

Vitae for Nicholas J. Kuhn

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		Nationality	United States

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 also includes aspects of **algebraic K-theory**, **group representation theory**, **homological algebra**, and **category theory**.

My work in topology focuses on the interactions between unstable, stable, equivariant, and chromatic homotopy theory. Projects include the development of generalized character theory for complex oriented cohomology theories, the construction of telescopic (Bousfield-Kuhn) functors allowing for the study of unstable periodic homotopy, and much work on properties of iterated loopspaces and their generalized homology, Goodwillie functor calculus, topological realization questions, and stable homotopy groups.

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

See my website for a more detailed discussion of some of my major research projects.

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, University of Sheffield, Sheffield, England, winter/spring 2017.

Visiting Scholar, M.S.R.I., Berkeley, winter/spring 2014.

Visiting Professor, U.Paris-Nord, Paris, France, fall 2011.

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 Scholar, M.S.R.I., Berkeley, fall 1989.

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

Visiting Scholar, Northwestern University, spring 1983.

Summer positions: Warwick (1985), I.H.E.S./U. Paris–Orsay (1990), Beilefeld (1992), Newton Institute, Cambridge (2018).

Awards, Fellowships, Grants, Honors

A.M.S. Postdoctoral Fellowship, 1982–1983.

N.S.F. Postdoctoral Fellowship, 1982 (declined).

Sloan Foundation Fellowship, 1985–87.

Eight standard NSF grants as sole PI, lead PI of an NSF Focused Research Group grant.

Co-PI of an NSF Research Training Group grant (2019-2024, \$2.5 million).

Simons Collaboration Grant, 2020.

NSF conference funding: Isle of Skye (2001 and 2005), UVA (2012, 2019).

Foreign support: S.E.R.C.(Britain) in 1986–87, C.N.R.S.(France) in 1994–95.

M.S.R.I. funded the expenses of my 2014 visit.

Elected a Fellow of the American Mathematical Society in 2018, *for contributions to homotopy theory, group cohomology and representation theory.*

Ph.D. students

Piotr Krason (1991), Mark Winstead (1993), David Hunter (1997), Stephen Ahearn (2000), Randall Helmstutler (2004), Ryan Higginbottom (2005), Joe Johnson (2012), Jason McCarty (2012), Brian Thomas (2019), Matt Gagne (2019), Bogdan Krstic (2020), Chris Lloyd (2021).

Postdocs mentored at UVA

John Martino (90-93, now at W. Michigan), Michael Slack (90-92, left academics), Jim Turner (93-95, Calvin College), Geoff Powell (96-97, Angers), Andrey Lazerev (97-99, Lancaster), Stephen Theriault (99-02, Southampton), Ismar Volic (03-06, Wellesley), Michael Hill (06-09, UCLA), Lennart Meier (13-15, Utrecht), Luis Pereira (13-17, left academics), Prasit Bhattacharya (17-20, New Mexico State), William Balderrama (2021-).

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, British, French, German, and similar European funding organizations. Member of N.S.F. panels.

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

Official reader of many French mathematics Ph.D. theses.

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

A.M.S. Southeastern Section Program Committee, member, 2007-09, chair, 2008-09.

Conferences Organized

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

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

Organizing Committee, Conference on Pure and Applied Topology, Isle of Skye, Scotland, June, 2005.

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

Organizing Committee, Workshop on Functor Calculus and Operads, Banff, March, 2011.

Chair, Virginia Conference on Algebraic Topology, Charlottesville, Virginia, June, 2012.

Cochair, Mid-Atlantic Topology Conference, Charlottesville, Virginia, October, 2019.

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., 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 “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, Kinosaki, 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.
Topology Seminar, University of Sheffield, Sheffield, England, June, 2009.
Conference on Algebraic Topology, Group Theory and Representation Theory, plenary speaker, Isle of Skye, Scotland, June, 2009.
Workshop on unstable homotopy theory and chromatic phenomena, CCNY, New York, June, 2009.
Special session on algebraic topology, AMS regional meeting, Lexington, KY, March, 2010.
Algebraic Topology Conference, three talks on "Periodic localization, Tate cohomology, and infinite

loopspaces”, U.Georgia, May, 2010.
Topology Seminar, University of Osnabruck, Osnabruck, Germany, July, 2010.
Conference on Group Cohomology, Oberwolfach, Germany, July, 2010.
André Memorial Conference, Lausanne, Switzerland, May, 2011.
Topology Seminar, U.Paris–Nord, Paris, France, May, 2011.
Conference on Homotopy Theory, Oberwolfach, Germany, September, 2011.
Topology Seminar, U.Strasbourg, Strasbourg, France, October, 2011.
Topology Seminar, U.Paris–Nord, Paris, France, October, 2011.
45th William J. Spencer Lecture, Kansas State University, March, 2012.
Conference on the cohomology of functors and applications, U. Nantes, Nantes, France, April, 2012.
Topology Seminar, Johns Hopkins University, March, 2013.
Conference on Algebra and Topology, U. Nantes, Nantes, France, May, 2013.
Topology Seminar, University of Angers, Angers, France, May, 2013.
Colloquium, University of Osnabruck, Osnabruck, Germany, May, 2013.
Topology Seminar, two talks, Mathematical Sciences Research Institute, March, 2014.
Topology Seminar, Stanford University, March 2014.
Conference on Algebraic Topology, Dubrovnik, Croatia, June, 2014.
New York Applied Algebra Colloquium, CUNY, October, 2014.
Conference on Algebraic Topology, Princeton, March, 2015.
Conference on Group Cohomology, Oberwolfach, Germany, May, 2015.
Workshop on Algebraic Topology, Oxford, England, October, 2015.
Topology Seminar, CUNY, March, 2016.
Topology Seminar, Georgia Tech., April, 2016.
Workshop on operations in highly structured homology theories, Banff International Research Station, Banff, Canada, May, 2016.
Conference on group actions and algebraic combinatorics, Herstmonceux, England, July, 2016.
Topology Seminar, University of Sheffield, England, February, 2017.
Topology Seminar, University of Glasgow, Scotland, February, 2017.
Algebra Seminar, University of Glasgow, Scotland, February, 2017.
Transpennine Topology Triangle Seminar, Sheffield, England, February, 2017.
Topology Seminar, University of Angers, France, April, 2017.
Scotland Topology Seminar, Glasgow, Scotland, May, 2017.
Colloquium, University of Hamburg, Germany, May, 2017.
Topology Seminar, University of Stockholm, Sweden, May, 2017.
Conference on Homotopy Theory, Paris, France, June, 2017.
Conference on Algebraic Topology and Representation Theory, Lille, France, June, 2017.
Special session on Algebraic Topology, AMS regional meeting, Nashville, April, 2018.
Program on Homotopy Harnessing Higher Structures, Newton Institute, Cambridge, England, July, 2018.
Electronic Computational Homotopy Seminar, March, 2019.
Topology Seminar, U.C.L.A., April, 2019.
Conference on Homotopy Theory, Oberwolfach, Germany, August, 2019.
Summer school on Equivariant Homotopy Theory, Shanghai, China, August, 2019.
Workshop on Algebraic Topology, Shanghai, China, August, 2019.
Colloquium, University of Virginia, November, 2021.

Algebraic Topology Seminar, Princeton University, April, 2022.
 Topology Seminar, M.I.T., October, 2022.
 Workshop on Spectral Methods in Equivariant Mathematics, Hausdorff Institute, Bonn, Germany, October, 2022.
 Talk in the online seminar on Manifolds, homotopy, and related topics, hosted at Oxford, March 2023.
 Introductory talk for a reading seminar at Utrecht University, March 2023.
 Topology Seminar, University of Southampton, England, April, 2023.
 Topology Seminar, Sheffield University, England, April, 2023.
 Topology Seminar, Stockholm University, Sweden, May, 2023.
 Workshop on Generalized Lie Algebras in Derived Geometry, Utrecht, Netherlands, June 2023.
 Conference on Transchromatic Homotopy Theory, Regensburg, Germany, August, 2023.

Publications

Books edited

1. (with J.P.C.Greenlees and R.R.Bruner) Homotopy Methods in Algebraic Topology, Proceedings of the 1999 Conference in Boulder, A. M. S. Cont. Math. Series **271**, 2001.

Research Papers

All papers since 2002 are available in preprint form at arxiv.org. Many older papers are also available on one or more of the following archives: the Hopf archive at hopf.math.purdue.edu, the K-theory archive at faculty.math.illinois.edu/K-theory/, or the group cohomology archive at homepages.abdn.ac.uk/d.j.benson/pages/html/archive.html.

1. The geometry of the James-Hopf Maps, *Pac. J. Math.* **102**(1982), 397–412.
2. (with S.A.Mitchell and S.B.Priddy) The Whitehead conjecture and splitting $B(\mathbf{Z}/2)^k$, *Bull. A. M. S.* **7**(1982), 255–258.
3. A Kahn-Priddy sequence and a conjecture of G.W.Whitehead, *Math. Proc. Camb. Phil. Soc.* **92**(1982), 467–483. (Corrigenda, **95**(1984), 189–190.)
4. (with F.R.Cohen, R.L.Cohen, and J.L.Neisendorfer) Bundles over configuration spaces, *Pac. J. Math.* **104**(1983), 47–54.
5. The homology of the James-Hopf maps, *Ill. J. Math.* **27**(1983), 315–333.
6. Spacelike resolutions of spectra, *Northwestern Homotopy Theory Conference, Proc. Evanston, 1982*, A. M. S. Cont. Math. Series **19**(1983), 153–165.
7. Suspension spectra and homology equivalences, *Trans. A. M. S.* **283**(1984), 303–313.
8. (with an appendix by P.Landrock) The modular Hecke algebra and Steinberg representation of finite Chevalley groups, *J. Algebra* **91**(1984), 125–141.

9. Extended powers of spectra and a generalized Kahn-Priddy Theorem, *Topology* **23**(1985), 473–480.
10. Chevalley group theory and the transfer in the homology of symmetric groups, *Topology* **24**(1985), 247–264.
11. (with S.B.Priddy) The transfer and Whitehead’s conjecture, *Math. Proc. Camb. Phil. Soc.* **98**(1985), 459–480.
12. (with S.A.Mitchell) The multiplicity of the Steinberg representation of $GL_n(\mathbf{F}_q)$ in the symmetric algebra, *Proc. A. M. S.* **96**(1986), 1–6.
13. Exact sequences of spectra and duality, *Proc. A. M. S.* **97**(1986), 347–351.
14. The mod p K-theory of classifying spaces of finite groups, *J. Pure Appl. Alg.* **44**(1987), 269–271.
15. The rigidity of $L(n)$, *Algebraic Topology – Seattle 1985, Springer Lect. Notes Math.* **1286**(1987), 286–292.
16. The Morava K-theories of some classifying spaces, *Trans. A. M. S.* **304**(1987), 193–205.
17. The transfer and James-Hopf invariants, *Math. Zeit.* **196**(1987), 391–405.
18. (with J.C.Harris) Stable decompositions of classifying spaces of finite abelian p -groups, *Math. Proc. Camb. Phil. Soc.* **103**(1988), 427–449.
19. Morava K-theories and infinite loop spaces, *Algebraic Topology, Proc. Arcata, 1986, Springer Lect. Notes Math.* **1370**(1989), 243–257.
20. (with D.Carlisle) Subalgebras of the Steenrod algebra and the action of matrices on truncated polynomial algebras, *J. Algebra* **121**(1989), 370–387.
21. (with D.Carlisle) Smash products of summands of $B(\mathbf{Z}/\mathbf{p})_+^n$, *Northwestern Topology Conference, Proc. Evanston, 1988, A. M. S. Cont. Math. Series* **96**(1989), 87–102.
22. Character rings in algebraic topology, *Advances in Homotopy Theory, Proc. Cortona 1988, L. M. S. Lectures Notes* **139**(1989), 111–126.
23. (with J. F. Adams) Atomic spaces and spectra, *Proc. Edin. Math. Soc.* **32**(1989), 473–481.
24. (with M.J.Hopkins and D.C.Ravenel) Morava K-theories of classifying spaces and generalized characters for finite groups, *Topology Conference, Proc. Barcelona, 1990, Springer Lecture Notes in Math.* **1509** (1992), 186–209.
25. Generic representation theory and Lannes’ T-functor, *Adams Memorial Symp., Proc. Manchester, 1990, L. M. S. Lecture Notes* **176** vol.2(1992), 235–262.
26. (with Jeanne Duflot and Mark Winstead) A classification of polynomial algebras as modules over the Steenrod algebra, *Comm. Math. Helv.* **68**(1993), 622–632.

27. (with Piotr Krason) On embedding polynomial functors in symmetric powers, *J. Algebra* **163**(1994), 281–294.
28. Constructions of families of elements in the stable homotopy groups of spheres, *Topology and Representation Theory, Proc. Evanston, 1992, A.M.S. Cont. Math.* **158**(1994), 135–155.
29. Morita equivalence, $GL(n, q)$ modules, and the Steenrod algebra, *Algebraic Topology and its Applications, Proc. Berkeley, 1989, M.S.R.I. Pub.* **27**(1994), 125–137.
30. Generic representations of the finite general linear groups and the Steenrod algebra:I, *Amer. J. Math.* **116**(1994), 327–360.
31. Generic representations of the finite general linear groups and the Steenrod algebra:II, *K-theory J.* **8**(1994), 395–428.
32. Generic representations of the finite general linear groups and the Steenrod algebra:III, *K-theory J.* **9**(1995), 273–303.
33. On topologically realizing modules over the Steenrod algebra, *Annals of Math.* **141**(1995), 321–347.
34. (with M. Slack and F. Williams) Hopf constructions and higher projective planes for iterated loop spaces, *Trans. A.M.S.* **347**(1995), 1201–1238.
35. (with M. Winstead) On torsion in the cohomology of certain mapping spaces, *Topology* **35**(1996), 875–881.
36. Invariant subspaces of the ring of functions on a vector space over a finite field, *J. Algebra* **191**(1997), 212–227.
37. Computations in generic representation theory: maps from symmetric powers to composite functors, *Trans. A.M.S.* **350**(1998), 4221–4233.
38. Rational cohomology and cohomological stability in generic representation theory, *Amer. J. Math.* **120**(1998), 1317–1341.
39. (with D. J. Hunter) Mahowald families of elements in stable homotopy groups revisited, *Math. Proc. Camb. Phil. Soc.* **127** (1999), 237–251.
40. (with D. J. Hunter) Characterizations of spectra with U-injective cohomology which satisfy the Brown–Gitler property, *Trans. A.M.S.* **352** (2000), 1171–1190.
41. (with M.J.Hopkins and D.C.Ravenel) Generalized group characters and complex oriented cohomology theories, *Journal A.M.S.* **13**(2000), 553–594.
42. The generic representation theory of finite fields: a survey of basic structure, *Infinite Length Modules, Proc. Bielefeld, 1998, Trends in Mathematics*, Birkhauser (2000), 193–212.
43. New relationships among loopspaces, symmetric products, and Eilenberg MacLane spaces, *Cohomological Methods in Homotopy Theory, Proc. Barcelona, 1998*, Birkhauser Verlag Progress in Math **196**(2001), 185–216.

44. Splitting fields and twisted group rings for the finite general linear groups, *Modular Representation Theory of Finite Groups, Proc. Charlottesville, 1998*, de Gruyter (2001), 231–237.
45. Stable splittings and the diagonal, *Homotopy Methods in Algebraic Topology, Proc. Boulder, CO, 1999, A.M.S. Cont. Math.* **271** (2001), 169–181.
46. A stratification of generic representation theory and generalized Schur algebras, *K-theory J.* **26** (2002), 15–49.
47. (with S.T.Ahearn) Product and other fine structure in polynomial resolutions of mapping spaces, *Algebraic and Geometric Topology* **2** (2002), 591–647.
48. The McCord model for the tensor product of a space and a commutative ring spectrum, *Categorical Decomposition Techniques in Algebraic Topology, Proc. Isle of Skye, Scotland, 2001, Birkhauser Verlag Progress in Math* **215** (2003), 213–236.
49. Tate cohomology and periodic localization of polynomial functors, *Invent. Math.* **157** (2004), 345–370.
50. Localization of André–Quillen–Goodwillie towers, and the periodic homology of infinite loopspaces, *Advances in Math.* **201** (2006), 318–378.
51. Mapping Spaces and Homology Isomorphisms, *Proc. A.M.S.* **134** (2006), 1237–1248. With an appendix joint with G. Arone.
52. Goodwillie towers and chromatic homotopy: an overview, *Algebraic Topology, Proc. Kinokawa, Japan, 2003, Geometry and Topology Monographs* **10** (2007), 245–279.
53. Primitives and central detection numbers in group cohomology, *Advances in Math.* **216** (2007), 387–442.
54. The nilpotent filtration and the action of automorphisms on the cohomology of finite p -groups, *Math. Proc. Camb. Phil. Soc.* **144** (2008), 575–602.
55. A guide to telescopic functors, *Johns Hopkins Conference on Algebraic Topology, Proc. Baltimore, 2007, Homology, Homotopy, and Applications* **10** (2008), 291–319.
56. Topological nonrealization results via the Goodwillie tower approach to iterated loop space homology, *Algebraic and Geometric Topology* **8** (2008), 2109–2129. (Correction: **10** (2010), 531–533.)
57. Nilpotence in group cohomology, *Conference on Algebraic Topology, Group Theory, and Representation Theory, Proc. Isle of Skye, 2009, Proc. Edin. Math. Soc.* **56** (2013), 151–175.
58. (with J. B. McCarty) The mod 2 homology of infinite loopspaces, *Algebraic and Geometric Topology* **13** (2013), 687–745.
59. The Krull filtration of the category of unstable modules over the Steenrod algebra, *Math. Zeit.* **277** (2014), 917–936.

60. The Whitehead Conjecture, the Tower of S^1 Conjecture, and Hecke algebras of type A, *J. Topology* **8** (2015), 118–146.
61. Generic representation theory of finite fields in nondescribing characteristic, *Advances in Math.* **272** (2015), 598–610.
62. (with Luis A. Pereira) Operad bimodules, and composition products on André–Quillen filtrations of algebras, *Algebraic and Geometric Topology* **17** (2017), 1105–1130.
63. Adams filtration and generalized Hurewicz maps for infinite loopspaces, *Invent. Math.* **214** (2018), 957–998.
64. Hopf algebras, quasi-shuffle algebras and the cohomology of $\Omega\Sigma X$, *Advances in Math.* **369** (2020), Article ID 107013, 30 pp.
65. (with Chris J.R.Lloyd) Chromatic fixed point theory and the Balmer spectrum for extraspecial 2–groups, *Amer. J. Math.*, to appear. Preprint, 2020. arXiv:2008.00330.
66. (with Chris J.R.Lloyd) Computing the Morava K-theory of real Grassmanians using chromatic fixed point theory, *Algebraic and Geometric Topology*, to appear. Preprint, 2021. arXiv:2111.08812.
67. (with William Balderrama) An elementary proof of the chromatic Smith fixed point theorem, *Homology, Homotopy, and Applications*, to appear. Preprint, 2023.
68. A short proof of the chromatic Smith Fixed Point Theorem, preprint, 2021. arXiv:2112.05001 (To be slightly revised and renamed.)
69. Dyer-Lashof operations as extensions of Brown Gitler modules, preprint, 2023. arxiv: 2306.14158.

Reports and other miscellaneous publications

1. Cohomology primitives associated to central extensions, *Oberwolfach Reports* **2** (2005), 2383–2386.
2. (with Carles Broto, Nguyen H. V. Hung, John H. Palmieri, Stewart Priddy, and Nobuaki Yagita) The problem session. *Proceedings of the Conference in Algebraic Topology, Hanoi, 2004, Geometry and Topology Monographs* **11** (2007), 435–441.
3. Adams filtration and infinite loopspaces, *Oberwolfach Reports* **4** (2007), 2703–2705.
4. Restriction to the center in group cohomology, *Oberwolfach Reports* **7** (2010), 1919–1922.
5. The mod 2 homology of infinite loopspaces, *Oberwolfach Reports* **8** (2011), 2660–2663.
6. Generic representations of finite fields in nondescribing characteristic, *Oberwolfach Reports* **12** (2015), 1377–1379.
7. New results about the equivariant stable homotopy Balmer spectrum, *Oberwolfach Reports* **16** (2019), 2220–2223.