

# TODD FISHER

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## PROFESSIONAL EXPERIENCE

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**Assistant Professor**, Brigham Young University, June 2007-present.

**Research Associate**, University of Maryland, September 2004-June 2007.

## ACADEMIC PREPARATION

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**Ph.D. Mathematics** Northwestern University, June 2004. Thesis: *On the Structure of Hyperbolic Sets*, Advisor: Amie Wilkinson.

**M.S. Mathematics**, Brigham Young University, August 1999. Thesis: *Qualitative Behavior for a Nonlinear Convection-Diffusion Equation with Conservation*, Advisor: Christopher Grant.

**B.S. Mathematics**, Minor Physics, Brigham Young University, April 1998.

## REFEREED JOURNAL PUBLICATIONS

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1. *Entropic stability beyond partial hyperbolicity*, joint work with Jérôme Buzzi, submitted.
2. *Symbolic extensions for partially hyperbolic dynamical systems with 2-dimensional center bundle*, joint work with David Burguet, submitted.
3. *Entropy-expansiveness for partially hyperbolic diffeomorphisms*, joint work with L. J. Díaz, M. J. Pacifico, and J. L. Vieitez, submitted.
4. *Maximal entropy measures for certain partially hyperbolic, derived from Anosov systems*, joint work with Jérôme Buzzi, Martin Sambarino, and Carlos Vásquez, *Ergodic Theory and Dynamical Systems*, to appear.
5. *Resolving extensions of finitely presented systems*, *Acta Applic. Math.*, to appear.
6. *Symbolic extensions for partially hyperbolic diffeomorphisms*, joint work with Lorenzo J. Díaz, *Discrete Contin. Dyn. Syst.*, 29, no. 4, 14191441, 2011.
7. *Markov partitions for hyperbolic sets*, joint work with Himel Rathnakumara, *Involve*, 2(5), 547-555, 2009.

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8. *Quasi-Anosov diffeomorphisms of 3-manifolds*, joint work with Jana Rodriguez-Hertz, Trans. Amer. Math. Soc., **36**, 3707-3720, 2009.
9. *Trivial centralizers for codimension-one attractors*, Bull. Lond. Math. Soc., **41**(1), 51-56, 2009.
10. *Trivial centralizers for Axiom A diffeomorphisms*, Nonlinearity, **21**(11), 2505-2517, 2008.
11. *Supergrowth of the number of periodic orbits for non-hyperbolic homoclinic classes*, joint work with Lorenzo J. Díaz and Christian Bonatti, Discrete Contin. Dyn. Syst., **20**(3):589-604, 2008.
12. *The Topology of Hyperbolic Attractors on Compact Surfaces*, Ergodic Theory and Dynamical Systems, **26**(05), 2006, pp 1511-1520.
13. *Hyperbolic Sets that are Not Locally Maximal*, Ergodic Theory and Dynamical Systems, **26**(05), 2006, pp 1491-1509.
14. *Hyperbolic Sets with Nonempty Interior*, Discrete Contin. Dyn. Syst. **15**(2), 2006, 433-446.
15. *Blowup in a Mass-Conserving Convection-Diffusion Equation with Superquadratic Nonlinearity*, with Christopher P. Grant, Proceedings of the American Mathematical Society, 129 (2001), 3353–3362.

## OTHER REFEREED PUBLICATIONS

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1. *Problems in dynamical systems*, in Recent Progress in Dynamics MSRI Publications Volume 54, 2007. (Contributor)
2. *Uniformly hyperbolic attractors*, [www.scholarpedia.org/article/Uniformly\\_hyperbolic\\_attractors](http://www.scholarpedia.org/article/Uniformly_hyperbolic_attractors)
3. *On the Structure of Hyperbolic Sets*, Ph. D. dissertation.
4. *Qualitative Behavior for a Nonlinear Convection-Diffusion Equation with Conservation*, Masters Thesis, Brigham Young University, 1999.

## INVITED PRESENTATIONS

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- Plenary Lecture, The Sixth International Conference on Differential and Functional Differential Equations, Moscow, Russia, Aug 2011.
- Semi-annual Workshop in Dynamical Systems at Maryland, Apr 2011.
- Workshop “Partial Hyperbolicity at IM-UFRJ”, Rio de Janeiro, Brazil, Jan 2011.
- PUC-Rio, Dynamics Seminar, August 2010.
- University of California, Irvine, Dynamics Seminar, California, USA, May 2010.
- Université Paris-Sud, Topology and Dynamics Seminar, Paris, France, May 2010.
- International workshop on global dynamics beyond uniform hyperbolicity, Beijing, China, Aug 2009.
- REU, Provo, July 2009.
- Summer school on nonlinear and stochastic dynamics, Sichuan University, Chengdu, China, June 2009.

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- International Conference on Nonlinear and Stochastic Dynamics, Chengdu, China, June 2009.
- Rio dynamical systems seminar, PUC-Rio, Rio de Janeiro, Brazil, May 2009.
- Semi-annual Workshop in Dynamical Systems at Maryland, Apr 2009.
- MAA Regional conference, Provo, Mar 2009.
- Steven F. Austin State University, Departmental Colloquium, Texas, November 2008.
- REU, Provo, July 2008.
- University of California, Irvine, Dynamics Seminar, May 2008.
- Joint Meetings, Special session on hyperbolic dynamics, San Diego, California, Jan 2008.
- AMS Central Sectional Meeting, Chicago, Illinois, Oct 2007.
- AMS Southeastern Sectional Meeting, Davidson, North Carolina, March 2007.
- Semi-annual Workshop in Dynamical Systems and Related Topics, State College, Nov 2006.
- Brigham Young University, Departmental Colloquium, Sept 2006.
- AMS Western Sectional Meeting at San Francisco, April 2006.
- Montclair State University, Departmental Seminar, April 2006.
- Univ of Maryland Baltimore Campus, Diff Eq Seminar, March 2006.
- George Washington University, Dynamics Seminar, October 2005.
- Midwest Dynamical Systems Conference, Ann Arbor, April 2004.
- AMS Midwest Regional Meeting, Athens Ohio, March 2004.
- Semi-annual Workshop in Dynamical Systems at Maryland, March 2004.
- International Workshop on Robustness and Partial Hyperbolicity, Buzios, Brazil, November 2003.
- Elmhurst College, Illinois, October 2003.
- Semi-annual Workshop in Dynamical Systems at Maryland, March 2003.

## ACADEMIC VISITS

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- PUC-Rio, Rio de Janeiro, Brazil, August 23- Sept 4, 2010
- Université Paris-Sud, Orsay, France, May 4-16, 2010
- PUC-Rio, Rio de Janeiro, Brazil, May 2-10, 2009

## HONORS AND CITIZENSHIP

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- Organizer for a special session at the Joint Mathematics Meeting, Jan 2012.
- Distinguished Teaching Award from the BYU Mathematics Department, Aug 2011.
- Organizer for Pingree Park Dynamical Systems Workshop, August 2010.
- Co-PI for 2 NSF conference grants.
- Organizer for the Rocky Mountain Conference on Dynamical Systems, May 2008.
- Organizer for a special session on research, Regional MAA conference, March 2008.
- Judge for the poster session at the Joint Mathematics Meeting, January 2008.
- Organizer for a special session at the Joint Mathematics Meeting, January 2008.
- Project Next Fellow, 2007-2008.
- Organizer for special session at the Joint Mathematics Meeting, January 2006.

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- Organized and ran a teaching workshop for incoming graduate students, 2001.
- Reviewer for Mathematical reviews, 2007-present.
- Referee for *Dynamical Systems an International Journal*, *Ergodic Theory and Dynamical Systems*, *Moscow Mathematical Journal*, *Nonlinearity*, and *Proceedings of the AMS*.
- *Vigre Post Doc*, University of Maryland, 2004-06.
- *Northwestern University Searle Center for Teaching Excellence Teaching Assistant Fellow*, Northwestern University, 2001.
- *Northwestern University Fellow*, 1999-2000.
- *Magna Cum Laude Graduate*, Brigham Young University, 1998.
- *Excellence in Teaching*, Brigham Young University, 1999.

## CONFERENCES ATTENDED

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- *Sixth International Conference on Differential and Functional Differential Equations*, Moscow, Russia, Aug 2011.
- *Trends in Dynamics*, Evanston, IL, Apr 2011.
- *Semi-annual Workshop in Dynamical Systems at Maryland*, Apr 2011.
- *Workshop "Partial Hyperbolicity at IM-UFRJ"*, Rio de Janeiro, Brazil, Jan 2011.
- *Pingree Park Dynamical Systems Workshop*, Fort Collins, Colorado, August 2010.
- *Semi-Annual Workshop in Dynamical Systems*, University of Maryland, April 2010.
- *International workshop on global dynamics beyond uniform hyperbolicity*, Beijing, China, Aug 2009.
- *International Conference on Nonlinear and Stochastic Dynamics*, Chengdu, China, June 2009.
- *Semi-Annual Workshop in Dynamical Systems*, University of Maryland, April 2009.
- *Rocky Mountain Conference on Dynamical Systems*, Park City, Utah, May 2008.
- *Semi-Annual Workshop in Dynamical Systems*, University of Maryland, March 2008.
- *Regional MAA Meeting*, Provo, Utah, March 2008.
- *Joint Mathematics Meeting*, San Diego, California, January 2008.
- *Midwest Dynamical Systems* Ann Arbor, MI, Oct 2007.
- *AMS Central Secitonal Meeting*, Chicago, Illinois, Oct 2007.
- *Mathfest*, San Jose, California, Aug 2007.
- *AMS Southeastern Sectional Meeting*, Davidson, North Carolina, March 2007.
- *Semi-annual Workshop in Dynamical Systems and Related Topics*, State College PA, Nov 2006.
- *International Workshop on Global Dynamics Beyond Uniform Hyperbolicity*, Chicago, May 2006.
- *AMS Western Sectional Meeting*, San Francisco, April 2006.
- *Semi-Annual Workshop in Dynamical Systems*, University of Maryland, March 2006.
- *Joint Mathematics Meeting*, San Antonio Texas, January 2006.
- *Partially Hyperbolic Dynamics, Laminations, and Teichmuller Flow Workshop*, Fields Institute, Toronto, Canada, January 2006.
- *Midwest Dynamical Systems*, Evanston Illinois, October 2005.
- *Semi-Annual Workshop in Dynamical Systems*, Penn State, October 2005.

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- *Northwest Dynamics Symposium*, Victoria, Canada, August 2005.
- *International Congress on Dynamical Systems*, Angra dos Reis, Brazil, August 2005.
- *Midwest Dynamical Systems*, Minneapolis Minnesota, April 2005.
- *Semi-Annual Workshop in Dynamical Systems*, University of Maryland, March 2005.
- *Midwest Dynamical Systems*, Ann Arbor Michigan, April 2004.
- *AMS Midwest Regional Meeting*, Athens Ohio, March 2004.
- *Semi-Annual Workshop in Dynamical Systems*, University of Maryland, March 2004.
- *International Workshop on Robustness and Partial Hyperbolicity*, Buzios Brazil, November 2003.
- *Semi-Annual Workshop in Dynamical Systems*, Penn State, October 2003.
- *Midwest Dynamical Systems*, Indiana University - Purdue University Indianapolis, October 2003.
- *Midwest Dynamical Systems*, Northwestern University, April 2003.
- *Semi-Annual Workshop in Dynamical Systems*, University of Maryland, March 2003.
- *Midwest Dynamical Systems*, University of North Carolina Asheville, April 2002.
- *Midwest Dynamical Systems*, University of Colorado, October 2001.
- *Conference on Partial Hyperbolicity*, Northwestern University, June 2001.