

# Kirsten Graham Wickelgren

## Curriculum Vitae

### Education

- **Stanford University**, Stanford, California.  
Ph.D. in mathematics 2009.  
Thesis: *Lower central series obstructions to homotopy sections of curves over number fields*.  
Advisor: Gunnar Carlsson.
- **L'École Normale Supérieure**, Paris, France.  
Titre d'ancien élève de l'école normale supérieure 2004.  
Advisor: Pierre Lochak.
- **Harvard University**, Cambridge, Massachusetts.  
A.B.-A.M. magna cum laude 2003 A.M. in mathematics.

### Papers

- *n*-Nilpotent obstructions to  $\pi_1$  sections of  $\mathbb{P}^1 - \{0, 1, \infty\}$  and Massey products, to appear in the proceedings volume of Development of Galois-Teichmüller theory and anabelian geometry, (Kyoto October 2010).
- 3-*Nilpotent obstructions to  $\pi_1$  sections of  $\mathbb{P}_{\mathbb{Q}}^1 - \{0, 1, \infty\}$* , to appear in: The Arithmetic of Fundamental Groups, edited by Jakob Stix, proceedings volume for PIA 2010, Springer-Verlag.
- with Ravi Vakil, *Universal covering spaces and fundamental groups in algebraic geometry as schemes*, Journal de Théorie des Nombres de Bordeaux, 23 no. 2 (2011), p. 489-526.
- *2-*Nilpotent real section conjecture**, submitted 2012.
- with Jordan Ellenberg, *The second nilpotent obstruction to rational points on curves over one-dimensional function fields*, in preparation.
- with S. Iams, B. Katz, C. Silva, and B. Street, *On weakly mixing and doubly ergodic nonsingular actions*, Colloq. Math, 103, 2005, no. 2, 247-264

### Academic Honors

- American Institute of Mathematics 5-year Fellowship: 2009-2014
- Stanford Graduate Research Fellowship: 2003
- National Science Foundation Graduate Research Fellowship: 2003
- Harvard-École Normale Supérieure Exchange Fellowship: 2003
- Phi Beta Kappa (Harvard University): 2002

- John Harvard Scholarship (Harvard University): 2001, 2002
- Detur Prize (Harvard University): 2000
- Intel Science Talent Search Finalist (formerly Westinghouse Science Talent Search): 1999.  
Paper: *Re-calculation of the deflection of light by the sun based on an equation from string theory.*  
Advisor: Brian Greene.

## Teaching

- Professor, Harvard University, Math 131: Topology I (Fall 2011).
- Professor, Harvard University, Math 137: Algebraic Geometry (Spring 2010).
- Teaching Assistant, Stanford University, Math 51: Linear Algebra and Differential Calculus of Several Variables (Fall 2007).
- Course Assistant, Harvard University, Math 113: Complex Analysis (Fall 2001).

## Talks

- 2/15/12, Université de Montréal, Job-candidate talk.
- 2/8/12, University of Michigan, Algebraic Geometry Seminar.
- 1/27/12, University of Pennsylvania, Special lecture.
- 1/19/12, Colorado State University, Job-candidate talk.
- 12/8/11, Georgia Institute of Technology, Job-candidate talk.
- 12/6/11, Emory, Colloquium.
- 11/7/11, MIT, Topology Seminar.
- 10/25/11, Berkeley, Number Theory Seminar.
- 9/23/11, Brown University, Algebraic Geometry Seminar.
- 3/17/11, Georgia Institute of Technology, Algebra Seminar.
- 2/11/11, Wesleyan University, Algebra Seminar.
- 12/2/10, McGill University, Québec-Vermont Number Theory Seminar.
- 11/19/10, Case Western Reserve, Colloquium.
- 11/8/10, MIT, Topology Seminar.
- 10/27/10, Mathematical Society of Japan Seasonal Institute at RIMS Kyoto, Development of Galois-Teichmüller theory and anabelian geometry.
- 4/29/10, Pennsylvania State University, Number Theory Seminar.
- 4/19/10, Harvard University, Faculty Colloquium.
- 3/23/10, Rice University, Algebraic Geometry Seminar.
- 2/9/2010, Universität Heidelberg MATCH, The arithmetic of fundamental groups PIA 2010.
- 11/10/09, Harvard, Harvard-MIT Algebraic Geometry Seminar.
- 11/6/09, University of Madison-Wisconsin, Midwest Number Theory Day.
- 10/26/09, MIT, Topology Seminar.

- 7/28/09, Newton Institute, Non-Abelian Fundamental Groups in Arithmetic Geometry: Introductory Workshop.
- 4/7/09, University Illinois Urbana-Champaign, Topology Seminar.
- 9/25/09, Brandeis, Everytopic Seminar.
- 11/4/08, University of Chicago, Topology Seminar.
- 11/3/07, University of Wisconsin, Graduate Student Conference in Number Theory.
- 10/26/2007, Stanford University, Algebraic Geometry Seminar.

### **Conferences Attended**

- **Development of Galois-Teichmüller theory and anabelian geometry.** Mathematical Society of Japan Seasonal Institute at RIMS Kyoto, 10/25/10-10/30/10.
- **Galois Theoretic Arithmetic Geomtry.** International Institute for Advanced Studies Kyoto, 10/19/10-10/24/10.
- **Number Theory and Representation Theory: a conference in honor of the 60th birthday of Benedict Gross.** Harvard, 6/2/10-6/5/10.
- **PIA 2010, The Arithmetic of Fundamental Groups.** Universität Heidelberg MATCH, 2/8/10-2/12/10.
- **Rational Curves and  $\mathbb{A}^1$ -homotopy Theory,** American Institute of Mathematics, 10/5/09-10/9/09.
- **Non-Abelian Fundamental Groups in Arithmetic Geometry** Isaac Newton Institute for Mathematical Sciences, 7/27/09-7/31/09, 12/7/09 -12/11/09.
- **MSRI: Program in Algebraic Geometry.** Mathematical Sciences Research Institute in Berkeley, CA Spring 2009.
- **CMI Workshop: The Foundations of Algebraic Geometry: Grothendieck's EGA Unbound** Clay Mathematics Institute Cambridge, MA 8/08.
- **Graduate Student Conference in Number Theory.** University of Wisconsin 11/07.
- **Abel Symposium 2007: Algebraic Topology.** Oslo, Norway 8/07.
- **Homotopy theory of schemes.** Thematic Program on Geometric Applications of Homotopy Theory. Fields Institute 3/07.
- **Explicit methods for rational points on curves.** Banff International Research Station 2/07.
- **Western Algebraic Geometry Seminar:**  
Colorado State University 10/07  
University of Washington 04/07  
University of Utah 11/06
- **Graduate Student Warm-up Workshop for AMS Summer Institute.** Seattle, Washington 7/05.

### **Other Activities**

- **AMS special session on rational points on varieties.** January 5-6, 2012. Co-organizer with Jennifer Balakrishnan, Bjorn Poonen, and Bianca Viray.
- **PROMYS** program in mathematics for young scientists. Mentor 2010. Real Algebraic Curves.
- **Honors expository undergraduate thesis.** Harvard University. Spring 2003. Billiards in Polygons. Advisor: Curtis McMullen.
- **Summer Research Experience for Undergraduates:** Williams College. Summer 2002. Ergodic theory group. Advisor: Cesar Silva.
- **Summer Research Experience for Undergraduates:** Cornell University. Summer 2001. Linear Transformations Preserving the Voronoi Polyhedron. Advisor: Konstantin Rybnikov.
- **Global Science Scholar Summer Internship.** Lucent Technologies. Summer 2000. Minimal cost networks. Advisor: Iraj Saniee.

### **References**

Available upon request.