Curriculum Vitae of J. Toby Stafford

Address:	Department of Mathematics, Alan Turing Building, University of Manchester, Oxford Road, Manchester M13 9PL.
Email:	Toby[dot]Stafford[at]manchester[dot]ac[dot]uk
Born:	Oxford, England, June 2, 1951. *Nationality*: British

Positions Held:

1976-8	NATO Postdoctoral Research Fellow, Brandeis University;
1978-82	Davey Research Fellow, Gonville and Caius College, Cambridge, England;
1982-85	Lecturer, University of Leeds, England:
1985-88	Reader, University of Leeds, England:
1988-9	Personal Chair, University of Leeds, England:
1989–2007	Professor, University of Michigan, Ann Arbor.
2007–2018	Professor, University of Manchester.
2018–present	Emeritus Professor, University of Manchester.

Visiting Positions:

May 1981	Université de Paris VI;
Sept. 1983	Wiezmann Institute;
July-Aug. 1982	Wiezmann Institute;
Sept.1980-June 1981	University of California, San Diego;
April-Dec. 1985	University of Washington;
Sept. 1986-June 1987	University of California, San Diego;
April-June 1988	University of Chicago;
Jan.-April 1996	MIT;
June 1996	Université de Poitiers;
June 1998	Université de Brest;
Jan.-May 2000	Mathematics Science Research Institute, Berkeley;
Nov.-Dec. 2003	Mittag-Lefler Institute;
Nov.-Dec. 2006	Newton Institute, Cambridge;
Jan.-Feb. 2011	Hausdorff Institute, Bonn;
Jan.-May 2013	Mathematics Science Research Institute, Berkeley;

Education and Degrees:

BA	University of Cambridge, England,	1972;
MA	University of Cambridge, England,	1976;
PhD	University of Leeds, England,	1976 (advisor J. C. Robson).

Honours:

1980	Whitehead Prize, London Mathematical Society;
1996	Excellence in Research Award, University of Michigan;
2002	Invited Speaker, ICM (Beijing, August 2002);
2007-2013	Royal Society-Wolfson Research Merit Award;
2012-2013	Clay Senior Scholar and Simons Visiting Professor, MSRI, Berkeley;
2013	Fellow of the American Mathematical Society.

Research Students:

Martin P Gilchrist (1982-1985) PhD 1985	S. Collier Coutinho (1982-1986) PhD 1986
Tim Jarrold (1986-1990) PhD 1990	David Kausch (1990-1993) PhD 1993
Darin Stephenson (1990-1994) PhD 1994	Kok-Ming Teo (1991-1994) PhD 1994
Paul Check (1994-1997) PhD 1997	Dennis Keeler (1997–2000) PhD 2000
Kimberley Retert (1997–2001) PhD 2001	Dan R. Rogalski (1998–2002) PhD 2002
Susan Sierra (2005–2008) PhD 2008	Chelsea Walton (2006–2011) PhD 2011
Sian Fryer (2010–2014) PhD 2014	Andrew Davies (2010–2014) PhD 2014
Dominic Bush-Hipwood (2014–2018) PhD 2018	

As first positions, Keeler, Rogalski and Walton all obtained NSF Postdocs and Moore Instructorships at MIT, while Sierra obtained an NSF Postdoc and Instructorship at Princeton.

Postdoctoral Advisees:

Martin Holland (1987-89),	James Zhang (1990-93),	Tony Giaquinto (1991-95),
Joanna Stanizskis (1994-97)	Ioannis Emmanouil (1995-98),	Daniel Chan (2000-02),
Jason Bell (2002-05),	Tatyana Chmutova (2006–07),	Gwyn Bellamy (2011-13).

NSF Grants	Award Amount
1990–1993	$166,200.00
1993–1998	$416,400.00
1998–2003	$329,185.00
2003–2006	$230,049.00
2006–2011	$460,000.00

Citations: **h-index** 21 (21 papers with at least 21 citations on the Web of Science.)
Over 1,300 Web of Science citations;
Over 950 citations on MathSciNet.

Editorial Boards:

1987–1988	London Mathematical Society;
1988–2018	Journal of Algebra;
1993-1996	Contemporary Mathematics;
2001-2008	AMS Surveys and Monographs (Chair 2005-08);
2007-2009	AMS University Lecture Notes Series;
2007–present	Algebra and Number Theory;
2009–present	LMS Lecture Note Series;

Conferences and Conference Organisation:

1999-2000	Organising Committee, MSRI year in Noncommutative Algebra;
2002	First Auslander Distinguished Lecturer, Northeastern University;
2002	Organising Committee, Oberwolfach conference in Noncommutative Algebra;
2003-4	Scientific Committee, Warwick Symposium on Noncommutative Algebra;
2004	Scientific Committee for conference at the Mittag-Leffler Institutei;
2006	Organising Committee, Oberwolfach conference in Noncommutative Algebra;
2006	Organising Committee for conference in Ring Theory at Leeds University;
2008 & 2011	Organised ARTIN Conferences at Manchester;
2010	Organising Committee, Oberwolfach conference in Noncommutative Algebra;
2011	UCSB Distinguished Lecturer in the Mathematical Sciences;
2011	Scientific Committee for conference at Seattle, Washington;
2011	Scientific Committee for conference at Fudan University Shanghai;
2013	Chair of MSRI programme in NC Algebraic Geometry and Representation Theory;
2014	Organising Committee, Oberwolfach conference in Noncommutative Algebra;
2014	Scientific Committee for conference at Fudan University Shanghai;
2014-5	Organising Committee, Warwick Symposium on Derived Categories and Applications;
2018	Organising Committee, Oberwolfach conference in Noncommutative Algebra;

External Activities:

1995-2001	NSA Mathematical Sciences Advisory Panel;
2001-3	AMS Von Neumann Symposium Committee;
2001-2	AMS Cole Prize Committee;
2004	NSF Algebra, Number Theory and Combinatorics Review Panel;
2005-9	Member of the AMS Council;
2008	External Committee for Mathematics, Universities of Paris 6 and 7;
2008-10	LMS Prizes Committee;
2011	External Committee for Mathematics, University of Antwerp;

Publications.

1) Completely faithful modules and ideals of simple Noetherian rings, *Bull. London Math. Soc.* **8** (1976), 168–173.

2) (with Rosenberg, A.) Global dimension of Ore extensions, *in Algebra, topology, and category theory (a collection of papers in honor of Samuel Eilenberg)*, pp. 181–188. Academic Press, New York, 1976.

3) Stable structure of noncommutative Noetherian rings, *J. Algebra* **47** (1977), 244–267.

4) Weyl algebras are stably free, *J. Algebra* **48** (1977), 297–304.

5) A simple Noetherian ring not Morita equivalent to a domain., *Proc. Amer. Math. Soc.* **68** (1978), 159–160.

6) Stable structure of noncommutative Noetherian rings. II, *J. Algebra* **52** (1978), 218–235.

7) (with Krause, G. and Lenagan, T.) Ideal invariance and Artinian quotient rings, *J. Algebra* **55** (1978), 145–154.

8) Morita equivalence of simple Noetherian rings, *Proc. Amer. Math. Soc.* **74** (1979), 212–214.

9) Module structure of Weyl algebras, *J. London Math. Soc.* (2) **18** (1978), 429–442.

10) K-theory of Noetherian group rings, *in Ring theory (Proc. Conf., Univ. Waterloo, Waterloo, 1978)*, pp. 302–322, Lecture Notes in Math., **Vol. 734**, Springer, Berlin, 1979.

11) (with Brown, K. A. and Lenagan, T. H.) Weak ideal invariance and localisation *J. London Math. Soc.* **21** (1980), 53–61.

12) (with Brown, K. A. and Lenagan, T. H.) K-theory and stable structure of some Noetherian group rings, *Proc. London Math. Soc.* **42** (1981), 193–230.

13) On the regular elements of Noetherian rings, *in Ring theory* (Proc. Antwerp Conf., 1978), pp. 257–277, Lecture Notes in Pure and Appl. Math., **Vol. 51**, Dekker, New York, 1979.

14) Projective modules over polynomial extensions of division rings, *Inventiones Math.* **59** (1980), 105-117.

15) Bounded number of generations of right ideals in polynomial rings, *Comm. Algebra* **8** (1980), 1513–1518.

16) On the stable range of right Noetherian rings, *Bull. London Math. Soc.* **13** (1981), 39–41.

17) (with Cortzen, B. and Small, L. W.) Decomposing overrings, *Proc. Amer. Math. Soc.* **82** (1981), 28–30.

18) (with Small, L. W.) Localisation and completions of Noetherian PI algebras, *J. Algebra* **70** (1981), no. 1, 156–161.

19) Generating modules efficiently: algebraic K-theory for noncommutative Noetherian rings, *J. Algebra* **69** (1981), no. 2, 312–346; Corrig., *J. Algebra* **82** (1983), no. 1, 294–296.

20) Cancellation for nonprojective modules, *in Module theory* (Proc. Special Session, Amer. Math. Soc., Univ. Washington, Seattle, Wash., 1977), pp. 3–15, Lecture Notes in Math., **Vol.700**, Springer, Berlin, 1979.

21) (with Farkas, D. R.. Schofield, A. H. and Snider, R. L.) The isomorphic question for division rings of group rings, *Proc. Amer. Math. Soc.* **85** (1982), 327–330.

22) Generating modules efficiently over noncommutative rings *in Paul Dubreil and Marie-Paule Malliavin Algebra Seminar,* (Paris, 1981), pp. 72–88, Lecture Notes in Math., **Vol. 924**, Springer, Berlin-New York, 1982.

23) (with Wallach, N. R.) The restriction of admissible modules to parabolic subalgebras, *Trans. Amer. Math. Soc.* **272** (1982), 333–350.

24) Homological properties of the enveloping algebra $U(\mathrm{Sl}_2)$, *Math. Proc. Cambridge Philos. Soc.* **91** (1982), 29–37.

25) (with Small, L. W.) Regularity of zero divisors, *Proc. London Math. Soc.* **44** (1982), 405–419.

26) Noetherian full quotient rings, *Proc. London Math. Soc.* **44** (1982), 385–404.

27) Rings with a bounded number of generators for right ideals, *Quart. J. Math. Oxford Ser.* **34** (1983), 107–114.

28) (with Resco, R. and Small, L. W.) Krull and global dimensions of semiprime Noetherian PI-rings, *Trans. Amer. Math. Soc.* **274** (1982), 285–295.

29) Dimensions of division rings, *Israel J. Math.* **45** (1983), 33–40.

30) (with Warfield, R. B., Jr.) Hereditary orders with infinitely many idempotent ideals, *J. Pure Appl. Algebra* **31** (1984), 217–225.

31) (with Joseph, A.) Modules of $\mathfrak{k}$-finite vectors over semisimple Lie algebras, *Proc. London Math. Soc.* **49** (1984), 361–384.

32) On the ideals of a Noetherian ring, *Trans. Amer. Math. Soc.* **289** (1985), 381–392.

33) (with Small, L. W. and Warfield, R. B., Jr.) Affine algebras of Gelfand-Kirillov dimension one are PI, *Math. Proc. Cambridge Philos. Soc.* **97** (1985), 407–414.

34) The Weyl algebra and finite-dimensional filtering, *Stochastics* **14** (1984), 29–31.

35) Nonholonomic modules over Weyl algebras and enveloping algebras, *Inventiones Math.* **79** (1985), 619–638.

36) Stably free, projective right ideals, *Compositio Math.* **54** (1985), 63–78.

37) (with Warfield, R. B., Jr.) Constructions of hereditary Noetherian rings and simple rings, *Proc. London Math. Soc.* **51** (1985), 1–20.

38) (with Small, L. W.) Homological properties of generic matrix rings, *Israel J. Math.* **51** (1985), 27–32.

39) Modules over prime Krull rings, *J. Algebra* **95** (1985), 332–342.

40) (with Resco, R. and Warfield, R. B., Jr.) Fully bounded G-rings, *Pacific J. Math.* **124** (1986), 403–415.

41) Endomorphisms of right ideals of the Weyl algebra, *Trans. Amer. Math. Soc.* **299** (1987), 623–639.

42) The Goldie rank of a module, *in Noetherian rings and their applications* (Oberwolfach, 1983), 1–20, Math. Surveys Monographs, **Vol. 24**, Amer. Math. Soc., Providence, RI, 1987.

43) Global dimension of semiprime Noetherian rings, *in Séminaire d'algèbre Paul Dubreil et Marie-Paule Malliavin* (Paris, 1986), 247–260, Lecture Notes in Math., **Vol. 1296**, Springer, Berlin-New York, 1987.

44) (with Smith, S. P.) Differential operators on an affine curve, *Proc. London Math. Soc.* **56** (1988), 229–259.

45) (with Chamarie, M.) When rings of differential operators are maximal orders, *Math. Proc. Cambridge Philos. Soc.* **102** (1987), 399–410.

46) (with Dean, C.) A nonembeddable Noetherian ring, *J. Algebra* **115** (1988), 175–181.

47) (with Levasseur, T. and Smith, S. P.) The minimal nilpotent orbit, the Joseph ideal, and differential operators, *J. Algebra* **116** (1988), 480–501.

48) (with Hodges, T. J.) Noetherian rings with big indecomposable projective modules, *Bull. London Math. Soc.* **21** (1989), 249–254.

49) (with McConnell, J. C.) Gelfand-Kirillov dimension and associated graded modules, *J. Algebra* **125** (1989), 197–214.

50) (with Levasseur, T.) Rings of differential operators on classical rings of invariants, *Mem. Amer. Math. Soc.* **81** (1989), no. 412, vi+117 pp.

51) Yet more indecomposable projectives over PI rings, *in Ring theory 1989* (Ramat Gan and Jerusalem, 1988/1989), 48–52, Israel Math. Conf. Proc., **Vol.1**, Weizmann, Jerusalem, 1989.

52) A nil implies nilpotent theorem for left ideals, *J. Algebra* **133** (1990), 545–549.

53) Absolute stable rank and quadratic forms over noncommutative rings, *K-Theory* **4** (1990), 121–130.

54) (with Holland, M. P.) Differential operators on rational projective curves, *J. Algebra* **147** (1992), 176–244.

55) (with Goodearl, K. R.) Warfield in ring theory, *in Abelian groups and noncommutative rings*, 11–15, Contemp. Math., **Vol. 130**, Amer. Math. Soc., Providence, RI, 1992.

56) (with Smith, S. P.) Regularity of the four-dimensional Sklyanin algebra, *Compositio Math.* **83** (1992), 259–289.

57) (with Levasseur, T.) The quantum coordinate ring of the special linear group, *J. Pure Appl. Algebra* **86** (1993), 181–186.

58) Regularity of algebras related to the Sklyanin algebra, *Trans. Amer. Math. Soc.* **341** (1994), 895–916.

59) (with Levy, L. S. and Robson, J. C.) Hidden matrices, *Proc. London Math. Soc. (3)* **69** (1994), , 277–308.

60) (with Levasseur, T.) Invariant differential operators and an homomorphism of Harish-Chandra, *J. Amer. Math. Soc.* **8** (1995), 365–372.

61) (with Zhang, J. J.) Examples in non-commutative projective geometry, *Math. Proc. Cambridge Philos. Soc.* **116** (1994), 415–433.

62) (with Zhang, J. J.) Homological properties of (graded) Noetherian PI rings, *J. Algebra* **168**

(1994), 988–1026.

63) Auslander-regular algebras and maximal orders, *J. London Math. Soc. (2)* **50** (1994), 276–292.

64) (with Artin, M.) Noncommutative graded domains with quadratic growth, *Inventiones Math.* **122** (1995), 231–276.

65) (with Levasseur, T.) The kernel of an homomorphism of Harish-Chandra, *Ann. Sci. Ecole Norm. Sup. (4)* **29** (1996), 385–397.

66) (with Levasseur, T.) Differential operators commuting with invariant functions, *Comment. Math. Helv.* **72** (1997), 426–433.

67) (with Levasseur, T.) Semi-simplicity of invariant holonomic systems on a reductive Lie algebra, *Amer. J. Math.* **119** (1997), 1095–1117.

68) (with Levasseur, T.) Invariant differential operators on the tangent space of some symmetric spaces, *Annales de l'Institut Fourier (Grenoble)* **49** (1999), 1711–1741.

69) (with Levasseur, T.) Differential operators on some nilpotent orbits, *Represent. Theory* **3** (1999), 457–473.

70) (with Artin, M.) Semiprime graded algebras of dimension two, *J. Algebra* **227** (2000), 68–123.

71) (with Goodearl, K. R.) The graded version of Goldie's theorem, *Contemp. Math.* **259** (2000), 237-240.

72) (with Van den Bergh, M.) Noncommutative projective curves and surfaces, *Bull. Amer. Math. Soc.* **38** (2001), 171-216.

73) Noncommutative projective geometry, *Proceedings of the International Congress of Mathematicians*, Vol. II (Beijing, 2002), 93–103, Higher Ed. Press, Beijing, 2002.

74) (with Zhang, J. J.) Algebras without noetherian filtrations, *Proc. Amer. Math. Soc.* **131** (2003), 1329–1338.

75) (with Goodearl, K. R.) Simplicity of noncommutative Dedekind domains, *Proc. Amer. Math. Soc.* **133** (2005), 681-686.

76) (with Keeler D. and Rogalski D.) Naïve noncommutative blowing up, *Duke Math. J.* **126** (2005), 491-546.

77) (with Gordon I.) Cherednik algebras and Hilbert schemes of points, *Advances in Math.* **198** (2005), 222-274.

78) (with Gordon I.) Cherednik algebras and Hilbert schemes of points II: representations and sheaves, *Duke Math. J.* **132** (2006), 73-135.

79) (with Levasseur T.) Differential operators and cohomology groups on the basic affine space, pp. 377-405, in *Studies in Lie Theory*, Eds. J. Bernstein et al, Progress in Math., Birkhäuser, Boston, 2006.

80) (with Nevins T.) Sklyanin algebras and Hilbert schemes of points, *Advances in Math.* **210** No.1 (2007) 405–478.

81) (with Rogalski, D.) Naïve noncommutative blowups at zero dimensional schemes, *J. Algebra*, **318** (2007), 794–833.

82) (with Van den Bergh M.) Noncommutative resolutions and rational singularities, *Michigan Math. J.*, **57** (2008), 659-674.

83) (with Rogalski D.) A class of noncommutative projective surfaces, *Proc. London Math. Soc.*, **99** (2009), 100-144.

84) (with Ginzburg V. and Gordon I.) Differential operators and Cherednik algebras, *Selecta Math.,* **14** (2009), 629–666.

85) Generating regular elements, *C. R. Acad. Sci. Paris* **351** (2013), 429-432.

86) (with Rogalski D. and Sierra S. J.) Algebras in which every subalgebra is noetherian, *Proc. Amer. Math. Soc.* **142** (2014), 2983-2990.

87) (with Gordon I.) The Auslander property for Z-algebras, *J. Algebra* **399** (2014), 102-130.

88) (with Rogalski D. and Sierra S. J.) Classifying orders in the Sklyanin algebra, *Algebra and Number Theory* **9** (2015), 2056-2119.

89) (with Rogalski D. and Sierra S. J.) Noncommutative blowups of elliptic algebras, *Algebras and Rep. Theory* **18** (2015), 491-529.

90) (with Levasseur T.) Higher symmetries of powers of the Laplacian and rings of differential operators, *Compositio Math.,* **153** (2017), 678-716.

91) (with Rogalski D. and Sierra S. J.) Ring-theoretic blowing down; I, *J. Noncommutative Geometry*, **11** (2017), 1465-1520.

92) (with Rogalski D. and Sierra S. J.) Noncommutative minimal surfaces, preprint (2018), see arxiv:1807.09889.

Books and Conference Proceedings

1) (edited with Fuchs L., Goodearl K. R. and Vinsonhaler C.) *Abelian groups and noncommutative rings. A collection of papers in memory of Robert B. Warfield, Jr.* Contemporary Mathematics, 130. American Mathematical Society, Providence, RI, 1992. x+394 pp.

2) (edited with Ara P., Brown K., ; Lenagan T., Letzter E. and Zhang J.), *New trends in noncommutative algebra*, Contemp. Math., **562**, Amer. Math. Soc., Providence, RI, 2012.

3) (edited with Eisenbud D., Iyengar S. B., Singh A. K. and Van den Bergh v) *Commutative Algebra and Noncommutative Geometry; Vol. 1. Expository Articles*, (MSRI Publications), CUP, Cambridge, England, 2015.

4) (edited with Eisenbud D., Iyengar S. B., Singh A. K. and Van den Bergh) *Commutative Algebra and Noncommutative Geometry; Vol. 2. Research Articles,* (MSRI Publications), CUP, Cambridge, England, 2015.

5) (with Bellamy G., Rogalski D., Schedler T. and Wemyss M.) *Noncommutative Algebraic Geometry,* (MSRI Publications), CUP, Cambridge, England, 2016.