JAYADEV SIDDHANTA ATHREYA

Personal Information

Name: Jayadev Siddhanta Athreya
Address: Department of Mathematics, University of Washington, Box 354350, Seattle, WA 98195
Email: jathreya@uw.edu
Website: http://faculty.washington.edu/jathreya

Employment

August 2015- current: Associate Professor, University of Washington, Department of Mathematics
August 2015-current: Founder and Director, Washington Experimental Mathematics Lab.
August 2010-July 2015: Assistant Professor, University of Illinois, Department of Mathematics.
August 2011-current: Founder and Director, Illinois Geometry Lab.
July 2008-July 2010: Gibbs Instructor, Yale University, Department of Mathematics.
July 2007-June 2008: Instructor, Princeton University, Department of Mathematics.
July 2006-June 2007: Lecturer, Yale University, Department of Mathematics.

Other positions

- Spring 2017, Visiting Professor, Aix-Marseille Universite.
- Spring 2015, Research Member, Mathematical Sciences Research Institute, Program on Homogeneous Dynamics.
- August 2012-June 2013, Visiting Assistant Professor, Yale University, Department of Mathematics.
- Maitre de Conference, University of Rennes, June 2009
- Maitre de Conference, University of Rennes, May 2008

Degrees

Ph.D: Mathematics, University of Chicago, under Prof. Alex Eskin, June 2006.
M.Sc: Mathematics, University of Chicago, December 2001
B.Sc: Mathematics, Iowa State University, with Honors and Distinction, May 2000

Grants and Awards

NSF CAREER Grant: DMS 1351853 and 1559860, Summer 2014-Summer 2019, $450,000.
NSF Includes Grant: with Dave Auckly, Megan Bang, Filiberto Barajas,2018-2020, $299,761
NSF Workforce Program Grant: with Matt Ando and Jennifer McNeily, Summer 2015-Summer 2018, $ 600,000
Simpson Center Collaboration Grant: with Timea Tihanyi, School of Art. Simpson Center, University of Washington.
NSF PI grant: DMS 1069153, Summer 2011- Summer 2014, $149,702.
Center for Advanced Study Fellowship: University of Illinois, Spring 2013.
Public Engagement Grant: University of Illinois, Spring 2013 and Spring 2014.
Interdisciplinary Innovation Initiative: University of Illinois, with Shen Dillon, John Lambros and Ioannis Chasiotis, College of Engineering, 2012-13.
N. Tenney Peck Teaching Award: Department of Mathematics, University of Illinois, Spring 2012.
Campus Research Board: University of Illinois, Fall 2011-Spring 2012 and Spring-Fall 2014.
NSF Postdoctoral Fellowship: June 2006-June 2009. Grant number: DMS 0603636.
London Mathematical Society: Visiting Fellowship, May-June 2009.

Selected Publications

- (joint with G. Margulis) Values of random polynomials at integer points. J. Mod. Dyn. 12 (2018), 9-16.
- (joint with I. Konstantoulas) Lattice deformations in the Heisenberg group, to appear, Groups, Geometry, and Dynamics.
- (joint with D. Aulicino) A Trajectory from a Vertex to Itself on the Dodecahedron, to appear, American Mathematical Monthly.
- (joint with B. Reznick and J. Tyson), Cantor set arithmetic, to appear, American Mathematical Monthly.
- (joint with G. Margulis) Logarithm laws for unipotent flows, II. J. Mod. Dyn. 11 (2017), 1-16.
- (joint with A. Eskin and A. Zorich) Right-angled billiards and volumes of moduli spaces of quadratic differentials on $\mathbb{C}P^1$. With an appendix by Jon Chaika. Ann. Sci. Éc. Norm. Supér. (4) 49 (2016), no. 6, 1311-1386.
- Gap distributions and homogeneous dynamics, Proceedings of the ICM Satellite Conference on Geometry, Topology, and Dynamics in Negative Curvature (London Mathematical Society Lecture Notes Series), volume 425, 1-29, 2016.
- (joint with A. Parrish and J. Tseng) Ergodic theory and Diophantine approximation for translation surfaces and linear forms, Nonlinearity, volume 29, Number 8, 2173-2190, 2016.
- (joint with S. Chaubey, A. Malik and A. Zaharescu) Geometric statistics of Ford circles. New York Journal of Mathematics 21 (2015) 637-656.
- (joint with J. Chaika) The Hausdorff Dimension of Non-Uniquely Ergodic directions in H(2) is almost everywhere 1/2, Geometry and Topology 19 (2015) 3537-3563.
- (joint with C. Cobeli and A. Zaharescu) Radial density in Apollonian packings, International Math Research Notices, 2014.
- (joint with A. Ghosh and J. Tseng) Spherical averages of Siegel transforms and spiraling of lattice approximations. Journal of London Mathematical Society, Journal of London Mathematical Society, (2015) 91 (2).
- Random Affine Lattices, Contemporary Mathematics, volume 639, 169-174, 2015.
- (joint with J. Chaika and S. Lelievre) The gap distribution of slopes on the golden L. Contemporary Mathematics, volume 631, 47-62, 2015.
- (joint with A. Eskin and A. Zorich) Counting generalized Jenkins-Strebel differentials. Geom. Dedicata 170 (2014), 195-217.
- (joint with F. Paulin). Logarithm laws for strong unstable foliations in negative curvature and non-Archimedian Diophantine approximation. Groups, Geometry, and Dynamics Volume 8, Issue 2, 2014, pp. 285-309
- (joint with Y. Cheung) A Poincaré section for horocycle flow on the space of lattices, International Math Research Notices, 2014, no. 10, 2643-2690.
- (joint with A. Ghosh and A. Prasad) Buildings, Extensions, and Volume Growth Entropy, New York Journal of Mathematics, Volume 19 (2013) 1-11.
- (joint with M. Boshernitzan) Ergodic properties of compositions of Interval Exchange Maps and Rotations, Nonlinearity 26 (2013) 417-423.
- Cusp excursions on parameter spaces, Journal of London Math Society, (2013) 87 (3): 741-765.
- (joint with J. Chaika) The distribution of gaps for saddle connection directions, Geometric and Functional Analysis, Volume 22, Issue 6 (2012), 1491-1516.
- (joint with A. Bufetov, A. Eskin, and M. Mirzakhani) Lattice Point Asymptotics and Volume Growth on Teichmuller space, Duke Math. J. Volume 161, Number 6 (2012), 1055-1111.
- (joint with A. Ghosh and A. Prasad) Ultrametric Logarithm Laws II, Monat. Math., Volume 167, Issue 3 (2012), Page 333-356
- (joint with G. Margulis) Logarithm laws for unipotent flows, I. Journal of Modern Dynamics, volume 3, Number 3 (2009), 359-378
- (joint with A. Ghosh and A. Prasad) Ultrametric Logarithm Laws I, Discrete and Continuous Dynamical Systems-S, v. 2, no. 2, 337-348, 2009.

- Logarithm laws and shrinking target properties, Proceedings of Indian Academy of Sciences (Math. Sci.), Vol. 119, No. 4, September 2009, pp. 541-557.
- (joint with G. Forni) Deviation for rational-angled billiards, Duke Math. J. Volume 144, Number 2 (2008), 285-319.
- Quantitative recurrence and large deviations for Teichmuller geodesic flow, Geometriae Dedicata (2006), v. 119, 121-140.

PhD Advising

- Ioannis Konstantoulas, PhD, University of Illinois, 2014.
- Grace Work, PhD, University of Illinois, 2016.
- Dia Taha, University of Washington, expected graduation June 2019.
- Anthony Sanchez, University of Washington, expected graduation June 2020.
- Samantha Fairchild, University of Washington, expected graduation June 2021.

Recent invited talks

- University of Hong Kong, July 2018.
- Geometric and Asymptotic Group Theory with Applications, July 2018.
- Rainwater Seminar, University of Washington, May 2018.
- Colloquium, Indian Institute of Science, January 2018.
- William Rowan Hamliton Memorial Conference, Trinity College, Dublin, August 2017.
- Plenary speaker, Conference on Teichmüller Space, Polygonal Billiard, Interval Exchanges, CIRM Luminy, February 2017.
- Plenary speaker, Conference on Homogeneous Spaces, Diophantine Approximation and Stationary Measures, CIRM Luminy, February 2017.
- Ergodic Theory Seminar, Tata Institute of Fundamental Research, Bombay, January 2017.
- Math/Physics Seminar, Jawaharlal Nehru University, January 2017.
- Colloquium, Indian Institute of Science, January 2017.
- Colloquium and Undergraduate Lecture Series, University of Oregon, November 2016.
- Colloquium and Probability Seminar, Oregon State University, April 2016.
- Number Theory Seminar, Washington State University, November 2015.

Recent Professional Service

- Park City Mathematics Institute, Graduate Steering Committee, 2018-current.
- Lead Organizer, Mathematical Sciences Research Institute program on Holomorphic Differentials and Physics, Fall 2019.
- American Mathematical Society Joint Mathematics Meeting Graduate Student Travel Grants Committee, 2014-2016 (chair 2016).
- Member of the Classroom Resource Materials Editorial Board, Mathematical Association of America, 2019-2022.
- Organizer, Special Session on Interactions between Geometry, Group Theory and Dynamics, American Mathematical Society Spring Sectional Meeting, Vanderbilt, Nashville, TN.