Dev Prakash Sinha

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Experience and Education

2006-present	University of Oregon Associate Professor, Mathematics Department.
2001-2006	University of Oregon Assistant Professor, Mathematics Department.
1997-2002	Brown University Visiting Assistant Professor, Mathematics Department.

Ph.D. in Mathematics, 1999, Stanford University
Dissertation: "On the structure of equivariant bordism rings for cyclic groups of prime order."
Advisor: Gunnar Carlsson.

B.Sc. in Mathematics, 1993, Massachusetts Institute of Technology

Grants and awards

- NSF, Division of Mathematical Sciences Grant 0405922, "Homotopy methods in knot theory," July 2004 – June 2007.
- Principal organizer for fully-funded international workshop on "Moduli spaces of knots" at the American Institute of Mathematics, January 2006.
- University of Oregon New Faculty Grant, Summer 2003.
- Wriston Grant from Brown University, 1999 and 2000.
- Brown University Advising Award, 2000.
- Visiting scholar at the American Institute of Mathematics, 1999.
- National Science Foundation Graduate Fellow 1993-1997.

PhD Students

- Matt Miller, scheduled to compete his Ph.D. at the University of Oregon in the spring of 2007.
- Chad Giusti, scheduled to complete his Ph.D. at the University of Oregon in the spring of 2008.

Curriculum Development

- Spring 2006 and Fall 2000. New course introducing undergraduates to proofs taught in spring 2006; implemented similar course at Brown University in fall 2000.
- Winter, Spring 2004 and Spring, Fall 2005. Using a novel combination of posted lecture notes and computer projection for Business Calculus sequence.
- Summer 1995. Created a mini-course on algebraic topology for high-school students, as head counselor of the PROMYS program at Boston University.

Service and Outreach

- Director of Graduate Studies in the Mathematics Department for 2005–07.
- University of Oregon Library Committee, 2006–07.
- Organizer for Geometry/Topology Seminar in Mathematics Department, 2006–07.
- University of Oregon Faculty Senate, 2003–2005.
- Previous Departmental Service
  - 2005: chair of mathematics education search committee; chair of executive committee; library committee; undergraduate advisory committee; summer and drop-in advising.
  - 2004: chair of colloquium committee; graduate advisory committee; summer and drop-in advising.
  - 2003: colloquium committee; graduate advisory committee.
- Service on six oral exam committees for PhD students, two as chair.
- Discussion leader for New Student Convocation 2002 and 2003; speaker in Freshman Honors Colloquim 2002 and 2005.
- Judge for ACT-SO mathematics competition for minority high-school students from Eugene, Oregon 2003 and 2004.
- From 1998-2001, On the four-member executive board of directors, including service as president, of the Mt. Hope Community Learning Center.

Publications

- "Operads and knot spaces," *Journal of the American Mathematical Society* **19** (2006) No. 2 461–486.
- With R. Budney, J. Conant and K. Scannell, "New perspectives on self-linking", *Advances in Mathematics*, **191** (2005) 78–113.
- "Bordism of semi-free S^1-actions", *Mathematische Zeitschrift*, **249**, (2005) 439–454.
- "Manifold-theoretic compactifications of configuration spaces", *Selecta Mathematica*, New series, **10** (2004) 391–428.
- With K. Scannell, "A one-dimensional embedding complex", *Journal of Pure and Applied Algebra* **170** (2002), No. 1, 93–107.
- "Real equivariant bordism and stable transversality obstructions for $\mathbf{Z}/2$", *Proceedings of the American Mathematical Society*, **130** (2002), No. 1, 271–281.
- "The geometry of local cohomology in equivariant bordism", *Homotopy, Homology and Applications* **3** (2001) No. 2, 385–406.
- "Computations of complex equivariant bordism rings" *American Journal of Mathematics* **123** (2001), no. 4, 577–605.

Submitted manuscripts

- "The topology of spaces of knots."
- "A pairing between graphs and trees."
- with Ben Walter, "Lie coalgebras and rational homotopy theory, I."
- "The homology of the little disks operad."

Invited Presentations

- Featured speaker lecture series:
  - Plenary speaker at Knots and Operads workshop, Rome, July 2006.
  - Six-hour lecture series on operads for graduate students, Calgary, August 2005.

- International conferences:
  - Alpine Operad Workshop, Switzerland, April 2006.
  - Workshop on Localization and Calculus of Functors, Edmonton, March 2005.
  - Conference on Knot Theory and Three-Manifolds, British Columbia, July 2004.
  - Workshop on Arrangements and Stratifications, Italy, March 2004.
  - International Algebraic Topology Conference, Japan, July 2003
  - Cornell Topology Festival, May 2001
  - Polynomial Functors Conference sponsored by Max Planck Institute, January 1999.

- Colloquia:
  - Oregon State University, October 2002
  - St. Louis University, October 2001
  - Amherst College, February 2001
  - The University of Minnesota, January 2001
  - New Mexico State University, January 2001
  - The University of Oregon, November 2000
  - The University of Colorado, March 2000
  - The University of California at San Diego, February 2000
  - Wayne State University, March 1999
  - Rice University, January 1998.

Invited Presentations, continued

- Seminar talks on homotopy methods in knot theory:
  - Purdue University, September 2005 and March 2003.
  - The University of Illinois, September 2005.
  - Bay Area Topology Seminar, October 2003
  - AMS Regional Meeting, Colorado, October 2003
  - Microsoft Research, September 2003
  - AMS Regional Meeting, New York, April 2003
  - Cascade Topology Seminar, November 2002
  - Stanford University, June 2002
  - Johns Hopkins University, April 2002 and November 1999
  - University of Virginia, April 2002
  - Cornell University, March 2002
  - University of Rochester, March 2002 and February 1999
  - City University of New York, November 2001
  - Notre Dame University, March 2001
  - Yale University, December 2000
  - The Massachusetts Institute of Technology, September 2000 and December 1999
  - University of Wisconsin, January 1999
  - Columbia University, November 1998.

- Seminar talks on aspects of equivariant bordism theory:
  - The University of British Columbia, November 2002
  - The University of Illinois, October 2001
  - Cascade Topology Seminar, November 2000
  - Homotopy Theory Conference at Stanford, August 2000
  - The American Institute of Mathematics, May 1999
  - The Massachusetts Institute of Technology, January 1999 and December 1997
  - The University of Chicago, January 1999 and March 1997
  - Rutgers University, November 1998
  - The University of Oregon, May 1998 and June 1997
  - Johns Hopkins University, March 1998
  - Northwestern University, March 1997
  - American Mathematical Society Meeting, Homotopy Theory Session, January 1997.