

**Brooke E. Shipley**  
**Curriculum vitae**

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RESEARCH INTERESTS

Algebraic Topology and Homological Algebra

EXPERIENCE

**UNIVERSITY OF ILLINOIS AT CHICAGO**

Professor 2007- , Associate Professor, 2003-2007

**PURDUE UNIVERSITY**

Associate Professor, 2002-2003, Assistant Professor, 1998-2002

**UNIVERSITY OF CHICAGO**

Dickson Instructor of Mathematics, 1996-1998, 1999-2000

NSF Postdoctoral Research Fellow, 1996-1998

**UNIVERSITY OF NOTRE DAME**

NSF Postdoctoral Research Fellow, 1995-1996

AWARDS

**Sloan Research Fellow**, 2002 to 2004 (extended through 2006)

**NSF Career Award, DMS-0134938, DMS-0417206**, June 2002 to May 2009

**2001 Purdue University School of Science Outstanding Assistant Professor**,  
for undergraduate teaching

**NSF Research Grants DMS-9971953, DMS-0706877**,  
continuous NSF funding August 1999 to May 2010

**NSF Postdoctoral Research Fellowship**, September 1995 to July 1998

EDUCATION

**MASSACHUSETTS INSTITUTE OF TECHNOLOGY**

PhD in Mathematics, May 1995, Thesis advisor: Prof. Haynes R. Miller

Thesis Title: Convergence of the homology spectral sequence of a cosimplicial space

**HARVARD COLLEGE**

A.B. in Mathematics, *magna cum laude*, Phi Beta Kappa, June 1990

## PUBLICATIONS

- [1] *Pro-isomorphisms of homology towers*, *Mathematische Zeitschrift* **220** (1995), 257-271.
- [2] *Convergence of the homology spectral sequence of a cosimplicial space*, *Amer. J. Math.* **118** (1996), 179-207.
- [3] *Symmetric spectra*, with M. Hovey and J. Smith, *J. Amer. Math. Soc.*, **13** (2000), 149–208.
- [4] *Algebras and modules in monoidal model categories*, with S. Schwede, *Proc. London Math. Soc.* **80** (2000), 491-511.
- [5] *Symmetric spectra and topological Hochschild homology*, *K-theory*, **19** No. 2, (2000), 155–183.
- [6] *Model categories of diagram spectra*, with M. Mandell, J. P. May, and S. Schwede, *Proc. London Math. Soc.* **82** (2001), 441-512.
- [7] *Simplicial structures on model categories and functors*, with C. Rezk and S. Schwede, *Amer. J. Math.* **123** (2001), 551-575.
- [8] *Monoidal uniqueness of stable homotopy theory*, *Adv. in Math.*, **160** (2001), 217-240.
- [9] *A telescope comparison lemma for THH*, with M. Mandell, *Top. Appl.*, **117** (2002), 161-174.
- [10] *An algebraic model for rational  $S^1$ -equivariant stable homotopy theory*, *Quart. J. Math.*, **53** (2002), 87-110.
- [11] *A uniqueness theorem for stable homotopy theory*, with S. Schwede, *Math. Zeit.*, **239** (2002), 803-828.
- [12] *Equivalences of monoidal model categories*, with S. Schwede, *Alg. Geo. Topology*, **3** (2003), 287-334.
- [13] *Stable model categories are categories of modules*, with S. Schwede, *Topology*, **42** (2003), 103-153.
- [14] *K-theory and derived equivalences*, with D. Dugger, *Duke J. Math.* **124** (2004), no. 3, 587-617.
- [15] *A convenient model category for commutative ring spectra*, *Contemp. Math.* **346** (2004), 473-483.
- [16] *Postnikov extensions of ring spectra*, with D. Dugger, *Alg. Geo. Topology* **6** (2006) 1785-1829.
- [17] *Morita theory in stable homotopy theory*, “Handbook on tilting theory”, eds. L. Huegel, D. Happel and H. Krause, *London Math. Soc. Lecture Notes Series* **332** (2007), 393-409.
- [18] *HZ-algebra spectra are differential graded algebras*, *Amer. J. Math.* **129** (2007) 351-379.
- [19] *Topological equivalences of differential graded rings*, with D. Dugger, *Adv. in Math.* **212** (2007) 37-61.
- [20] L. Avramov, J. D. Christensen, W. Dwyer, M. Mandell, B. Shipley (Eds.) *Interactions between homotopy theory and algebra* (Chicago 2004), *Contemp. Math.* **436** (2007) Amer. Math. Soc., Providence RI, 334 pp.
- [21] *Enriched model categories and an application to additive endomorphism spectra*, with D. Dugger, *Theory Appl. Categ.* **18** (2007) 400-439.
- [22] *A curious example of triangulated-equivalent model categories which are not Quillen equivalent*, with D. Dugger, *Algebr. Geom. Topol.* **9** (2009) 135-166.

## CONFERENCE TALKS

Commutative Algebra: Connections with Algebraic Topology and Representation Theory, UNL, Lincoln, NE, May, 2008.  
Women in Math: A celebration, MIT, Cambridge, MA, April, 2008.  
Jean E. Rubin Memorial Lecture, Purdue University, November 2007.  
Lecture Series (three lectures), Research Programme on Homotopy Theory and Higher Categories, Centre de Recerca Matemàtica, Barcelona, Spain, October 2007.  
Complex Cobordism in Homotopy Theory, Baltimore, MD, March 2007  
Wolfson Lecture Series, (five lectures), Manchester, England, January 2006  
Midwest Topology Seminar, Purdue, October 2004; UIC, February 2002; U.Chicago, May 1996  
Conference on Algebraic Topology, Arolla, Switzerland, August 2004; August 1999  
Invited hour address, AMS Regional Meeting, Boulder, CO, October 2003  
Commutative Algebra: Interactions with Homological Algebra and Representation Theory, MSRI, CA, February 2003  
Barcelona Conference on Algebraic Topology, Barcelona, Spain, July 2002; June 1998; June 1994  
AMS Regional Meetings: Ann Arbor, MI, March 2002; Notre Dame, IN, April 2000; Wayne State, Detroit, MI, May 1997; Kent State University, Kent, OH, November 1995  
Ontario Topology Seminar/Conference, London, Canada, October 2001  
Union College Mathematics Conference, principal speaker, Schenectady, NY, September 2001  
Recent Progress in Homotopy Theory, Johns Hopkins University, Baltimore, MD, March 2000  
AMS Summer Research Conferences, Boulder, CO, June 1999; Seattle, WA, July 1996  
Workshop on Stable Homotopy and Algebraic K-theory, Bielefeld, Germany, February 1999  
AMS Joint Mathematical Meetings, Baltimore, MD, January 1998; San Diego, CA, January 1997  
Homotopy Theory Symposium, CMS Winter Meeting, Victoria, Canada, December 1997  
Conference on Algebraic Topology, Kazimierz, Poland, June 1997  
Localization and Periodicity Summer School, CRM, Barcelona, Spain, September 1996  
Fields Institute Stable Homotopy Emphasis Session, Toronto, Canada, January 1996  
CMS Winter Meeting, Simon-Fraser University, Vancouver, Canada, December 1995  
AWM Workshop, AMS Joint Mathematical Meetings, poster, San Francisco, CA, January 1995

## COLLOQUIA

Northwestern University, April 2003;  
University of Sheffield, England, October 2002;  
University of Illinois at Chicago, February 2002;  
Wayne State University, September 2000;  
Purdue University, January 1997 and August 2000;  
Brown University, February 1995;  
University of Kentucky, February 1995;  
University of Illinois, Urbana-Champaign, January 1995

## RESEARCH INSTITUTE VISITS (ONE MONTH OR MORE)

Centre de Recerca Matemàtica, Barcelona, Spain, October 2008

Institut Mittag-Leffler, Stockholm, Sweden, May 2006

Isaac Newton Institute for Mathematical Sciences, Cambridge, UK, October 2002

Fields Institute for Research in Mathematical Sciences, Toronto, Canada, January 1996

## TOPOLOGY SEMINAR TALKS

CRM, Barcelona, Spain, June 1998; Indiana University, March 1999; MIT, April 1994, March 1995, April 1996, September 1997, April 2008; Newton Institute, Cambridge, England, October 2002; Northwestern University, November 1996, May 1998, May 1999, November 1999; Purdue University, April 1996, November 1997, October 1998, May 1999; Universität Bielefeld, Bielefeld, Germany, August 1996; University of Chicago, November 1996, February 1998, April 2000; University of Illinois at Chicago, November 1999; University of Illinois at Urbana-Champaign, March 1998, September 2002; University of Manchester/MIST, Manchester, England, October 2002; University of Notre Dame, September 1995; University of Washington, December 1995

## CURRENT GRADUATE STUDENTS

Jumpei Nogami	2005-
Marcy Robertson	2006-

## DEPARTMENTAL AND UNIVERSITY SERVICE

MSCS Advisory Committee	2006-2008, 2009-
MSCS Hiring Committee	2004-2005, 2006-2007, 2008-2009
MSCS Post-doctoral Hiring Committee, Chair	2007-2008
MSCS Statistics Hiring Committee	2005-2006
MSCS Graduate Colloquium Co-chair	2004-2005
MSCS Colloquium Co-chair	2005-2006, 2006-2007
MSCS Admissions, Fellowships, and Assistantships Committee	2007-
MSCS Graduate Studies Committee	2008-
UIC-Association for Women in Mathematics Co-chair	2003-
Ad Hoc Committee on Infant Care at UIC, reporting to provost	2007-2008
UIC Faculty Senate	2006-
Chicago HERC (Higher Education Recruitment Consortium) Advisory Committee	2006-2007
WISEST (Women in Science and Engineering System Transformation) Co-PI of NSF 0546843, ADVANCE Institutional Transformation Award	2009-
Executive committee	2004-2005, 2009 -
UIC Accelerator Plan (ACE/Sloan Faculty Career Flexibility grant proposal) campus-wide ad-hoc advisory group	May 2006
Chancellor's Committee on the Status of Women, Co-chair 2007-2009 ; Faculty concerns subcommittee, Co-chair, 2005-2007	2005- 2009

## PROFESSIONAL SERVICE

- Editorial board member *Proceedings of the American Mathematical Society* 2009-  
Editorial board member *Homology, Homotopy, and Applications* 2007-  
Editorial board member *Theory and Applications of Categories* 2005-  
Editorial board member *Topology and its Applications* 2003-  
Coordinating committee member, Midwest Topology Network, NSF DMS-0844249 2008-  
AMS Joint Summer Research Conferences Committee 2004-2007  
AMS Committee on Academic Freedom, Tenure and Employment Security 2003-2006  
Mathematical Reviews for American Mathematical Society 1999-2007  
Served on NSF review panels (four panels), referee for U.S., Swiss, and Canadian research grant proposals, *Acta Math.*, *Adv. Math.*, *Alg. Geo. Topology*, *Amer. Math. Monthly*, *Duke J. Math.*, *Homology, Homotopy and Applications*, *Inventiones*, *Geo. Topology*, *J. Pure and App. Algebra*, *London Math Soc.*, *Math. Zeit.*, *Theory and App. Categories*, *Topology*, *Trans. Amer. Math. Soc.*, and various conference proceedings.  
Organized Topology seminar at University of Chicago 1996-97 and at Purdue 1998-1999.  
Two talks for WISE, UIC, September 2005, March 2006; one for Harvard Club of Chicago, November 2005.

## CONFERENCES CO-ORGANIZED

- Midwest Topology Conference, Purdue University November 10-11, 2001  
Workshop on Topological Modular Forms, Munster, Germany October 13 - 17, 2003  
AMS Homotopy theory special session, Boulder, CO October 2-4, 2003  
“Interactions between homotopy theory and algebra” July 26 - August 6, 2004  
Summer school, Chicago, IL (Chair of committee, 70 international attendees, supported by my NSF Career grant)  
AMS Homotopy theory special session, Evanston, IL October 23-24, 2004  
Midwest Topology Conference, UIC February 24, 2007  
“Homotopical Group Theory and Topological Algebraic Geometry” June 16-27, 2008  
June 16-20 in Copenhagen; June 23-27 in Bonn, 260 participants registered; co-PI of NSF DMS-0802491 for \$40,800  
“Homotopy theory and applications”, University of Nebraska-Lincoln, April 3-5, 2009