, George Washington University, April 2008  
Great Lakes Geometry Conference, University of Minnesota, September 2007  
Conference on Symplectic Geometry and Physics, ETH Zürich, Switzerland, September 2007  
Gökova Geometry / Topology Conference, Gökova, Turkey, May 2007  
Link homology and categorification, conference at Kyoto University, May 2007  
Midwest Topology Conference, Indiana University, October 2006  
Categorification in Algebra and Topology, Uppsala University, Sweden, September 2006  
IAS/PCMI Program in Low Dimensional Topology, Park City, July 2006  
Conference in Honor of the 60th Birthday of John Morgan, Columbia University, April 2006  
AMS Spring Southeastern Meeting, Florida International University, April 2006  
Around Khovanov Homology, workshop in Montréal, Canada, October 2005  
Differentialgeometrie im Großen, workshop in Oberwolfach, Germany, August 2005  
SYMAT'05 Workshop on symplectic topology in Lisbon, Portugal, July 2005  
IAS Holomorphic Curves Workshop, Princeton, May-June 2005

Georgia Topology Conference, University of Georgia at Athens, August 2004  
Conference on 3-dimensional topology at Ohio State University, December 2003  
MSRI Workshop on Floer homology for 3-manifolds in Banff, Canada, November 2003  
Conference on invariants in low-dimensional topology at the Renyi Institute, Budapest, June 2003  
MAA MathFest in Burlington, Vermont, August 2002  
JAMI Workshop on low-dimensional topology at Johns Hopkins University, March 2002

My work was also mentioned in:

*Link homology and categorification*, talk by Mikhail Khovanov at the International Congress of Mathematicians, Madrid, August 2006  
*Finite dimensional approximations in geometry*, talk by Mikio Furuta at the International Congress of Mathematicians, Beijing, August 2002  
*Floer homotopy type of rational homology 3-spheres, after Manolescu*, talk by Peter Kronheimer at the Conference on 4-dimensional manifolds, Oberwolfach, July 2001

### **Seminar Talks:**

California Institute of Technology, topology seminar, March 2008  
Imperial College, UK, geometry and string theory seminar, March 2008  
University of Cambridge, UK, geometry seminar, March 2008  
University of Michigan, topology seminar, November 2007  
Northwestern University, geometry and physics seminar, October 2007  
Columbia University, gauge theory and symplectic geometry seminar, October 2007  
Philadelphia Area Contact / Topology seminar at Bryn Mawr, April 2007  
New York University, differential geometry and topology seminar, April 2007  
Massachusetts Institute of Technology, geometry seminar, March 2007  
Bay Area Topology Seminar at Stanford University, November 2006  
New York University, differential geometry seminar, November 2006  
Harvard University, gauge theory and topology seminar, October 2006  
Columbia University, summer seminar on Floer homology, July 2006  
University of Marseille, France, geometry seminar, March 2006  
University of Aarhus, Denmark, topology seminar, March 2006  
Stanford University, topology seminar, February 2006  
Columbia University, gauge theory and symplectic geometry seminar, February 2006  
University of Cambridge, UK, geometry seminar, October 2005  
Georgia Institute of Technology, topology seminar, March 2005  
Harvard University, gauge theory and topology seminar, February 2005  
UC Berkeley, topology seminar, January 2005  
Stanford University, topology seminar, January 2005  
Stanford University, symplectic geometry seminar, January 2005  
Columbia University, gauge theory and symplectic geometry seminar, December 2004  
Princeton University, topology seminar, December 2004  
California Institute of Technology, geometry seminar, November 2004  
University of Notre Dame, Felix Klein seminar, April 2004  
McMaster University, geometry and topology seminar, December 2003  
Michigan State University, symplectic geometry seminar, October 2003  
LMU Munich, Germany, geometry seminar, June 2003  
Universidade do Porto, Portugal, geometry and topology seminar, January 2003  
Université du Québec à Montréal, geometry and topology seminar, September 2001  
University of Notre Dame, geometry and topology seminar, May 2001

Harvard University, gauge theory and topology seminar, April 2001

**Colloquia:**

Rutgers University, October 2007  
Northwestern University, October 2007  
Bonn University, Germany, July 2007  
Bryn Mawr College, April 2007  
University of California at Los Angeles, January 2007  
Rice University, March 2006  
California Institute of Technology, November 2004

**Teaching Experience:**

Individual Reading Courses for several undergraduate students at Columbia:  
Dmytro Karabash (Spring 2006), Mikhail Shklyar (Spring 2006), Geillan Aly (Fall 2006),  
Mio Alter (Fall 2006), Sanjay Arora (Spring 2007)  
Supervised the senior thesis of Michael Lock at Columbia, Spring 2008  
Supervised an undergraduate research project of Dmytro Karabash at Columbia, Summer 2006  
Math V1201x - Calculus III, Columbia, Fall 2007  
Math W4051 - Topology, Columbia, Fall 2005 and Fall 2007  
Seminar on 4-manifolds, Princeton, Spring 2005  
Tutorial on Morse Theory, Harvard, Fall 2003  
Tutorial on Symplectic and Contact Geometry, Harvard, Summer 2003  
Multivariable Calculus, Harvard, Spring 2003  
Tutorial on Knots and Three-Manifolds, Harvard, Summer 2002  
Course Assistant for various classes at Harvard, 1998-2004; three times awarded the Certificate of Distinction  
in Teaching by the Derek Bok Center, based on student evaluations for course assistants:  
Fall 1998, Spring 1999, Spring 2002

**Service and miscellanea:**

Member of the Editorial Board of *Selecta Mathematica*  
Referee for *Journal of the American Mathematical Society*, *Inventiones Mathematicae*,  
*Geometry and Topology*, *International Mathematics Research Notices*,  
*Duke Mathematical Journal*, *Journal of Topology*, *Mathematical Research Letters*,  
*Mathematische Annalen*, *Journal of Differential Geometry*  
Reviewer for *Mathematical Reviews*  
Author of a Matlab program for doing computations in Heegaard Floer homology  
Co-organizer of the gauge theory and symplectic geometry seminar at Columbia, 2005-2008  
Member of the Ritt Hiring Committee, Columbia, 2007-2008  
Coach of the Columbia team for the Putnam mathematical contest, 2005-2007