

## Vitae for Nicholas J. Kuhn

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### Education

University of Chicago, Department of Mathematics, Ph.D. 1980, M.S. 1977. *Special Area:* Algebraic Topology. *Thesis:* The structure of the James-Hopf Maps. *Advisor:* J. Peter May.

Princeton University, A.B. 1976. *Major:* Mathematics. *Honors:* magna cum laude, Phi Beta Kappa.

### Research Interests

My research is centered around algebraic topology and homotopy theory. Over the years, my research interests have broadened to include algebraic K-theory and group representation theory.

My work in topology has included work on the development of a character theory for complex oriented cohomology theories, iterated loop space theory and invariants of function spaces, Goodwillie functor calculus, periodic homotopy, topological realization questions, stable homotopy groups, and model categories.

My algebraic work has been on the topics of modern Steenrod algebra technology over all finite fields, group cohomology, generic representation theory of the finite general linear groups, rational cohomology, and homological stability questions.

For a discussion of some of my major research projects see my webpage:

<http://www.math.virginia.edu/Faculty/Kuhn/>.

### Professional Experience

Professor, Department of Mathematics, University of Virginia, 1991–.

Associate Professor, Department of Mathematics, University of Virginia, 1986–1991.

Assistant Professor, Department of Mathematics, Princeton University, 1982–1986.

Acting Assistant Professor, Department of Mathematics, University of Washington, 1980–1982.

### Visiting Positions

Visiting Professor, Cambridge University, Cambridge, England, winter/spring, 2006.

Visiting Professor, University of Chicago, fall, 2000.

Visiting Professor, C.N.R.S. and U. Paris-Nord, Paris, France, 1994–1995.

Visiting Professor, M.S.R.I., Berkeley, fall 1989.

Visiting Fellow, Cambridge University, Cambridge, England, 1986–1987.

Visiting Scholar, Northwestern University, spring 1983.

Shorter summer visiting positions have included Warwick University (1985), I.H.E.S. and U. Paris–Orsay (1990), and Beilefeld University (1992).

### **National activities**

Member: American Mathematical Society, Mathematical Association of America.

Reviewer for Math Reviews (over 130 reviews).

Referee of many dozens of grant proposals for the N.S.F., N.S.A., and equivalent Canadian and British funding organizations. Member of N.S.F. panels.

Referee for various journals of many articles in topology and algebra.

Editor, *Homology, Homotopy, and Applications*, 2005–.

A.M.S. Southeastern Section Program Committee, member, 2007–, chair, 2008–.

### **Awards, Fellowships, Grants**

A.M.S. Postdoctoral Fellowship, 1982–1983. (Declined a 1982 N.S.F. Postdoctoral Fellowship.)

Sloan Foundation Fellowship, 1985–87.

Since 1982 I have been funded with standard grants by the N.S.F. I am currently the Principal Investigator of grant DMS–0604206 (Program in Topology and Foundations), a three year continuing award, with a total budget of \$160,000.

Two of my years overseas were partially funded by foreign grants: a grant from the S.E.R.C. (Britain) in 1986–87, and the C.N.R.S. (France) in 1994–95.

### **Ph.D. students**

Piotr Krason (1991), Mark Winstead (1993), David Hunter (1997), Stephen Ahearn (2000), Randall Helmstutler (2004), Ryan Higginbottom (2005).

### **Conferences Organized**

Cochair, A.M.S.–M.A.A.–I.M.S. joint summer conference on ‘Homotopy Methods in Algebraic Topology’, Boulder, Colorado, June, 1999.

Scientific Committee, Conference on Algebraic Topology, Angers, France, September, 1998.

American funding for the June 2001 Algebraic Topology Conference held on the Isle of Skye, Scotland was via a \$ 9000 supplement to my NSF grant.

Organizing Committee, Conference on Pure and Applied Topology, Isle of Skye, Scotland, June, 2005. American funding was via an \$ 11000 supplement to my NSF grant.

Chair, Conference on Algebraic and Geometric Topology (in honor of Bob Stong), University of Virginia, November, 2008.

### Lectures available on the web

*Periodic Homology of Infinite Loopspaces.* This was the talk videoed at the workshop on localization methods and the calculus of functors, Banff International Research Station, Banff, Canada, April, 2005. It is available at <http://www.pims.math.ca/birs/>.

### Invited talks since 1993

Topology Seminar, Johns Hopkins University, February, 1993.  
Topology Conference, Kazimierz, Poland, June 1993.  
AMS special session, Lexington KY, March, 1994  
AMS conference in Topology, Mt. Holyoke, July, 1994.  
Topology Seminar, U.Paris–Nord (two talks), October, 1994.  
Topology Conference, U.Paris–Nord, November, 1994.  
Seminar on *K-theory and MacLane homology* (three talks), I.H.E.S., Bures-sur-Yvette, France, January - March 1995.  
Topology Seminar, Heidelberg, Germany. February, 1995.  
Topology Seminar, Lille, France. March, 1995.  
Topology Seminar, Oxford, England. April, 1995.  
Topology Seminar, Cambridge, England. April, 1995.  
Topology Seminar, University of Paris 11, Orsay, France. May, 1995.  
Workshop on Elliptic cohomology, Max Plank Institute, Bonn, Germany. June, 1995.  
Conference in Algebraic Topology, Gargnano, Italy. June, 1995.  
Conference on stable homotopy theory, Field Institute, Toronto, January, 1996.  
Conference on unstable homotopy theory, Field Institute, Toronto, May, 1996.  
A. M. S. Research Institute on cohomology, representations, and actions of finite groups, University of Washington, Seattle, July, 1996.  
Special session on algebraic topology, Rider University, Lawrenceville, October, 1996.  
Upstate New York Topology Seminar, Syracuse U., November, 1996.  
Midwest Topology Seminar, Northwestern U., January, 1997.  
Topology Seminar, M.I.T., March, 1997.  
Conference in Algebraic Topology, Northwestern U., March, 1997.  
Special session on algebraic topology, AMS annual meeting, Baltimore, January 1998.  
Three talks, Wayne State University, February, 1998, as a ‘visiting scholar’: two in a departmental colloquium setting, and one in a topology seminar.  
Conference on Modular Representation Theory, University of Virginia, May, 1998.  
Conference on Algebraic Topology, Barcelona, Spain, May, 1998.  
Three talks, Algebraic Topology Conference, Angers, France, September, 1998. These comprised a minicourse on “The representation theoretic approach to unstable modules over the Steenrod algebra”.

Three talks, ring theory conference on Infinite Length Modules, Bielefeld, Germany, September, 1998. These were a series on the topic “Generic Representation Theory: a survey of basic structure”.

Conference on Algebraic Topology, Arolla, Switzerland, August, 1999.

Midwest Topology Seminar, Purdue–Calumet, October, 1999.

Conference on Algebraic Topology, Johns Hopkins University, March, 2000.

Topology seminar, University of Chicago, October, 2000.

Topology seminar, Northwestern University, November, 2000.

Group theory seminar, University of Chicago, November, 2000.

Topology proseminar, University of Chicago, November, 2000.

Topology seminar, Johns Hopkins University, December, 2000.

Conference on Algebraic Topology, Gdansk, Poland, June, 2001.

Conference on Algebraic Topology, Isle of Skye, Scotland, June 2001.

Conference on Algebraic Topology and Category Theory, Union College, September, 2001.

Special session on algebraic topology, AMS regional meeting, Ann Arbor, March, 2002.

Conference on Algebraic Topology, Northwestern University, March, 2002.

Conference on Algebraic Topology, Barcelona, July, 2002.

Topology seminar, University of Chicago, October, 2002.

Special session on algebraic topology, AMS national meeting, Baltimore, January, 2003.

Colloquium, Brown University, February, 2003.

Conference on Homotopy Theory, Oberwolfach, Germany, March, 2003.

Conference on Algebraic Topology, Kinokawa, Japan, July, 2003.

Series of three talks, Workshop on Algebraic Topology, Nagoya, Japan, August, 2003.

Conference on Algebraic Topology, University of Minnesota, September, 2003.

Topology seminar, University of Illinois at Champaign, March, 2004.

Special session on homotopy theory, A.M.S. regional meeting, Rider University, April, 2004.

‘All Chicago’ topology seminar, Northwestern University, May, 2004.

Conference on Algebraic Topology, Hanoi, Vietnam, August, 2004.

Workshop on Goodwillie calculus, Clay Mathematics Institute, Cambridge, MA, March, 2005.

Special session on algebraic topology, AMS regional meeting, Newark, DE, April, 2005.

Workshop on localization methods and the calculus of functors, Banff International Research Station, Banff, Canada, April, 2005. Video available at <http://www.pims.math.ca/birs/>.

Conference on the Cohomology of Finite Groups, Oberwolfach, Germany, September, 2005.

Homotopy conference, University of Sheffield, Sheffield, England, January, 2006.

Geometry seminar, Cambridge University, Cambridge, England, February, 2006.

Colloquium, University of Kent, Canterbury, England, March, 2006.

Topology seminar, University of Aberdeen, Aberdeen, Scotland, April, 2006.

Topology seminar, University of Glasgow, Glasgow, Scotland, April, 2006.

Two talks, Topology seminar, Autonomous University of Barcelona, Barcelona, Spain, May, 2006.

Geometry seminar, Cambridge University, Cambridge, England, May, 2006.

Conference on Algebraic Topology, Johns Hopkins University, March, 2007.

Conference on Homotopy Theory, Oberwolfach, Germany, September, 2007.

Geometry and Topology Conference, plenary speaker, Lehigh University, October, 2007.

International Conference on Topology, Djerba, Tunisia, October, 2007.

Conference on Algebraic Topology, Arolla, Switzerland, August, 2008.

Special session on algebraic topology, AMS regional meeting, Kalamazoo, MI, October, 2008.