Mihran Papikian

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Education

- **University of Michigan**, Ann Arbor, Michigan.
  Ph.D. in Mathematics, 2003.
  Thesis: *Optimal elliptic curves, discriminants, and the degree conjecture over function fields.*
  Advisor: Brian Conrad.
- **Yerevan State University**, Yerevan, Armenia.
  Diploma with Highest Honors in Mathematics, 1997.

Employment

- **Pennsylvania State University**, University Park, Pennsylvania.
  Assistant Professor of Mathematics, August 2007 – present.
- **Stanford University**, Stanford, California.
  Szegö Assistant Professor of Mathematics, September 2003 – August 2007.

Research Interests

- Number Theory and Algebraic Geometry.
- Drinfeld modular varieties and their generalizations; Langlands program.

Awards and Honors

- **NSF Grant** DMS-0801208, 06/01/2008–05/31/2011, sole principal investigator.
- **Humboldt Research Fellowship**, 09/01/2008–04/30/2009.
- **Emil Artin Junior Prize**, 2005.
  Awarded for the article "On the degree of modular parametrizations over function fields", *Journal of Number Theory* **97** (2002), 317–349.

- **European Postdoctoral Institute Fellowship**, 2003.

  Two-year research grant awarded by a consortium of nine European research institutes. Only five grants are awarded annually.

- **Clay Mathematics Institute Liftoff Mathematician**, 2003.

- **Wirt and Mary Cornwell Prize in Mathematics**, University of Michigan, 2003.

- **Rackham Predoctoral Fellowship**, 2002.

  One-year research grant from the University of Michigan awarded for outstanding progress toward a thesis.

- **Diploma with Highest Honors**, Yerevan State University, 1997.

Publications

1. Local diophantine properties of modular curves of $\mathcal{D}$-elliptic sheaves, *submitted for publication.*
2. Endomorphisms of exceptional $\mathcal{D}$-elliptic sheaves, *Mathematische Zeitschrift*, to appear.
3. On hyperelliptic modular curves over function fields, *Archiv der Mathematik* **92** (2009), 291–302.
4. Genus formula for modular curves of $\mathcal{D}$-elliptic sheaves, *Archiv der Mathematik* **92** (2009), 237–250.
5. Modular varieties of $\mathcal{D}$-elliptic sheaves and the Weil-Deligne bound, *Journal für die reine und angewandte Mathematik* **626** (2009), 115–134.
6. On eigenvalues of p-adic curvature, *Manuscripta Mathematica* **127** (2008), 397–410.
7. Modular curves of $\mathcal{D}$-elliptic sheaves are asymptotically optimal, *Mathematical Research Letters* **15** (2008), 525–536.
8. Analogue of the degree conjecture over function fields, *Transactions of the American Mathematical Society* **359** (2007), 3483–3503.
9. Abelian subvarieties of Drinfeld Jacobians and congruences modulo the characteristic, *Mathematische Annalen* **337** (2007), 139–157.
10. The number of rational points on Drinfeld modular varieties over finite fields, *International Mathematics Research Notices* **Article ID 94356** (2006), 1–36.
11. On the torsion of optimal elliptic curves over function fields, *Mathematical Research Letters* **13** (2006), 321–331.
12. On the variation of Tate-Shafarevich groups of elliptic curves over hyperelliptic curves, *Journal of Number Theory* **115** (2005), 249–283.

13. Rigid-analytic geometry and abelian varieties, *Contemporary Mathematics* **388** (2005), 145–160.

14. Pesenti-Szpiro inequality for optimal elliptic curves, *Journal of Number Theory* **114** (2005), 361–393.

15. On component groups of Jacobians of Drinfeld modular curves, *Annales de l'Institut Fourier* **54** (2004), 2163–2199.

16. On the degree of modular parametrizations over function fields, *Journal of Number Theory* **97** (2002), 317–349.

17. On coset coverings of solutions of homogeneous cubic equations over finite fields, *Electronic Journal of Combinatorics* **8** (2001), # R22 (Joint with A. Aleksanyan).

Visiting Positions

- **Universität des Saarlands**, September 2008 – April 2009.
- **Institut des Hautes Études Scientifiques**, March 2005 – August 2005.
- **Universität des Saarlands**, November 2004 – February 2005.
- **Max-Planck-Institut für Mathematik** (Bonn), September 2004 – October 2004.

Selected Invited Presentations

Conferences

- Number Theory Workshop, Saarbrücken, April 2009.
- Special Session on Arithmetic Geometry, AMS and MAA Joint Meeting, New Orleans, January 2007.
- Profinite Geometry and Related Moduli Spaces, Red Lodge, April 2006.
- XXIVes Journées Arithmétiques, Marseille, July 2005.
- Algebraische Zahlentheorie, Oberwolfach, June 2005.
- Algebraic Geometry Conference, Snowbird, July 2004.
- Midwest Algebraic Number Theory Day, Chicago, May 2003.

Colloquia

- Georg-August-Universität Göttingen, April 2009.
- Universität des Saarlands, December 2008.

- University of Iowa, February 2007.
- University of Arizona, February 2007.
- University at Buffalo, February 2007.
- University of South Carolina, February 2007.
- University of Illinois at Urbana-Champaign, January 2007.
- Georgia Institute of Technology, January 2007.
- Pennsylvania State University, January 2007.
- Texas A&M University, January 2007.
- University of Pittsburgh, January 2007.

Number Theory Seminars

- Universität Duisburg-Essen, April 2009.
- Albert-Ludwigs-Universität Freiburg, April 2009.
- Institut de Mathématiques de Toulouse, March 2009.
- Institut de Mathématiques de Jussieu (Paris), March 2009.
- Universität des Saarlands, December 2008.
- University of Michigan, March 2008.
- Pennsylvania State University, January 2008.
- Stanford University, June 2007.
- University of Texas at Austin, March 2006.
- University of California at Los Angeles, February 2006.
- California Institute of Technology, December 2005.
- Max-Planck-Institut für Mathematik (Bonn), September 2004.
- University of California at Berkeley, May 2004.
- University of Toronto, February 2003.
- Harvard University, November 2002.

Teaching Experience

- **Assistant Professor**, Pennsylvania State University, August 2007–present.
  Math 436: Linear Algebra. Spring 2008, 2 sections.
- **Szegö Assistant Professor**, Stanford University, September 2003 – August 2007.
  I taught the following courses:
  Multivariable Calculus (undergraduate course), 6 times;
  Group Theory (undergraduate course);
  Linear Algebra II (advanced undergraduate course);
  Drinfeld modules (graduate topics course);
  Modular Galois Representations (graduate topics course).
- **Graduate Student Instructor**, University of Michigan, September 1998 – August 2003.
  I taught Pre-Calculus and Calculus I, and supervised computer lab sessions for Calculus III.

Other Mathematical Activities

- Ph.D. committees: I. Sakelaridis (Stanford, 2006), D. Lecomte (Stanford, 2006), K. Buyukboduk (Stanford, 2007).
- Referee for *Archiv der Mathematik, Documenta Mathematica, Inventiones Mathematicae, Journal of Number Theory, Mathematische Annalen, Mathematical Research Letters.*
- Reviewer for *Mathematical Reviews.*
- Co-organizer of Stanford Number Theory Seminar, 2003–2004.

References

- Brian Conrad, Professor of Mathematics, Stanford University.
  `conrad@math.stanford.edu`
- Ernst-Ulrich Gekeler, Professor of Mathematics, Universität des Saarlands.
  `gekeler@math.uni-sb.de`