Curriculum Vitae
Eriko Hironaka

Contact Information

University address: Pure Mathematics
                       Department of Mathematics
                       College of Arts & Sciences
                       1017 Academic Way, 208 Love Building
                       Florida State University
                       Tallahassee, Florida 32306-4510
                       Phone: 850-644-2202; Fax: 850-644-4053

E-mail address: hironaka@math.fsu.edu
Web site: www.math.fsu.edu/~hironaka

Professional Preparation

1990	Doctor of Philosophy, Brown University, Providence, RI. Advisor: Alan Landman. Thesis Title: *Abelian coverings of the complex plane branched along configurations of real lines*.
1984	BA, Harvard University, Cambridge, MA. Major: Mathematics.

Current Membership in Professional Organizations

American Mathematical Society

Professional Experience

2011–present	Professor, Florida State University.
2002–2011	Associate Professor, Mathematics, Florida State University.
1997–2002	Assistant Professor, Mathematics, Florida State University.
1994–1997	C.L.T.A. Assistant Professor, Mathematics, University of Toronto.
1992–1994	Szego Instructor, Mathematics, Stanford University.

Long Term Visiting Professorships

2011–2012	Tokyo Institute of Technology, Tokyo, Japan. Department of Mathematics.
Fall 2009	Harvard University, Cambridge, MA. Department of Mathematics.
2004–2005	Osaka University, Osaka, Japan. Department of Mathematics.
Fall 1999	Harvard University, Cambridge, MA. Department of Mathematics.
1991–1992	Visiting Researcher, Max-Planck-Institut-fur-Mathematik, Bonn, Germany.
1990–1991	Visiting Assistant Professor, Stanford University. Department of Mathematics.
1989–1990	Visiting Assistant Professor, Haverford College. Department of Mathematics.

Summer Visiting Positions

2003	Institute des Hautes Etudes Scientifiques, Bures-sur-Yvette, France.
2002	Max-Planck-Institut-fur-Mathematik, Bonn, Germany.
2001	Max-Planck-Institut-fur-Mathematik, Bonn, Germany.
1999	Math Sciences Research Institute, Berkeley, CA.
1998	Institute des Hautes Etudes Scientifiques, Bures-sur-Yvette, France.
1995	Institut Fourier, Grenoble, France. Department of Mathematics.
1992	Institute des Hautes Etudes Scientifiques, Bures-sur-Yvette, France.

Contracts and Grants Funded

(Jul 2011–Aug 2016) *Fibered 3-Manifolds and their Monodromy*. Simon Foundation Collaboration Grant (Florida State University)

(Apr 2009–Mar 2010) *Topology of Algebraic Varieties*. National Science Foundation Conference Grant (Florida State University)

(Sept 1995- July 1997) National Sciences and Engineering Research Council of Canada Research Grant (University of Toronto)

(Sept 1993-Aug 1995) National Science Foundation Research Grant (Stanford University)

Doctoral Thesis Advising

Armstrong, J. K (PhD 2012). *Principal elements of mixed-sign Coxeter systems (co-director with K. Petersen)*

Valdivia, A. D., (PhD 2011). *Teichmuller polynomials and asymptotics of minimal dilatation pseudo-Anosov mapping classes*.

Mortada, J. W., (PhD 2011). *Embeddings of Artin Groups in the Mapping Class Group* (co-director with S. Fenley)

Undergraduate Honors Thesis Advising

Dominic Pafundi (BS 2011). *A simple roundhouse class of genus two*.

Preprints (submitted to refereed journal)

(January, 2014) *with Y. Algom-Kfir and K. Rafi.* Digraphs and cycle polynomials for free-by-cyclic groups

(September, 2013) Quotient families of mapping classes

(November, 2013) Mapping classes associated to mixed-sign Coxeter graphs

Refereed Journal and Refereed Proceedings Articles

(2014) Penner sequences and asymptotics of minimum dilatations for subfamilies of the mapping class group. *Topology Proceedings* Volume 44 (to appear)

(2013) *with E. Gadre, R. Kent, and C. Leininger*. Lipschitz constants to curves complexes. *Math Research Letters*, 10.

(2012) Generalized lantern relations and planar line arrangements. *Contemporary Math. Volume "Computational Algebraic and Analytic Geometry of Low-dimensional Varieties"*, 572, 113--125.

(2010) Small dilatation pseudo-Anosov mapping classes coming from the simplest hyperbolic braid. *Journal of Algebraic and Geometric Topology*, 15.

(2009) *with B. Gross and C. McMullen*. Cyclotomic factors of Coxeter polynomials. *Journal of Number Theory*, *129*, 1034--1043.

(2009) What is Lehmer's number? *Notices of the American Mathematical Society*, *56 (3)*, 374--375.

(2007) On hyperbolic deformations of algebraic links and small Mahler measure. In *Singularities in Geometry and Topology* (pp. 77--94). Adv. Stud. Pure Math., vol. 46, Math. Soc. Japan, Tokyo.

(2006) Salem-Boyd sequences and Hopf plumbing. *Osaka Journal of Mathematics*, *43 (3)*, 497--516.

(2006) *with E. Kin.* A family of pseudo-Anosov braids with small dilatation. *Journal of Algebraic Geometry and Topology*, *6*, 699--738.

(2004) Chord diagrams and Coxeter links. *Journal of London Mathematical Society*, *69 (2)*, 243--257.

(2003) Lehmer's problem, McKay's correspondence, and 2,3,7. In C.G. Melles, J.P. Brasselet, G. Kennedy, K. Lauter, & L. McEwan (Eds.), *Resolution of singularities and noncommutative geometry, Luminy* (pp. 123--138). Contemporary Math vol. 324.

(2001) *with E. Ghate.* The arithmetic and geometry of Salem numbers. *Bulletin of the American Mathematical Society (N.S.)*, *38(3)*, 293--314.

(2001) Boundary manifolds and line arrangements. *Mathematische Annalen*, *319*, 17-32.

(2001) The Lehmer polynomial and pretzel knots. *Canadian Mathematical Society Bulletin*, *44 (4)*, 440--451.

(2000) Plumbing graphs for normal surface-curve pairs. In Falk, M., & Terao, H. (Eds.), *Workshop on Mathematics Related with Arrangements of Hyperplanes (Tokyo Metropolitan University, Tokyo)* (pp. 127--144). Kinokuniya Company Ltd., Tokyo.

(1997) Alexander stratifications of character varieties. *Annales de l'Institute Fourier*, *47(2)*, 555-583.

(1997) Multi-polynomial invariants of plane algebraic curves. In Lu, Q, Yau, S., & Libgober, A. (Eds.), *Singularities and and Complex Geometry (Beijing, China)* (pp. 67--74). AMS/IP Studies in Advance Mathematics.

(1996) Torsion points on an algebraic subset of an affine torus. *International Mathematics Research Notices*, *19*, 953--982.

(1993) Abelian coverings of the complex projective plane branched along configurations of real lines. *Memoirs of the American Mathematical Society*, *105(502)*, vi--85.
Intersection theory on branched covering surfaces and polynomial periodicity. *International Mathematics Research Notices*, *6*, 185--196.

(1992) Polynomial periodicity for Betti numbers of covering surfaces. *Inventiones Mathematicae*, *108(2)*, 289--321.

Invited Keynote and Plenary Presentations at Conferences

(2013) *Minimum dilatation problem for pseudo-Anosov mapping classes.* Semi-Plenary presentation at 47th Spring Topology and Dynamics Conference, Central Connecticut State

University, Hartford Connecticut.

(2012) *Minimum dilatation problem and quasi-periodicity conjecture*. Plenary presentation at Annual Meeting, Mathematical Society of Japan, University of Science, Tokyo, Japan.

(2003) *Lehmer's problem for chord diagram links*. Plenary presentation at Topology and Dynamical Systems, Supported by National Science Foundation, Lubbock, TX.

Department Service (Florida State University)

Member, Executive Committee (2013-present)

Pure Mathematics Program Director (2008-2010, 2013-present)

Co-organizer, Department Open House "Math Fun Day" (October 2013)

Co-organizer, Topology Week and FSU-UF joint workshop in Topology (March 2013)

Chair, Visibility Committee (2012–present).

Member, Graduate Committee (2005–present).

Elected Member, Faculty Evaluation Committee (2010–2011).

Pure Mathematics Program Representative, Executive Committee (2008–2010).

Elected Member, Faculty Evaluation Committee (2003–2004).

Chair, Unit Assessment Survey Committee (2002–2003).

Member, Visibility Committee (1999–2002).

Member, Graduate Admissions Committee (2002).

Service to the Profession

Co-organizer, AMS special session on "Topology and Number Theory", Knoxville, TN (*co-organizer with K. Petersen*) (2014)

Mittag-Leffler Institute, Summer Workshop on Growth and Mahler Measure in Geometry and Topology (*co-organizer with R. Kellerhals*) (2013)

Co-organizer: Dynamics and Topology Seminar, Harvard University, Department of Mathematics (2010)

PI - NSF Conference Grant and co-organizer, Conference on Topology of Algebraic Varieties, Jaca, Spain. (2009-2010)

Co-organizer, AMS Special Session on Algebraic Geometry and Topology, Tallahassee, FL. (2004)

Advisor for visiting PhD student Miguel A. Marco. Weekly hour long meetings, *University of Valladolid, Spain*. (2002)

AMS Special Session on Topology of Algebraic Varieties, Irvine, CA. (2001)

Doctoral Thesis Committee for Jose-Ignacio Cogolludo, University of Madrid, Madrid, Spain. (1999)