

Jane Piore Gilman

Professor of Mathematics, Rutgers University, Newark
Short Curriculum Vitae
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Contact Information

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Education

B.S. University of Chicago December 1965
Ph.D. Columbia University May 1971

Employment

1984 - present	Professor	Department of Mathematics, Rutgers-Newark
1977 - 1984	Associate Professor	Department of Mathematics, Rutgers-Newark
1972 - 1977	Assistant Professor	Department of Mathematics, Rutgers-Newark
1971 - 1972	Instructor	Department of Mathematics, SUNY Stony Brook

Supported Visiting Positions

9/08 - 8/10	Analysis Program Officer	National Science Foundation
7/06 - 12/06	Visiting Fellow	Yale University
10/95-12/95	Member	Institutes des Hautes Études Scientifiques
1993 (4 weeks)	Visitor	University of Warwick
1990 - 1991	Visiting Professor	Princeton University
1989 (4 weeks)	Member	Mittag-Leffler Institute, Sweden
1988 - 1989	Visiting Mathematician	Princeton University
1/86 - 6/86	Member	Mathematical Sciences Research Institute
1979 - 1980	Member	Institute for Advanced Study

Other Visiting Positions

1/96 - 6/96	Member	Mathematical Sciences Research Institute
1/92 - 6/92	Member	Institute for Advanced Study

Chair, FASN department of Mathematics, 1982-1990.

Fields of Interest: Kleinian Groups, Teichmüller theory, Hyperbolic Geometry including computational aspects.

Recent Grants

1. NSF Grant, Triennial Ahlfors-Bers Colloquium, PI, 2008-2009.
2. Rutgers University, Research Council Colloquium grant, to support 2008 Ahlfors-Bers Colloquium, PI, 2007-8.
3. Rutgers University, Research Council grant, PI, 2006-2007.
4. National Security Agency grant, *Algorithms, Discreteness Criteria, and Farey Words*, PI, 2003-2005.

Refereed Research Publications since 2005

1. Discreteness Criteria and the Hyperbolic Geometry of Palindromes (with Linda Keen), *J. Conformal Geometry and Dynamics*, **13** (2009), 76-90.
2. Cutting Sequences and Palindromes, (with Linda Keen) in *Proceedings of the Conference on Geometry of Riemann Surfaces at Anogia 2007*, London Math Soc Lecture Note Series, (2009) 24 pages, in press.
3. The Structure of Two-Parabolic Space: Parabolic Dust and Iterations, *Geometriae Dedicata*, **131** (2008), 27-48.
4. Canonical Symplectic Representations for Prime Order Conjugacy Classes of the Mapping Class Group, *Journal of Algebra* **318** (2007), 430-455.
5. Prime Order Automorphisms of Riemann surfaces, in *Proceedings of the International Workshop on Teichmüller Theory and Moduli Problems*, HRI, Lecture Notes Series, Ramanujan Mathematical Society, India, to be published in 2009, 21 pages.
6. Informative Words and Discreteness in *Combinatorial Group Theory, Discrete Groups, and Number Theory*, AMS CONM **421** (2006), 147-155.
7. Classical Two-Parabolic T -Schottky Groups (with Peter Waterman), *Journal D'Analyse*, Volume XCVIII, (2006), 1-42.
8. Planar Families of Discrete Groups. (with Linda Keen) in *The Geometry of Riemann Surfaces and Abelian Varieties*, AMS CONM, **397** (2006), 79-88.
9. Boundaries for Two-Parabolic Schottky Groups in *Spaces of Kleinian Groups*, London Math Soc Lecture Notes **329**, (2005), 283-299.
10. The Geometry of Two-Generator Groups: Hyperelliptic Handlebodies (with Linda Keen), *Geometriae Dedicata*, Vol 110 (2005), 159-190.

Submitted Paper

1. Enumerating Palindromes in Rank Two Free Groups (with Linda Keen), submitted to *Journal of Algebra*, (2008), resubmitted with suggested revisions, June 26, 2009, 18 pages.

Graduate Textbooks

1. *Complex Analysis in the Spirit of Lipman Bers*, (with I. Kra and R. Rodriguez) Springer-Verlag, Graduate Texts in Mathematics **245** (2007).
2. *Topics in Complex Analysis and Hyperbolic Geometry*, Graduate text, companion volume to [1], (with I. Kra and R. Rodriguez), under contract to be published by Springer-Verlag, in preparation.

Conference Proceedings Edited

1. Editor (with Canary, Heinonen, and Masur) *The Legacy Continues: in the Tradition of Ahlfors-Bers, IV*, Proceedings 2005 Ahlfors-Bers Colloquium, AMS CONM, **432** June 2007.
2. Editor (with Masur, Bonk, Minsky and Wolf), Proceedings 2008 Ahlfors-Bers Colloquium, to be published by AMS CONM, in progress.

Doctoral Students¹

1. Yicheng Jiang, *Complexity of the Fuchsian Group Discreteness Algorithm*, January 2000, published in *Ann. Acad. Sci. Fenn.* **26** (2001) 375-390; current position: industry.
2. Vidur Malik, *Curves Generated on Surfaces by the Gilman-Maskit Algorithm*, May 2007, Awarded Dissertation fellowship by the Graduate School-Newark for 2006-07; thesis to be published in AMS-CONM, current position: Visiting Assistant Professor, Mathematics Department, University of Cincinnati.
3. Karan Puri, *Factorization of Isometries of Hyperbolic 4-Space and a Discreteness Condition*, May 2009. Awarded Dissertation fellowship by the Graduate School-Newark for 2008-09; tenure track position beginning F 2009: Assistant Professor, Queensborough Community College, CUNY.
4. Andrew Silverio, current student F 2008 - to present.

Doctoral Student Co-advised with Denis Blackmore of NJIT

5. Chengwen Wang, *On the Periodic Solutions for Asymptotically Nonlinear Hamiltonian Systems*, May 2000, thesis published in *Int. J. of Differential Equations*, 7 (2003), no. 3, 295-309. Current position: Assistant Professor, Essex County College, Newark, NJ.

¹The doctoral program in mathematics at Rutgers-Newark began in 1995. Yicheng Jiang was the first to complete the program.

One Hour Invited Addresses since 2005

1. *Palindromes and Discreteness*, Colloquium, Howard University, F 2009 (scheduled).
2. *The Non-Euclidean-Euclidean Algorithm*, Complex Analysis and Dynamics seminar, CUNY Graduate center, May 15, 2009.
3. *Palindromes, Continued Fractions, and $PSL(2, \mathbf{C})$ Discreteness Criteria*, Cornell Topology/Geometry Seminar, May 6, 2009.
4. *Continued Fractions and the Hyperbolic Geometry of Three-manifolds*, key-note speaker, first annual DC area graduate student conference, George Washington U., S 2009.
5. *Palindromes, Primitives and Kleinian groups*, Topology/Geometry seminar, U. Md, Nov. 2008.
6. *A Survey of Schottky Groups*, MSRI August 2007, to be published as lecture notes and video by MSRI.
7. *Finding Parabolic Dust and the Structure of Two-parabolic Space*, Topology and Geometry Seminar, U. Warwick, June 2007.
8. *Finding Parabolic Dust and the Structure of Two-parabolic Space*, Complex Analysis Seminar, CUNY Graduate Center S 2007.
9. *Informative Words and Discreteness*, Topology and Geometry Seminar, Rutgers-New Brunswick, S 2007.
10. *Informative Words and Discreteness*, Colloquium, Wesleyan University, S 2007.
11. *The Structure of Two-parabolic Space*, Topology & Geometry Seminar, Yale University, November 2006.
12. *Informative Words and Discreteness*, Topology& Geometry Seminar, U. Conn, October 2006.
13. *Informative Words and Discreteness*, Group Theory Seminar, McGill University, March 2006.
14. *Finding Parabolic Dust*, Workshop on Teichmüller theory and Moduli Problems, Harish-Chandra Research Institute, Allahabad, India, January 2006.
15. *Classical T-Schottky Groups*, Topology Seminar, Rutgers, New Brunswick, S 2005.

Other recent invited addresses in AMS Special Sessions

1. *Palindromes and Discreteness Algorithms*, AMS Special Session on Computational Algebraic and Analytic Geometry for Low-dimensional Varieties , January 2009.
2. *Informative Words and Discreteness: Palindromes and Kleinian Groups*, AMS Special Session on Hyperbolic Geometry, March 2008.

3. *Canonical Forms for Prime Order Symplectic Matrices* AMS Special Session on Automorphisms of Curves, April 2007.
4. *A Structure Theorem for Two-Parabolic Space*, AMS special session on Kleinian groups and Hyperbolic Geometry, October 2006.
5. *Hyperelliptic Handlebodies*, AMS Special Session on Automorphisms of Surfaces and Curves, Santa Barbara, April 2005.

Recent Professional Service

1. Refereeing for various journals including Journal of Pure and Applied Algebra, Journal of the Math. Society of Japan, Revisita Mathematica Iberoamericana, Journal of Conformal Geometry and Dynamics, Math Research Letters, Journal of Pure and Applied Algebra, Journal D'Analyse Mathématique, Israel Journal of Mathematics, Publicacions Matemàtiques, Journal of Algebraic and Geometric Topology, Journal of Differential Geometry, Geometric Topology.
2. Member, Scientific Organizing Committee, Ahlfors-Bers Colloquium Lectures, 1997-2000 and 2003-2006; Chair, 2006-2008. Colloquium held at Rutgers-Newark in May 2008. Over 180 mathematicians from more than 12 countries attended.
3. Member, NSF panel on Geometric Function Theory, February 2007.
4. Member, Sigma Xi committee on Distinguished Lectureships, 2003-2006.
5. Member, External Review Panel, University of Helsinki, Fall 2005.