

VITA

Jon F. Carlson

Date and Place of Birth: July 3, 1940, Newport News, Virginia

Academic Degrees:

B.A. 1962 Old Dominion University
M.S. 1965 University of Virginia
Ph.D. 1967 University of Virginia

Professional Experience:

2002- Professor Emeritus, University of Georgia
1992-2002 Distinguished Research Professor, University of Georgia
1982-2002 Professor, University of Georgia
1976-1982 Associate Professor, University of Georgia
1968-1976 Assistant Professor, University of Georgia
1967-1968 Instructor, University of Virginia
1966-1967 Junior Instructor, University of Virginia
1964-1966 Teaching Assistant, University of Virginia
1962-1963 Teacher, Northside Junior High School

Coordinator of the Department of Mathematics Graduate program, University of Georgia, 1977-1983.

Publications - Journal Articles:

- (1) J. F. Carlson, *Automorphisms of groups of similitudes over \mathbb{F}_3* , Pac. J. Math., **28**(1969), 485-488.
- (2) J. F. Carlson, *Block idempotents and the Brauer correspondence*, Bull. Austral. Math. Soc., **5**(1971), 337-340.
- (3) J. F. Carlson, *A basis for some relative permutation representation rings*, J. Algebra, **32**(1974), 561-575.
- (4) J. F. Carlson, *Free modules over group algebras of p -groups*, International Conference on Representations of Algebra, Carleton University Lecture Notes, #**9**(1974), Chap. 7, 7.01-7.03.
- (5) J. F. Carlson, *Calculating some relative homology over group rings*, Acta Math. Hungar., **26**(1975), 1-2.
- (6) J. F. Carlson, *The modular representation ring of a cyclic 2-groups*, J. London Math. Soc. (2), **11**(1975), 91-92.
- (7) J. F. Carlson, *Free modules over some modular group rings*, Australian J. Math., (Series A) part **1**(1975), 49-55.
- (8) J. F. Carlson, *Almost free modules over modular group algebras*, J. Algebra, **41**(1976), 243-254.

- (9) J. F. Carlson, *Cyclic modules over some modular group algebras*, Studia Sci. Math. Hung., **11**(1976), 327-333.
- (10) J. F. Carlson, *Periodic modules over modular group algebras*, J. London Math. Soc. (2), **14**(1977), 431-436.
- (11) J. F. Carlson, *Restrictions of modules over modular group algebras*, J. Algebra, **53**(1978), 334-343.
- (12) J. F. Carlson, *The dimensions of periodic modules over modular group algebras*, Illinois J. Math., **23**(1979), 295-306.
- (13) J. F. Carlson, *Periodic modules with large periods*, Proc. Amer. Math. Soc., **76**(1979), 209-215.
- (14) J. F. Carlson, *Endo-trivial modules over (p, p) -groups*, Illinois J. Math., **24**(1980), 287-295.
- (15) J. F. Carlson, *The structure of periodic modules over modular group algebras*, J. Pure Appl. Algebra, **22**(1981), 43-56.
- (16) J. F. Carlson, *The dimensions of modules and their restrictions over modular group algebras*, J. Algebra, **69**(1981), 95-104.
- (17) J. F. Carlson, *The complexity and varieties of modules*, Proceedings of Oberwolfach Conference on Integral Representations and Applications, Springer Lecture Notes No. 882, (1981), 415-422.
- (18) J. F. Carlson, *Complexity and Krull dimensions*, Proceedings of International Conference on Representations of Algebras III, Puebla, Mexico, August 1980, Springer Lecture Notes in Mathematics No. 903, (1981) 62-67.
- (19) D. Burry and J. F. Carlson, *Restrictions of modules to local subgroups*, Proc. Amer. Math. Soc., **84**(1982), 181-184.
- (20) J. F. Carlson, *The varieties and the cohomology ring of a module*, J. Algebra **85**(1983), 104-143.
- (21) J. F. Carlson, *The cohomology of irreducible modules over $SL(2, p^n)$* , Proc. London Math. Soc. (3), **47**(1983), 480-492.
- (22) J. F. Carlson, *The variety of an indecomposable module is connected*, Invent. Math., **77**(1984), 291-299.
- (23) J. F. Carlson, *The cohomology ring of a module*, J. Pure Appl. Algebra, **36**(1985), 105-121.
- (24) J. F. Carlson, *The variety of a module*, in it Orders and Their Applications, Proceedings Oberwolfach, 1984. Lecture Notes in Mathematics, Vol. 1142, Springer, Berlin, 1985, pp. 88-95.
- (25) M. Auslander and J. F. Carlson, *Almost split sequences and group algebras*, J. Algebra, **103**(1986), 122-140.
- (26) D. J. Benson and J. F. Carlson, *Nilpotent elements in the Green ring*, J. Algebra, **104**(1986), 329-350.
- (27) J. F. Carlson and M. J. Collins, *Filtrations for projective modules*, Bull. London Math. Soc., **18**(1986), 591-592.
- (28) J. F. Carlson, *Varieties and transfers*, J. Pure and Appl. Algebra, **44**(1987), 99-105.

- (29) J. F. Carlson, *Cohomology rings of induced modules*, J. Pure and Appl. Algebra, **44**(1987), 85-97.
- (30) D. J. Benson and J. F. Carlson, *Complexity and multiple complexes*, Math. Zeit., **195**(1987), 221-238.
- (31) D. J. Benson and J. F. Carlson, *Diagrammatic methods for group representations and cohomology*, Comm. in Algebra, **15**(1987), 53-121.
- (32) J. F. Carlson, *Varieties for modules*, Proc. Sym. Pure Math., **47**(1987), 37-44.
- (33) J. F. Carlson, *Products and projective resolutions*, Proc. Sym. Pure Math., **47**(1987), 399-408.
- (34) J. F. Carlson, *On the exponents of homology and cohomology of finite groups*, Proc. Amer. Math. Soc., **102**(1988), 814-816.
- (35) J. F. Carlson and K. W. Roggenkamp, *Ito's theorem and character degrees revisited*, Archiv. Math., **50**(1988), 214-217.
- (36) J. F. Carlson and A. Jones, *An exponential property of lattices over group rings*, J. London Math. Soc., (2) **39**(1989), 467-479.
- (37) J. F. Carlson and A. Jones, *Wild categories of periodic modules*, Illinois J. Math., **32**(1988), 557-561.
- (38) J. F. Carlson, *Exponents of modules and maps*, Invent. Math. **95**(1989), 13-24.
- (39) D. J. Benson, J. F. Carlson and G.R. Robinson *On the vanishing of cohomology*, J. Algebra, **131**(1990), 40-73.
- (40) A. Adem and J. F. Carlson, *Discrete groups with large exponents in cohomology*, J. Pure and Appl. Algebra, **66**(1990), 111-120.
- (41) J. F. Carlson, *Cohomology and modules over group algebras*, Proceedings of the International Congress of Mathematicians, Kyoto 1990, Springer-Verlag, Tokyo, 1991, 317-324.
- (42) D. J. Benson and J. F. Carlson, *The cohomology of extra special groups*, Bull. London Math. Soc., **24** (1992), 209-235.
- (43) J. F. Carlson, *Projective resolutions and degree shifting for cohomology of group rings*, in Representations of Algebras and Related Topics, H. Tachikawa and S. Brenner, Eds., London Math. Soc. Lecture Note Series No. 168, Cambridge Univ. Press, Cambridge, 1992, 80-126.
- (44) D. J. Benson and J. F. Carlson, *Periodic modules with large period*, Quart. J. Math., **43**(1992), 283-296.
- (45) D. J. Benson and J. F. Carlson, *Products in negative cohomology*, J. Pure Appl. Algebra, **82**(1992), 107-129.
- (46) J. F. Carlson and D. N. Clark, *Ext for Hilbert modules*, The Madison Symposium on Complex Analysis, A. Nagel and E. Stout, eds., Contemp. Math. **137**(1992), 113-118.
- (47) J. F. Carlson and D. Happel, *Contravariantly finite subcategories and irreducible maps*, Proc. Amer. Math. Soc., **117**(1993), 61-65.
- (48) G. Avrunin and J. F. Carlson, *Nilpotency degree of cohomology rings in characteristic two*, Proc. Amer. Math. Soc., **118**(1993), 339-343.

- (49) J. F. Carlson, *Varieties and modules of small dimension*, Archiv. Math., **60**(1993), 425-430.
- (50) D. J. Benson and J. F. Carlson, *Projective resolutions and Poincaré duality complexes*, Trans. Amer. Math. Soc., **342** (1994), 447-488.
- (51) J. F. Carlson, *Systems of parameters and the structure of cohomology rings of finite groups*, Contemp. Math. **158**(1994), 1-7.
- (52) D. J. Benson and J. F. Carlson, *Functional equations for Poincaré series of group cohomology*, Bull. London Math. Soc., **26**(1994), 438-448.
- (53) J. F. Carlson, P. Donovan and W. W. Wheeler, *Complexity and quotient categories for group algebras*, J. Pure and Appl. Algebra **93**(1994), 147-167.
- (54) J. F. Carlson and G. R. Robinson, *Varieties and modules with vanishing cohomology*, Math. Proc. Cam. Phil. Soc. **116**(1994), 245-251.
- (55) J. F. Carlson, D. N. Clark, C. Foias and J. P. Williams *Projective Hilbert $\mathbb{A}(\mathbb{D})$ -modules*, New York J. Math **1**(1994), 26-38.
- (56) J. F. Carlson, *Decompositions of the trivial module*, Proceedings of Conference on Representation Theory of Finite Groups and Algebras, S. Koshitani, ed., RIMS Kokyuroka 877, Research Institute for the Math. Sciences, Kyoto, Japan 1994, pp. 6-11.
- (57) J. F. Carlson and L. G. Kovacs, *Tensor factorizations of group algebras and modules*, J. Algebra, **175** (1995), 385-407.
- (58) J. F. Carlson and D. N. Clark, *Cohomology and extensions of Hilbert modules*, J. Functional Analysis, **128**(1995), 278-306.
- (59) J. F. Carlson *Depth and transfer maps in the cohomology of groups*, Math. Z., **218**(1995), 461-468.
- (60) J. F. Carlson and H.-W. Henn, *Depth and the cohomology of wreath products*, Manuscripta Math., **87**(1995), 145-151.
- (61) J. F. Carlson, *Transfers and the structure of cohomology rings*, Proceedings of Conference on Algebraic Combinatorics, T. Yoshida, ed. RIMS, Kokyuroka 896, Research Institute for the Mathematical Sciences, Kyoto 1995 pp. 1-7.
- (62) J. F. Carlson and W. W. Wheeler, *Varieties and localizations of module categories*, J. Pure Appl. Algebra, **102**(1995), 137-153.
- (63) J. F. Carlson, *Quotient categories of modules over group algebras*, in '93 Galway/St. Andrews, C.M. Campbell et.al., eds., Cambridge University Press, Cambridge (1995), pp. 113-119.
- (64) J. F. Carlson, D. Nakano and K. Peters, *On the vanishing of extensions of modules over reduced enveloping algebras*, Math. Ann., **302**(1995), 541-560.
- (65) D. J. Benson, J. F. Carlson and J. Rickard, *Complexity and varieties for infinitely generated modules*, Math. Proc. Cam. Phil. Soc., **118**(1995), 223-243.
- (66) J. F. Carlson and H.-W. Henn, *Cohomological detecting and regular elements in group cohomology*, Proc. Amer. Math. Soc., **124**(1996), 665-670.

- (67) J. F. Carlson, *The decomposition of the trivial module in the complexity quotient category*, J. Pure Appl. Algebra, **106**(1996), 23-44.
- (68) J. F. Carlson, *The cohomology of groups*, The Handbook of Algebra, M. Hazewinkel, ed., Elsevier, Amsterdam, 1996, pp. 581-610.
- (69) D. J. Benson, J. F. Carlson and J. Rickard, *Complexity and varieties for infinitely generated modules*, II, Math. Proc. Cam. Phil. Soc. **120**(1996), 597-615.
- (70) J. F. Carlson and C. Peng, *Relative projectivity and ideals in cohomology rings*, J. Algebra, **183**(1996), 929-948.
- (71) *Varieties and induction*, Bol. Soc. Math. Mex. **2**(1996), 101-114.
- (72) J. F. Carlson, *Modules over group algebras*, Analele Stintifice Univ. Constanta **4**(1996), 31-42.
- (73) J. F. Carlson, E. Green and G. J. A. Schneider, *Computing the ext algebras for the group algebras of finite groups*, J. Sym. Comp., **24**(1997), 317-325.
- (74) J. F. Carlson and W. W. Wheeler, *Homomorphisms in higher complexity quotient categories*, Group Representations: Cohomology, Group Actions and Topology, A. Adem, J. Carlson, S. Priddy and P. Webb, eds., Proc. Sym. Pure Math., **63** American Math. Soc. (1997), Providence, R. I. 115-155.
- (75) D. J. Benson, J. F. Carlson and J. Rickard, *Thick subcategories of the stable category*, Fund. Math. **153**(1997), 59-80.
- (76) J. F. Carlson and D. N. Clark, *Projectivity and extensions of Hilbert modules over $A(D^N)$* , Mich. Math. J., **44** (1997), 365-373.
- (77) J. F. Carlson, *Cohomology, representations and quotient categories of modules*, Geometry and Cohomology in Group Theory, P. Kropholler, G. Niblo and R. Stöhr, eds., London Math. Soc. Lecture Note Ser. No. 252, Cambridge Univ. Press, Cambridge, 1998, pp. 45-73.
- (78) J. F. Carlson, C. Peng and W. W. Wheeler, *Transfer maps and virtual projectivity*, J. Algebra **204**(1998), 286-381.
- (79) J. F. Carlson, *A characterization of endo-trivial modules over p -groups*, Manuscripta Math. **97**(1998), 303-307.
- (80) A. Bajer and J. F. Carlson *An embedding theorem for Lie algebras*, Proc. Amer. Math. Soc. **127**(1999), 3445-3449.
- (81) J. F. Carlson, J. Maginnis and R. J. Milgram, *The cohomology of the sporadic groups J_2 and J_3* , J. Algebra **214**(1999), 143-173.
- (82) J. F. Carlson, *Problems in the computation of group cohomology*, Prog. in Math. **173**(1999), 107-120.
- (83) J. F. Carlson, *Varieties of cohomology with twisted coefficients*, Acta Math. Sinica, (Engl. Ser.), **15**(1999), 81-92.
- (84) J. F. Carlson, *Induction from elementary abelian subgroups*, Quarterly J. Math. **51**(2000), 169-181.
- (85) J. F. Carlson and R. Rouquier, *Self-equivalences of stable module categories*, Math. Zeit. **233**(2000), 165-178.
- (86) J. F. Carlson, *The thick subcategory generated by the trivial module*, 285-296, Trends in Mathematics, Birkäuser, Basel (2000).

- (87) D. J. Benson and J. F. Carlson, *The cohomology of the double cover of the Mathieu group M_{12}* , J. Algebra **226**(2000), 547-576.
- (88) J. F. Carlson, *Vanishing of cohomology and orthogonal subcategories*, Proceedings of the International Conference on Representation Theory, June 9 - July 3, 1998, East China Normal University, Shanghai, Springer-Verlag, Beijing, (2000), 37-56.
- (89) J. F. Carlson and J. Thevenaz, *Torsion endotrivial modules*, Algebras and Representation Theory, **3** (2000), 303-335.
- (90) J. F. Carlson, *Calculating group cohomology: Tests for completion*, J. Symb. Comp. **31**(2001), 229-242.
- (91) A. Adem, J. F. Carlson, D. Karagueuzian and R. J. Milgram, *The cohomology of the Sylow 2-subgroup of the Higman-Sims group*, J. Pure Appl. Algebra **164**(2001), no.3, 275-305.
- (92) J. F. Carlson, *Connections between group cohomology and representations*. Algebra-Representation Theory (Constanta, 2000), 23/-46, NATO Sci. Ser. II Math. Phys. Chem., **28**, Kluwer Acad. Publ., Dordrecht, 2001.
- (93) J. F. Carlson, Z. Lin, D. Nakano and B. Parshall, *The restricted nullcone*, Contemporary Math. **325**(2003), 51-75.
- (94) J. F. Carlson and J. Thévenaz, *The classification of endotrivial modules*, Invent. Math. **158**(2004), 389-411.
- (95) J. F. Carlson and J. Thevenaz, *The classification of torsion endotrivial modules*, Ann. of Math.(2) **165**(2005), 823-883.
- (96) J. F. Carlson, *Coclass and cohomology*, J. Pure Appl. Algebra, **200**(2005), 251/-266.
- (97) J. F. Carlson, *Cohomology, computations and commutative algebra*, Notices Amer. Math. Soc. **52**, No.4 (2005), 426-434.
- (98) J. F. Carlson *Constructing endotrivial modules*, J. Pure and Appl. Algebra, **206**(2006), 83/-110.
- (99) J. F. Carlson and G. Matthews, *Generators and relations for matrix algebras*, J. Algebra **300**(2006), 134/-159.
- (100) J. F. Carlson, N. Mazza and D. K. Nakano, *Endotrivial modules for finite groups of Lie type*, Journal Reine Angew. Math. **595**(2006), 96/-120.

Publications - Journal Articles in Press:

- (1) J. F. Carlson, Z. Lin and D. Nakano, *Support varieties for modules over Chevalley groups and classical Lie algebras*, Trans. Amer. Math. Soc. (to appear).
- (2) J. F. Carlson, *When is projectivity detected on subalgebras?*, Magma Examples, W. Bosma and J. Cannon, Eds., Springer-Verlag, Berlin (to appear).
- (3) J. F. Carlson, *Support varieties for modules*, Magma Examples, W. Bosma and J. Cannon, Eds., Springer-Verlag, Berlin, (to appear).
- (4) J. F. Carlson, *The poset of elementary abelian p -subgroups having rank at least 2*, J. Group Theory (to appear).

- (5) J. F. Carlson, *Cohomology and representation theory*, in Group Representation Theory, J. Thévenaz ed. (to appear).
- (6) J. F. Carlson, N. Mazza and D. Nakano, *Endotrivial modules for the symmetric and alternating groups*, (submitted).
- (7) J. F. Carlson, E. M. Friedlander and J. Pevtsova, *Modules of constant Jordan type*, (submitted)

Publications - Journal Articles in Preparation:

- (1) J. F. Carlson and J. Rickard, *Blocks and support varieties*, (in preparation).
- (2) P. Balmer, D. J. Benson and J. F. Carlson, *Endotrivial modules and invertible cohomology sheaves*, (in preparation).

Publications - Books:

- (1) J. F. Carlson, *Module Varieties and Cohomology Rings of Finite Groups*, Lecture Notes of the University of Essen, Vol. **13** (1985).
- (2) J. F. Carlson, *Modules and group algebras*, ETH Lecture Notes, Birkhäuser (1996) Basel.
- (3) A. Adem, J. Carlson, S. Priddy and P. Webb, eds., *Group Representations: Cohomology, Cohomology, Group Actions and Topology*, Proceedings of Symposia in Pure Mathematics, Vol. 63, American Math. Soc. (1997), Providence, R. I.
- (4) J. F. Carlson and L. Townsley, L. Valero-Elizondo and M. Zhang *Cohomology rings of finite groups*, Kluwer, Dordrecht, 2003.

Other Publications:

- (1) J. F. Carlson, Review of *Methods of Representation Theory with Applications to Finite Groups and Orders*, Vol 1 by C.W. Curtis and I. Reiner, Bull. Amer. Math. Soc. (New Series), **8**(1983), 112-116.
- (2) J. F. Carlson, Review of *Methods of Representation Theory with Application to Finite Groups and orders*, Vol. 2 by C.W. Curtis and I. Reiner, Bull. Amer. Math. Soc. (New Series), **19**(1988), 484-488.

Unpublished notes

- (1) A. Adem, J. F. Carlson and R. J. Milgram, *The cohomology of the Higman-Sims group*.
- (2) J. F. Carlson and K. W. Roggenkamp, *Lifting modules of group rings and Gorenstein Orders using syzygy functors*.

Algorithms and Software

- (1) Packages for homological algebra and basic algebras, which have been included in the computer algebra system MAGMA since 1998. Also the chapter describing the code in the Handbook of Magma Functions.
- (2) Packages for computing cohomology rings for finite groups, which computed most of the appendix in the book [101]. A newer version of the packages was released in MAGMA in the spring of 2005.
- (3) With Graham Matthews, a computer package to compute generators and relations for matrix algebras, described in [110]. The package was included in the release of MAGMA in the spring of 2005. Also the chapter describing the code in the Handbook of Magma Functions.

Invited Addresses since 2000:

“The thick subcategory generated by the trivial module”, Algebra Seminar, Australia National University, February 8, 2000.

“Categorical equivalences and orthogonal subcategories over group algebras”, Group Theory and Applications, CMA National Research Symposium, Australian National University, February 24, 2000.

“Endotrivial modules and categorical equivalences”, Algebra Seminar, University of Heidelberg, May 4, 2000.

“Computational methods for homological algebra”, Algebra Seminar, Universität Stuttgart, May 9, 2000.

“Designing a computer system for algebras”, Algebra Seminar, Université Lausanne, Switzerland, June 23, 2000.

“Endotrivial modules and categorical equivalences”, Topology Seminar, Université Paris, XIII, Villetaneuse, France June 30, 2000.

“Endotrivial modules and categorical equivalences”, Algebra Seminar, Universität Bielefeld, July 15, 2000.

“Endotrivial modules and categorical equivalences”, Algebra Seminar, Northwestern University, October 10, 2000.

“Endotrivial modules in Characteristic 2”, Group Theory Seminar, University of Chicago, October 12, 2000.

“Torsion Endotrivial Modules”, Special Session on Representation Theory of Finite and Algebraic Groups, Meeting of the American Mathematical Society, New Orleans, January 10, 2001.

“The rank variety of a module”, Algebra Seminar, Utah State University, January 31, 2001.

“Modules over group algebras”. Colloquium, Utah State University, February 1, 2001.

“Endotrivial modules and categorical equivalences”, Algebra Seminar, Université Lausanne, Switzerland, March 16, 2001.

“Torsion endotrivial modules”, Conference on Representation Theory of Finite Groups, Mathematisches Forschungsinstitut, Oberwolfach, Germany, March 27, 2001.

“Endotrivial modules and categorical equivalences”, Algebra Seminar, University of Sydney, Australia, May 11, 2001.

“Designing a computer system for algebras”, Computational Algebra Seminar, University of Sydney, Australia, May 17, 2001.

“Support varieties for modules over Chevalley groups and classical Lie algebras”, International Conference on Representations of Algebraic Groups and Quantum Groups, Kunming, China, July 26, 2001.

“Extracting generators and relations for matrix algebras”, Conference on Computational Group Theory, Mathematisches Forschungsinstitut, Oberwolfach, Germany, August 2, 2001.

“Support varieties for modules over Chevalley groups and classical Lie algebras”, Topology Seminar, Northwestern University, November 20, 2001.

“Support varieties for modules over Chevalley groups and classical Lie algebras”, Lie Algebras Seminar, University of Wisconsin, February 19, 2002.

“Torsion endotrivial modules”, Algebra Seminar, Kansas State University, April 8, 2002.

“Categories modules: Why bother?”, Colloquium, Kansas State University, April 9, 2002.

“My last lecture on the classification of endotrivial modules” London Mathematical Society Durham Symposium on the Representation Theory of Finite Groups, Grey College, Durham University, July 4, 2002.

“Classification of Endo-trivial Modules”, Algebra Seminar, University of Arizona, September 17, 2002.

“Categories of Modules in Representation Theory”, Colloquium, University of Arizona, September 19, 2002.

“Classification of Endo-trivial Modules”, Algebra Seminar, University of Auckland, October 15, 2002.

“Representation Theory: The Big Picture”, Colloquium, University of Auckland, October 18, 2002.

“The classification of endotrivial modules”, Workshop on Modular Representation Theory, Korean Institute For Advanced Study, Seoul, Korea, October 21, 23, 2002.

“Support varieties for modules over Chevalley groups and classical Lie algebras”, Algebra Seminar, University of Sydney, November 14, 2002.

“Isomorphisms of group algebras”, Computational Algebra Seminar, University of Sydney, November 21, 2002.

“Support varieties for algebraic groups”, Algebra and Topology Seminar, University of Lausanne, December 6, 2002.

“The classification of endotrivial modules”, Algebra Seminar, University of Stuttgart, December 13, 2002.

“Depth, detection, associated primes and isomorphisms in group cohomology”, Workshop on Commutative Algebra: Interactions with Homological Algebra and Representation Theory, MSRI, Berkeley, February 5, 2003.

“Problems in cohomology calculations”, Workshop on Computational Commutative Algebra, MSRI, Berkeley, March 14, 2003.

“Constructing endo-trivial modules”, Conference on Representation Theory of Finite Groups, Mathematisches Forschungsinstitut, Oberwolfach, Germany, March 28, 2003.

“The classification of endotrivial modules”, Algebra Seminar, University of Minnesota, May 2, 2003.

“The classification of endotrivial modules”, Group Theory Seminar, University of Chicago, May 8, 2003.

“Cohomology of groups and the classification of endotrivial modules”, Workshop on Representation Theory, Australian National University, Canberra, July 1,3, 2003 (two hour lectures).

“Coclass and p -groups”, Colloquium, University of Paderborn, October 14, 2003.

“Coclass and cohomology”, Group Theory Seminar, University of Chicago, October 23, 2003.

“The classification of endotrivial modules”, Conference on Current Trends in Representation Theory of Finite Groups, Banff Centre, Banff, Alberta, Canada, October 29, 2003.

“The classification of endotrivial modules”, Oberseminar, Max Planck Institut für Mathematik, Bonn, November 6, 2003.

“Coclass and cohomology”, Topology Seminar, Max Planck Institute für Mathematik, Bonn, November 10, 2003.

“The classification of endotrivial modules”, Algebra Seminar, Universität Bielefeld, Bielefeld, Germany, November 11, 2003.

“Coclass of p -groups and cohomology”, Algebra Seminar, Universität Stuttgart, November 17, 2003.

“Constructing endotrivial modules”, Chavalley Seminar, Insitute Henri Poincar/e, Paris, November 20, 2003.

“Coclass and cohomology”, Université Paris XIII, Toplogy Seminar, Villetaneuve, November 21, 2003.

“Coclass and cohomology”, Algebra and Topology Seminar, Ecole Polytechnique, Lausanne, Switzerland, December 4. 2003.

“The classification of endotrivial modules”, Encuentro Rioplatense de Álgebra y Geometría Algebraica, sponsored by the Centro de Matemática, Universidad de la República, Uruguay, December 15, 17, 2003.

“Coclass and cohomology”, Special Session on Group Cohomology, Meeting of the American Mathematical Society, Lauranceville, N. J., April 17, 2004.

“Endotrivial modules for groups of Lie type”, Seminar, University of Wisconsin, Madison, April 27, 2004.

“The classification of endotrivial modules”, Algebra Seminar, University of Hannover, May 20, 2004.

“Coclass and cohomology”, Colloquium, University of Hannover, May 25, 2004.

“Endotrivial modules for groups of Lie type”, Bristol- Leicester-Oxford Algebra Seminar, University of Bristol, June 5, 2004.

“Coclass and cohomology”, Colluquium, University of Southampton, June 17, 2004.

“Endotrivial modules for groups of Lie type”, Joint AMS-IMS-SIAM Summer Research Conference on Representation of Algebraic Groups, Snowbird, Utah, July 16, 2004.

“Extracting generators and relations for matrix algebras” International Conference on the Representations of Algebras, Patzcuaro, Mexico, August 20, 3004.

“Matrix algebras”, Computational Algebra Seminar, University of Sydney, November 4, 2004.

“Extracting generators and relations for matrix algebras”, Colloquium, Ohio State University, Dec. 2, 2004.

“Lifting modules of group rings and Gorenstein Orders using syzygy functors”, Special session on Representation of Algebraic and Finite Groups, American Mathematical Society Meeting, Atlanta, January 9, 2005.

“Presentations for matrix algebras”, Representation Theory Seminar, EPFL, Lausanne, March 16, 2005.

“Coclass and cohomology”, Workshop on Topology, Representation Theory and Cohomology, Bernoulli Centre, EPFL, Lausanne, April 8, 2005.

“The classification of endotrivial modules”, Workshop on Endo-permutation Modules, Bernoulli Centre, EPFL, Lausanne, April 12, 2005.

“Group representations and endopermutation modules”, International Asia-Link Conference on Algebras and Representations, Beijing Normal University, Beijing, May 23, 25, 2005 (two lectures).

“Homological algebra and group algebras”, Magma Workshop on Group Theory and Algebraic Geometry, August 22, 2005.

“Counting Blocks”, Algebra Seminar, Northwestern University, October 4, 2005.

“Counting Blocks”, Algebra Seminar, University of Chicago, October 13, 2005.

“Counting Blocks”, Conference on Representation Theory, University of Aberdeen, Aberdeen, Scotland. October 26, 2005.

“The poset of elementary abelian p -subgroups of rank at least two” Group Theory Seminar, University of Chicago, February 9, 2006.

“Modules of Constant Jordan type”, Conference on Representation Theory of Finite Groups, Mathematisches Forschungsinstitut, Oberwolfach, Germany, March 30, 2006.

“Monomial Condensation”, Computational Algebra Seminar, University of Sydney, May 25, 2006.

“Modules of Constant Jordan type”, Algebra Seminar, University of New South Wales, June 6, 2006.

“The poset of elementary abelian p -subgroups of rank at least two” Algebra Seminar, University of Auckland, June 14, 2006.

“Modules of Constant Jordan type”, Group Theory Seminar, University of Chicago, October 5, 2006.

“Representations of Finite Groups”, Modern Mathematics: An Introduction to the 2007-2008 Programs at MSRI, Tampa, FL, October 26, 2008.

Honors and Visiting Positions:

Philip Francis DuPont Fellowship, 3 years, University of Virginia.

Fulbright senior research fellowship, Universität Essen, West Germany, Summer semester 1984 (4 months).

Visiting Professor for one month, École Normale Supérieure, Paris, June 1985.

Visiting Professor for one month, University of Chicago, April 1986.

Invited Participant, Symposium on Representation Theory of Groups and Related Topics, University of Manchester, March-May, 1988.

Visiting Professor, Universität Essen, January-March, 1989.

Visiting Professor, University of Bielefeld, January 1990.

Invited speaker, Algebra Section, International Congress of Mathematicians, Kyoto, Japan, August 1990.

Invited participant, Algebra Symposium on Groups, Rings and Representations, University of Warwick, March-June, 1991.

Visiting Fellow, Mathematics Research Section, The Australian National University, Canberra, January-March, 1992.

Visiting Fellow, Centre for Mathematics and its Applications, Australian National University, Canberra, March-May, 1994.

Visiting Member, Forschungsinstitut für Mathematik, ETH, Zürich, April-July, 1995.

Visiting Member, Mathematical Institute, Oxford, April-July 1997

Humboldt Research Award for Senior U. S. Scientists

Visiting Professor, University of Sydney, January 1999.

Visiting Fellow, University of Stuttgart, March-July 1999 (supported by the Humboldt Foundation).

Visiting Fellow, University of Stuttgart, April-July 2000 (supported by the Humboldt Foundation).

Visiting Professor, University of Sydney, July, 2003.

Visiting Professor, Max Planck Institut für Mathematik, Bonn, Germany, September-Novembers, 2003.

Visiting Professor, University of Sydney, October-November, 2004.

Visiting Professor, Ecole Polytechnique (EPFL), Lausanne, February-June, 2005.

Visiting Professor, University of Sydney, May, 2006.

Ph.D. Students:

Directed dissertation of

- Stephen Kuhn - PhD. Mathematics (1978)
- Deborah Sherman - PhD. Mathematics (1994)
- Chuang Peng - PhD. Mathematics (1995)
- Peteris Daugulis - PhD. Mathematics (1998)
- Jason Whitt - PhD. Mathematics (1998)
- Mucheng Zhang - PhD. Mathematics (2000)
- Graham Matthews- PhD. Mathematics (2004)

Masters Students:

Victoria Seals, Mathematics, MA, Fall 1993

Grant Support from NSF:

DMS 7801685: "Representations of Modular Group Algebras", June 1, 1978 - November 30, 1980, \$14,600.

DMS 8002509: "Representations of Modular Group Algebras", June 15, 1980 - November 30, 1982, \$19,000.

DMS 8201469: "Modular Representations of Groups" (co-P. I. with Leonard Chastkofsky), June 1, 1982 - May 30, 1986. \$68,700

DMS 8501760: “Representations of Groups and Algebras”, June 1, 1985 - November 30, 1987, \$41,100.

INt 8617583: “Scientific Visit to Study Integral Representations of Finite Groups”, April 1, 1987 - April 30, 1987, \$3,991.40.

Conference on Cohomology and Representation Theory of Finite and Algebraic Groups, University of Georgia (Jan. 1988) \$6000.

DMS 8701068: “Modular Representations of Finite Groups”, July 1, 1987 - December 30, 1990. \$68,200

DMS 9001689: “Modular Representations of Finite Groups”, June 1, 1990 - November 30, 1993, \$123,150.

DMS 9001929: “Modular Representations of Finite Groups”, June 1, 1993 - November 30, 1998, \$244,894.

DMS 9526513: “1996 Summer Research Institute, ‘Cohomology, Representations and Actions of Finite Groups’”, (co-principal investigator with Samuel M. Rankin, Associate Executive Director, American Mathematical Society) \$151,793, Grant awarded to the American Mathematical Society.

DMS9870035: “Modular Representations of Finite Groups”, June 1, 1998 - November 30, 2001, \$216,256.

DMS0100662: “Modular Representations of Finite Groups”, July 15, 2001 - June 30, 2005, \$144,213.

DMS0100662: “Modular Representations of Finite Groups”, June 1, 2004 - May 31, 2007, \$112,344.

Other grant activity – Partially supported by the University of Georgia Middle Grades Teacher Education Project (N.S.F. funded), Academic years 1987-89.

Other Activities:

Member of Board of Editors for Communications in Algebra, 1985-90.

Member of the A.M.S. Committee to select speakers for Southeastern Section Meetings (1987-88).

Organizer of conference on Cohomology and Representation Theory of Finite and Algebraic Groups, Athens, Ga., Jan. 3-5, 1988.

Chairman of the organizing committee for the conference “Finite and Algebraic Groups: Representations and Cohomology”, Arcata, Ca. July 8-14, 1989, jointly sponsored by AMS, SIAM and IMS and supported by a grant from NSF.

Chairman of organizing committee for “Workshop on General Representation Theory”, MSRI, Berkeley, December 3-7, 1990.

Chairman of organizing committee for the conference “Cohomology, Representations and Actions of Finite Groups”, South Hadley, Mass., June 20-26, 1992, jointly sponsored by AMS, IMS and SIAM and supported by NSF.

Member of the AMS Committee to select speakers for the Southeast Section Meetings (1994-95).

Organizer (with A. Adem) Special Session on Cohomology and Representations of Finite Groups at the annual meeting of the American Mathematical Society in San Francisco, January 4-7, 1995.

Member of the Program Committee for the Second Magma Conference on Computational Algebra, Marquette University in Milwaukee, May 12-17, 1995.

Organizer (with J. Alperin) Special Session on “Representations of Finite Groups” for the annual meeting of the American Mathematical Society in Baltimore, Md., January 7-10, 1998.

Member of Board of Editors for the journal “Algebras and Representation Theory”, 1999 -.

Organizer (with A. Adem and H.-W. Henn) of a meeting at the Mathmatisches Forschungsinstitut Oberwolfach (Germany) on the topic “Cohomology, Representations and Actions of Finite Groups”, July 23–29, 2000.

Organizer (with A. Adem) Special Session on “Group Cohomology and Applications to Homotopy Theory and Representation Theory” at the annual meeting of the American Mathematical Society in New Orleans, January 10-13, 2001.

Cochairman of organizing committee for the conference “Groups, Representations and Cohomology”, South Hadley, Mass., June 6-14, 2002, jointly sponsored by AMS, IMS and SIAM and supported by NSF.

Invited participant in the workshop on Computation in Algebra, Number Theory and Combinatorics, sponsored by the American Institute of Mathematics, at the National Science Foundation, September 21-22, 2002.

Member of the board of editors for the Computational Algebra section of the Journal of Algebra, 2004 -.

Organizer (with A. Adem and H.-W. Henn) of a meeting at the Mathmatisches Forschungs-institut Oberwolfach (Germany) on the topic “Cohomology, Representations and Actions of Finite Groups”, Sept, 4-10, 2005.

Chairman of the Organizing Committee for the semester program “Representation Theory of Finite Groups and Related Topics”, Mathematical Sciences Research Institute, Berkeley, January-May, 2008.

Member of the organizing committee for a meeting at the Banff International Research Station, Banff, Canada, on the topic “Flavors of Groups”, November 17-22, 2005.