Paul D. Johnson

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Date of Birth: December 20, 1980
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Research Interests

Algebraic geometry and combinatorics. Enumerative geometry: Gromov-Witten theory, Donaldson-Thomas, Hurwitz theory. Hilbert schemes and partitions. Orbifolds.

Education

2006–2009	University of Michigan Ph.D. in Mathematics Advisor: Yongbin Ruan
2003–2006	University of Wisconsin-Madison M.A. in Mathematics
1999–2003	University of Chicago B.A. in Mathematics

Professional History

2014–	Lecturer, University of Sheffield
2013–2014	Assistant Professor, Colorado State University
2011–2013	NSF Postdoctoral Fellow, Columbia University
2009 – 2011	Postdoctoral Research Fellow, Imperial College London
Summer 2009	NSF Postdoctoral Fellow, Princeton University

Papers

1. Double Hurwitz numbers via the infinite wedge.
   Trans. Amer. Math. Soc. 367 (2015), no. 9, 6415–6440. arXiv:1008.3266.

2. Equivariant GW Theory of Stacky Curves
   Comm. Math. Phys. 327 (2014), no. 2, 333–386. arXiv:0903.1068.

3. The quantum Lefschetz hyperplane principle can fail for positive orbifold hypersurfaces.
   Joint with T. Coates, A. Gholampour, H. Iritani, Y. Jiang and C. Manolache.
   Mathematical Research Letters 19 (2012), no 5. 997–1005. arXiv:1202.2754.

4. Hurwitz numbers, ribbon graphs, and tropicalization.
   Tropical geometry and integrable systems, 55–72, *Contemp. Math.*, 580, Amer. Math. Soc.,
   Providence, RI, 2012. arXiv:1303.1543.

5. Chamber Structure for double Hurwitz numbers.
   Joint with R. Cavalieri and H. Markwig.
   Adv. Math. 228 (2011), no. 4, 1894–1937. arXiv:1003.1805.

6. Abelian Hurwitz-Hodge integrals.
   Joint with R. Pandharipande and H.-H. Tseng.
   Michigan Math. J. 60 (2011), no. 1, 171–198. arXiv:0803.0499.

7. Tropical Hurwitz Numbers.
   Joint with R. Cavalieri and H. Markwig.
   J. Algebraic Combin. 32 (2010), no. 2, 241–265. arXiv:0804.0579.

To Appear

1. Lattice points and simultaneous core partitions.
   To appear in the Electronic Journal of Combinatorics.
   arXiv:1502.07934.

2. A graphical interface for the Gromov-Witten theory of curves.
   Joint with R. Cavalieri, H. Markwig, and D. Ranganathan.
   To appear in Algebraic Geometry: Salt Lake City 2015
   arXiv:1604.07250.

Preprints

1. Counting curves on toric surfaces: tropical geometry and the Fock space.
   Joint with R. Cavalieri, H.Markwig, and D. Ranganathan.
   arXiv:1706.05401

2. Orbifold Hilbert Schemes and a generalization of cores and quotients.
   Work in progress. Draft available on GitHub.

Teaching Experience

University of Sheffield	Lectured Graph Theory and Algebraic Geometry Ran discussion sections for flipped engineering math
Colorado State University	Combinatorics, Graduate Algebraic Topology sequence
Imperial College London	Taught representation theory of finite groups for advanced math majors. Ran math discussion sections for 1st year electrical engineering majors.
University of Michigan	Graduate Student Instructor. Taught Calculus I and II to small classes.
University of Wisconsin	Teaching Assistant. Led discussion sections for Calculus I, Calculus III Business Calculus, and Calculus with Precalculus.

Honors, Awards, & Fellowships

NSF Postdoctoral Fellowship

Sumner B. Myers Prize (Best Math PhD thesis at University of Michigan)