

Curriculum Vitae of James E. Humphreys

Education:

Public schools, Erie, PA
Oberlin College, A.B. 1961 (summa cum laude)
Cornell University, 1961–63 (graduate study in philosophy, mathematics)
Yale University, A.M. 1964, Ph.D. 1966 (mathematics)

Academic positions:

Assistant Professor, U. Oregon, 1966–70 (on leave 1968–70)
Associate Professor, New York U., 1970–74
Associate Professor, U. Massachusetts, 1974–76
Professor, U. Massachusetts, 1976–2003 (retired)

Visiting positions (one semester or longer):

Institute for Advanced Study, 1968–69 and Spring 1977
Courant Institute, Visiting Member, 1969–70
Rutgers University, Visiting Professor, Spring 1985

Fellowships, grants, honors:

National Merit Scholarship
Phi Beta Kappa
Woodrow Wilson Fellowship
NSF Graduate Fellowships
L.R. Ford Award (Math. Assn. of America), 1976
NSF research grants, 1971–96

Memberships:

American Mathematical Society

Doctoral students:

Mark A. Elmer, On the modular representation theory of semisimple Lie algebras (1979)

Susan E. Fettes, On the representation theory of the symmetric and general linear groups (1982)

Zongzhu Lin, The structure of cohomology of line bundles on the flag varieties for some groups of rank 2 (1989)

Cornelius Pillen, Tensor products and injectives for groups of Lie type (1992)

Sandra Rhoades, A character-theoretic approach to Artin's Conjecture (1993)

Professional service:

reviewer for *Mathematical Reviews* (400+ reviews)

member of editorial board, *Communications in Algebra*, 1974–84

member of AMS Nominating Committee, 1989–1991

member of AMS Search Committee for Associate Treasurer, 1991

member of editorial committee, AMS book series *Graduate Studies in Mathematics*, 1993–1997; chair, 1997–2001

Colloquium or seminar talks:

Aarhus, Academia Sinica (Beijing), Amherst College, Australian National U., Bielefeld, Bonn, Boston U., Brandeis, Cambridge, Carleton, Chicago, Chinese U. of Hong Kong, Clark, Columbia, Connecticut, Copenhagen, Crete, CUNY Graduate Center, Dalhousie, Duke, Fordham, Fudan, Georgia, Giessen, Hamburg, Harvard, IAS, Illinois (Chicago), Kansas State, McMaster, Michigan, NYU, Notre Dame, Ohio State, Oklahoma, Queen Mary College (London), Queen's U. (Ontario), Rutgers, Seton Hall, Smith College, South Alabama, Stevens Institute, Sydney, UC Riverside, Utrecht, Virginia, Warwick, Washington, Wisconsin, Yale

Conference participation, research visits (V), invited lectures (L):

AMS Summer Institute on Algebraic Groups (Boulder), July–August 1965

NSF Advanced Science Seminar on Algebraic Geometry (Bowdoin), Summer 1967

NSF Advanced Science Seminar on Algebraic Groups (Bowdoin), Summer 1968 (L)

Queen Mary College (London), May–June 1969 (V/L)

Oberwolfach conference (group theory), June 1969

AMS Symposium on Representations of Finite Groups and Related Topics (Madison), April 1970

AMS Annual Meeting (Atlantic City), January 1971

Oberwolfach conference (algebraic groups), June 1971 (L)

Lie Algebra Conference (Ohio State), October 1971 (L)

Drexel Lie Algebra Conference, June 1972 (L)

AMS Special Session on Representations of Finite Groups (San Francisco), January 1974 (L)
 University of Bielefeld, May–June 1974 (V/L)
 AMS Special Session on Structure and Representations of Lie Algebras (Washington, DC), January 1975 (L)
 Oberwolfach conference (algebraic groups), June 1976 (L)
 AMS Annual Meeting (St. Louis), January 1977
 Seminar on Lie Theories (Queen’s University), June–July 1977 (L)
 CBMS Regional Conference (Madison), August 1977
 AMS Special Session on Representations of Finite Dimensional Algebras and Finite Groups (Atlanta), January 1978 (L)
 Algebra Day (Carleton University), April 1978 (L)
 London Math. Soc. Research Symposium on Finite Simple Groups (Durham), August 1978 (L)
 Midwest Finite Group Conference (Ann Arbor), November 1978
 New York Group Theory Seminar, April 1979 (L)
 Oberwolfach conference (algebraic groups), April 1979
 AMS Summer Institute on Finite Groups (Santa Cruz), June–July 1979 (L)
 Representations of Algebras (Ottawa), August 1979 (L)
 AMS Special Session on Cohomology and Representations of Algebraic Groups (San Antonio), January 1980, co-organizer and speaker
 Shanghai Normal University, April–June 1980 (L)
 Academia Sinica (Beijing), July 1980 (L)
 Chinese University of Hong Kong, July 1980 (L)
 AMS Annual Meeting (San Francisco), January 1981, invited hour address (L)
 Lie Algebra Conference (Rutgers), May 1981
 Yale Algebra Conference, June 1981 (L)
 Kenna Lectures (Notre Dame), September 1981 (L)
 AMS Regional Meeting (Amherst), October 1981
 Aarhus University, November 1981 (V/L)
 University of Warwick, December 1981 (V/L)
 Cambridge University, December 1981 (V/L)
 Oberwolfach conference (enveloping algebras), March 1982 (L)
 University of Crete, April 1982 (V/L)
 University of Bonn, May–June 1982 (V/L)
 Oberwolfach conference (ℓ -adic representations), June 1982
 Oberwolfach conference (algebraic groups), June 1982

AMS Special Session on Representation Theory of Finite Groups of Lie Type (Denver), January 1983 (L)
 Karcher Visitor (U. Oklahoma), April 1983 (L)
 Arbeitstagung (Bonn), June 1983
 Oberwolfach conference (combinatorics and algebraic groups), June 1983
 University of Sydney, July–August 1983 (V/L)
 Midwest Group Theory Conference (U. Chicago), November 1983 (L)
 Aarhus University, January 1984 (V/L)
 Lie Algebra Conference (Windsor, Ontario), June–July 1984 (L)
 Northwestern U. Conference on Group Cohomology, March 1985 (L)
 Oberwolfach conference (\mathcal{D} -modules), June 1985
 University of Hamburg, June 1985 (V/L)
 AMS Special Session on Representations of Reductive Lie Groups (Amherst), October 1985, organizer
 Conference on Computers in Algebra (U. Illinois at Chicago), December 1985
 London Math. Soc. Research Symposium on Algebraic Groups (Durham), July 1987 (L)
 Workshop on Lie Algebras (Madison), August 1987 (L)
 Conference on Cohomology and Representation Theory of Finite and Algebraic Groups (U. Georgia), January 1988 (L)
 AMS Special Session on Algebraic Groups and Related Topics (E. Lansing), March 1988 (L)
 Manchester Conference on Representation Theory of Groups and Related Topics, July 1988
 AMS Centennial Meeting (Providence), August 1988
 Kac-Moody Lie Algebras and Physics (N. Carolina State U.), December 1988 (L)
 AMS Special Session on Computational Group Theory (Phoenix), January 1989 (L)
 Aarhus University, April 1989 (V/L)
 AMS Special Session on Algebraic Groups and Related Topics (Chicago), May 1989 (L)
 Finite and Algebraic Groups (Arcata), July 1989
 Harmonic Analysis on Reductive Groups (Bowdoin College), August 1989
 AMS Annual Meeting (Louisville), January 1990
 AMS Regional Meeting (Penn State), April 1990
 Aarhus University, June 1990 (V/L)

AMS Special Session on Lie Groups and Algebraic Groups (Amherst), October 1990, co-organizer

Workshop on Representations of Reductive Groups over Finite Fields (MSRI, Berkeley), November 1990

AMS Summer Research Institute on Algebraic Groups and their Generalizations (Penn State), July 1991

Mid-Atlantic Algebra Conference (Wake Forest), September 1991 (L)

AMS Special Session on Invariant Theory (Baltimore), January 1992 (L)

Conference on Structure and Representation Theory of Lie Algebras (Yale), April 1992 (L)

Aarhus University, August 1992 (V/L)

European School of Group Theory (Enschede, Netherlands), August 1992 (L)

AMS Annual Meeting (San Antonio), January 1993

Algebraic Representation Theory Workshop (U. Washington), July 1993

Gelfand Conference (Rutgers), October 1993

AMS Special Session on Representations of Algebraic Groups and Quantum Groups (Kansas State), March 1994 (L)

AMS Special Session on Representations of Algebraic Groups (Oklahoma State), October 1994 (L)

AMS Annual Meeting (San Francisco), January 1995

Conference on Modular Interfaces (U. California Riverside), February 1995 (L)

AMS Regional Meeting (Hartford), March 1995

AMS Special Session on Lie Theory (Chicago), March 1995 (L)

Workshop on Algorithms in Algebra (Holland), May 1995 (L)

Conference on Representations of $GL(n)$ and Finite Dimensional Algebras (QMW, London), September 1995 (L)

Aarhus University, September 1995 (V/L)

Conference on Algebraic Groups and Representations (Cortona, Italy), September 1995 (L)

AMS Regional Meeting (Boston), October 1995

University of South Alabama, October 1995 (V/L)

AMS Summer Research Institute on Cohomology, Representations and Actions of Finite Groups (Seattle), July 1996 (L)

Algebra Day, Carleton University (Ottawa), April 1997 (L)

Representations of Algebraic Groups and Related Finite Groups, Isaac Newton Institute (Cambridge), June–July 1997 (V/L)

Representation Theories and Algebraic Geometry (U. Montreal), July–August 1997

AMS Special Session on Representations of Finite Groups (Baltimore),
 January 1998 (L)

AMS Special Session on Representation Theory of Lie Algebras, Algebraic
 Groups and Quantum Groups (Kansas State), March 1998 (L)

NSF/CBMS Regional Conference (Denton, Texas), May 1998

AMS Special Session on Representation Theory of Lie Algebras (Buffalo),
 April 1999 (L)

AMS Special Session on Geometry and Representation Theory of Algebraic
 Groups (Providence), October 1999, co-organizer

University of Warwick, October 1999 (V/L)

Conference on Algebra and Algebraic Geometry with Applications (Purdue),
 July 2000 (L)

AMS Special Session on Representation Theory of Finite and Algebraic
 Groups (New Orleans), January 2001 (L)

AMS Special Session on Integrable Systems and Quantum Groups (Williamstown,
 MA), October 2001 (L)

AMS–IMS–SIAM Summer Research Conference on Groups, Representations,
 and Cohomology (Mt. Holyoke College), June 2002

Workshop on Finite Dimensional Algebras, Algebraic Groups and Lie
 Theory (Fields Institute, Toronto), August 2002 (L)

Aarhus University, September 2002 (V/L)

University of Warwick, September 2002 (V/L)

Conference on Representation Theory for Algebraic Groups, Aarhus Uni-
 versity, June 2003

Aarhus University, June 2003 (V/L)

Coxeter Legacy Conference (Toronto), May 2004 (L)

AMS–IMS–SIAM Summer Research Conference on Representations of
 Algebraic Groups, Quantum Groups, and Lie Algebras (Snowbird, UT),
 July 2004 (L)

University of South Alabama, April 2006 (L)

AMS Special Session on Algebraic Groups (Durham, NH), April 2006
 (L)

LMS–EPSRC Short Course on Algebraic Groups and Related Topics
 (Birmingham, UK), September 2008 (L)

AMS Special Session on Linear Algebraic Groups (Boston), January 2012
 (L)

Publications

1. Algebraic groups and modular Lie algebras, *Mem. Amer. Math. Soc.* **71** (1967)
2. Existence of Levi factors in certain algebraic groups, *Pacific J. Math.* **23** (1967), 543–546
3. On the automorphisms of infinite Chevalley groups, *Canad. J. Math.* **21** (1969), 908–911
4. Modular representations of classical Lie algebras, *Bull. Amer. Math. Soc.* **76** (1970), 878–882
5. *Arithmetic Groups*, Courant Institute lecture notes, 1971
6. Defect groups for finite groups of Lie type, *Math. Z.* **119** (1971), 149–152
7. Modular representations of classical Lie algebras and semisimple groups, *J. Algebra* **19** (1971), 51–79
8. Remarks on “A theorem on special linear groups”, *J. Algebra* **22** (1972), 316–318
9. *Introduction to Lie Algebras and Representation Theory*, Springer, New York, 1972 (revised second printing, 1978; third printing, 1980; fourth printing, 1983; fifth printing, 1987; sixth printing, 1994; seventh printing, 1997; Chinese translation, Shanghai, 1981; Russian translation, Moscow, 2003)
10. Projective modules for finite Chevalley groups (with D.-N. Verma), *Bull. Amer. Math. Soc.* **79** (1973), 467–468
11. Projective modules for $SL(2, q)$, *J. Algebra* **25** (1973), 513–518
12. Some computations of Cartan invariants for finite groups of Lie type, *Comm. Pure Appl. Math.* **26** (1973), 745–755
13. Variations on Milnor’s computation of $K_2\mathbf{Z}$, pp. 304–307, *Algebraic K-Theory II*, Lect. Notes in Math. **342**, Springer, Berlin, 1973
14. Weyl groups, deformations of linkage classes, and character degrees for Chevalley groups, *Comm. Algebra* **1** (1974), 475–490
15. Representations of $SL(2, p)$, *Amer. Math. Monthly* **82** (1975), 21–39

16. *Linear Algebraic Groups*, Springer, New York, 1975 (revised second printing, 1981; third printing, 1987; fourth printing, 1995; fifth printing, 1998; Russian translation, Nauka, Moscow, 1980)
17. Review of *Infinite-dimensional Lie Algebras* by R.K. Amayo and I. Stewart, *Bull. Amer. Math. Soc.* **82** (1976), 45–46
18. *Ordinary and Modular Representations of Chevalley Groups*, Lect. Notes in Math. **528**, Springer, Berlin, 1976
19. On the hyperalgebra of a semisimple algebraic group, pp. 203–210, *Contributions to Algebra: A Collection of Papers Dedicated to Ellis Kolchin*, Academic Press, New York, 1977
20. Review of *Rational Methods in Lie Algebras* by G.B. Seligman, *Bull. Amer. Math. Soc.* **83** (1977), 993–997
21. A construction of projective modules in the category \mathcal{O} of Bernstein-Gelfand-Gelfand, *Indag. Math.* **39** (1977), 301–303
22. Hilbert’s fourteenth problem, *Amer. Math. Monthly* **85** (1978), 341–353
23. Symmetry for finite dimensional Hopf algebras, *Proc. Amer. Math. Soc.* **68** (1978), 143–146
24. Weyl modules and Bott’s theorem in characteristic p , pp. 474–483, *Lie Theories and their Applications*, Queen’s Papers in Pure & Appl. Math. No. 48, Kingston, Ont., 1978
25. Finite and infinite dimensional modules for semisimple Lie algebras, pp. 1–64, *Lie Theories and their Applications*, Queen’s Papers in Pure & Appl. Math. No. 48, Kingston, Ont., 1978
26. Blocks and indecomposable modules for semisimple algebraic groups (with J.C. Jantzen), *J. Algebra* **54** (1978), 494–503
27. Review of *Semisimple Lie Algebras* by M. Goto and F.D. Grosshans, *Bull. Amer. Math. Soc. (N.S.)* **1** (1979), 515–518
28. *Arithmetic Groups*, Lect. Notes in Math. **789**, Springer, Berlin, 1980 (Russian translation, Mir, Moscow, 1983)
29. Deligne-Lusztig characters and principal indecomposable modules, *J. Algebra* **62** (1980), 299–303

30. Modular representations of finite groups of Lie type, pp. 259–290, *Finite Simple Groups II*, Academic Press, London, 1980
31. Cartan invariants and decomposition numbers of Chevalley groups, pp. 347–351, *The Santa Cruz Conference on Finite Groups*, Proc. Sympos. Pure Math. **37**, Amer. Math. Soc., Providence, RI, 1980
32. Highest weight modules for semisimple Lie algebras, pp. 72–103, *Representation Theory I*, Lect. Notes in Math. **831**, Springer, Berlin, 1980
33. Ordinary and modular characters of $\mathrm{SL}(3, p)$, *J. Algebra* **72** (1981), 8–16
34. Restricted Lie algebras (and beyond), pp. 91–98, *Algebraists' Homage*, Contemporary Math. **13**, Amer. Math. Soc., Providence, RI, 1982
35. Arithmetic groups, pp. 73–99, *Topics in the Theory of Algebraic Groups*, Notre Dame Lecture Notes. No. 10, 1982
36. Review of *Module Categories for Analytic Groups* by A.R. Magid, *Bull. Amer. Math. Soc. (N.S.)* **8** (1983), 385–387
37. Review of *Adeles and Algebraic Groups* by A. Weil, *Linear & Multilinear Algebra* **14** (1983), 111–112
38. On the structure of Weyl modules, *Comm. Algebra* **12** (1984), 2665–2677
39. Cartan invariants, *Bull. London Math. Soc.* **17** (1985), 1–14
40. Non-zero Ext^1 for Chevalley groups (via algebraic groups), *J. London Math. Soc.* **31** (1985), 463–467
41. Cohomology of G/B in characteristic p , *Adv. in Math.* **59** (1986), 170–183
42. Induced modules for semisimple groups and Lie algebras, pp. 341–349, *Lie Algebras and Related Topics* (Conf. Proc. of Canad. Math. Soc., vol. 5), Amer. Math. Soc., Providence, RI, 1986
43. Projective modules for $\mathrm{Sp}(4, p)$ in characteristic p , *J. Algebra* **104** (1986), 80–88

44. Cohomology of line bundles on G/B for the exceptional group G_2 , *J. Pure Appl. Math.* **44** (1987), 227–239
45. The Steinberg representation, *Bull. Amer. Math. Soc. (N.S.)* **16** (1987), 247–263
46. Generic Cartan invariants for Frobenius kernels and Chevalley groups, *J. Algebra* **122** (1989), 345–352
47. Review of *Buildings* by K.S. Brown and *Lectures on Buildings* by M.A. Ronan, *Bull. Amer. Math. Soc. (N.S.)* **21** (1989), 303–307
48. Ordinary and modular characters of $SU(3, p)$, *J. Algebra* **131** (1990), 425–431
49. *Reflection Groups and Coxeter Groups* (Cambridge Studies in Advanced Mathematics, 29), Cambridge Univ. Press, 1990; paperback edition, 1992
50. Cohomology of line bundles on flag varieties in prime characteristic, pp. 193–204, *Proc. Hyderabad Conference on Algebraic Groups*, Manoj Prakashan, Madras, 1991
51. Review of *Representations and Cohomology, II: Cohomology of groups and modules* by D.J. Benson, *Bull. Amer. Math. Soc. (N.S.)* **29** (1993), 262–265
52. Extremal composition factors for groups of Lie type, pp. 303–310, *Algebraic Groups and Their Generalizations: Classical Methods*, Proc. Sympos. Pure Math. **56**, Part 2, Amer. Math. Soc., Providence, RI, 1994
53. Another look at Dickson’s invariants for finite linear groups, *Comm. Algebra* **22** (1994), 4773–4779
54. Review of *Group Theory and Physics* by S. Sternberg, *Bull. Amer. Math. Soc. (N.S.)* **32** (1995), 455–457
55. *Conjugacy Classes in Semisimple Algebraic Groups*, Math. Surveys Monographs, vol. 43, Amer. Math. Soc., Providence, RI, 1995
56. Comparing modular representations of semisimple groups and their Lie algebras, *Modular Interfaces* (Riverside, CA, 1995), 69–80, AMS/IP Stud. Adv. Math., 4, Amer. Math. Soc., Providence, RI 1997

57. Modular representations of simple Lie algebras, *Bull. Amer. Math. Soc. (N.S.)* **35** (1998), 105–122
58. Review of *Pioneers of Representation Theory* by Charles W. Curtis, *Bull. Amer. Math. Soc. (N.S.)* **37** (2000), 359–362
59. Analogues of Weyl’s formula for reduced enveloping algebras, *Experiment. Math.* **11** (2002), 567–573
60. *Modular Representations of Finite Groups of Lie Type*, London Math. Soc. Lecture Note Ser., 326. Cambridge Univ. Press, Cambridge, 2006
61. Representations of reduced enveloping algebras and cells in the affine Weyl group, *Representations of Algebraic Groups, Quantum Groups, and Lie Algebras*, pp. 63–72, *Contemp. Math.*, 413, Amer. Math. Soc., Providence, RI, 2006
62. *Representations of Semisimple Lie Algebras in the BGG Category \mathcal{O}* , *Grad. Stud. Math.*, Amer. Math. Soc., Providence, RI, 2008.