

Curriculum Vitae

W. E. LONGSTAFF

Address :

Queensland
Australia

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Year of birth : 1945

Country of birth : United Kingdom

Emigrated to Australia: 1958

Nationality : Australian

Previous positions :

2009-2010 Professor of Mathematics, University of Western Australia

1991-2008 Associate Professor, University of Western Australia

1984-1990 Senior Lecturer, University of Western Australia

1976-1983 Lecturer in Mathematics, University of Western Australia

1973-1974 (1 year) Lecturer in Mathematics, Flinders University

1973-1975 (2 years) Research Fellow in Mathematics, Flinders University

1968-1972 Teaching Assistant, University of Toronto

1968 Tutor in Mathematics, University of Queensland

1964-1967 Part-time Tutor in Mathematics, University of Queensland

Visiting Positions :

2009 (4 months) Visiting Professor, University of Toronto

2004 (1 month) Visiting Professor, University of Crete, Greece

2004 (1 month) Visiting Professor, University of Toronto

2004 (2 months) Visiting Professor, Victoria University, British Columbia

2000 (1 month) Visiting Professor, University of California, Berkeley

2000 (3 months) Visiting Professor, University of Toronto

2000 (2 months) Visiting Professor, University of Crete, Greece

1996 (4 months) Visiting Professor, University of Toronto

1996 (1 month) Visiting Professor, University of Crete, Greece

1992 (1 month) Visiting Professor, University of Toronto

1992 (3 months) Visiting Professor, Dalhousie University, Nova Scotia

1992 (1 month) Visiting Professor, University of Crete, Greece

1988-1989 (1 month) Visiting Fellow, Centre for Mathematical Analysis,
Australian National University, Canberra

1985 (2 months) Guest of the Department of Mathematics, University of Hawaii

1985 (2 months) Visiting Scholar, University of California, Berkeley

1985 (5 months) Visiting Professor, University of Toronto

1985 (2 months) Visiting Professor, University of Crete, Greece

1978 (4 months) Postdoctoral Fellow in Mathematics, Edinburgh University

TERTIARY EDUCATION

Degrees :

Ph.D. University of Toronto 1972

M.Sc. University of Toronto 1969

B.Sc. (Honours) University of Queensland 1968

B.Sc. University of Queensland 1967

Scholarships, Awards, Distinctions :

1973-1975 Flinders University Research Fellowship, Adelaide, South Australia

1968-1972 Canadian Commonwealth Scholarship to the University of Toronto

1968 University of Queensland Medal for Special Distinction

1968 First Class Honours in Mathematics

1967 University of Queensland Honours Scholarship

1964-1966 Commonwealth Undergraduate Scholarship

1963 Dux, Camp Hill State High School, Brisbane, Queensland

1961 Top Boy in Queensland, Junior Public High School Examination,
Queensland

1959 Dux, Capalaba State Primary School, Brisbane, Queensland

1957 Dux, Parkhouse-Abbey Primary School, Arbroath, Scotland

Teaching Awards:

Excellence in Teaching Award, Best Coursework Unit 2008 Nomination, Excellence in Teaching Award, Individual Teaching 1997 Commendation

RESEARCH INTERESTS

Operator Theory, Functional Analysis, Approximation Theory, Banach Algebras, Lattice Theory, Linear Algebra, Combinatorics

Ph.D. Students:

1995 Oreste Panaia, 'Quasi-spatiality of isomorphisms for certain classes of operator algebras'

1988 Helen K. Middleton, 'On the reflexivity and transitivity of non-distributive subspace lattices'

Honours Students:

2009 Christopher Bradly, 'A new two-component model of spherical galaxies with dark matter halos' (joint)

1999 Timothy Hillman, 'Simultaneous Triangularizability'

1995 Robert Yuncken, 'Atomic Boolean subspace lattices on Banach spaces'

1993 Michael Camarri, 'Tridiagonalisation and triangularisation of linear operators'

1991 Iain Clark, 'Spectral theory of one-dimensional Schrodinger operators and their application to few electron atoms' (joint)

1991 Ramzan Nazim Khan, 'Some aspects of bases in Banach spaces'

1988 Andrew Kepert, 'Triangular operator algebras and nest algebras'

1986 Peter Fan, 'Strictly cyclic operator algebras'

1984 Stuart Henderson, 'Reflexive subspace lattices and complete distributivity'

1982 Ian Doust, 'The invariant subspace problem'

CONFERENCE PAPERS

Asian Mathematics Conference, National University of Singapore, July 2005 'On the lengths of pairs of complex matrices'

International Workshop on Operator Algebras and Operator Theory, Shanxi Teacher's University, Linfen, Shanxi, China, October 2001 'Transitive families of subspaces'

International Workshop on Operator Theory and its Applications (IWOTA 2000), Faro, Portugal, September 2000 'Single elements of operator algebras'

Aegean Conference on Operator Algebras and Applications, Samos, Greece, August 1996 'J-lattices of subspaces'

Fourth Annual Meeting, International Workshop in Analysis and its Applications, Dubrovnik-Kupari, Yugoslavia, June 1990 'Finite rank operators leaving subspace lattices invariant'
 Second International Conference on Operator Algebra and their connections with Topology and Ergodic Theory (OATE 2), Romanian National Institute for Scientific and Technical Creation (INCREST), Craiova, Romania, September 1989 'Atomic Boolean subspace lattices'
 Conference on Banach Algebras and Automatic Continuity, Centre for Mathematical Analysis, Australian National University, Canberra, January 1989 'Some problems concerning operator algebras'
 Workshop/Miniconference on Functional Analysis/Optimization, Centre for Mathematical Analysis, Australian National University, Canberra, August 1988 'Non-reflexive realizations of non-distributive subspace lattices'
 Annual Canadian Operator Algebra Conference, University of Saskatchewan, May 1985 'Range cyclic operator algebras'

OTHER PROFESSIONAL ACTIVITIES

Seminars/Colloquia :

2009 University of Toronto, University of Athens, Greece
 2008 University of Western Australia
 2004 Victoria University, British Columbia, University of Crete, Greece,
 2000 University of Crete, Greece, University of Toronto, University of New Hampshire, University of California Berkeley, University of Hawaii
 1996-2000 University of Western Australia
 1996 University of Waterloo, University of Toronto, Dalhousie University, Nova Scotia, University of Hawaii
 1993-1996 University of Western Australia
 1992 University of Crete, Greece, University of Athens, Greece, Dalhousie University, Nova Scotia, University of Toronto
 1989-1992 University of Western Australia
 1989 University of Athens, Greece, University of Crete, Greece
 1986-1989 University of Western Australia
 1985 University of Crete, Greece, Greek Mathematical Society, Athens, University of Delft, Netherlands, University of Toronto, Dalhousie University, Canada, University of California Berkeley, University of Santa Clara, California, University of Hawaii
 1980-1984 University of Western Australia, Western Australia Mathematics Enrichment Course
 1979 University of Toronto
 1976-1978 University of Western Australia, Edinburgh University, King's College, London
 1973-1975 Flinders University, South Australia
 1972 University of Queensland

Refereeing :

Journal of the Australian Mathematical Society, Bulletin of the Australian Mathematical Society, Bulletin of the Canadian Mathematical Society, Journal of the London Mathematical Society, Linear and Multilinear Algebra, Portugese Mathematics Journal, Indian Journal of Pure and Applied Mathematics, Indiana University Mathematics Journal, Journal of Operator Theory, International Journal of Mathematics and Mathematical Sci-

ences , Linear Algebra & Applications, Studia Mathematica, Proceedings of the American Mathematical Society, Kyungpook Journal of Mathematics

Assessing:

Australian Research Grants Committee, Australian Research Council

Professional Societies:

American Mathematical Society, member 1973 -

Australian Mathematical Society, member 1975 -1998

Greek Mathematical Society, member 1986-2010

Mathematical Association of America, member 2007- 2008

Research Interests:

Operator Theory, Functional Analysis, Approximation Theory, Banach Algebras, Linear Algebra, Lattice Theory, Combinatorics

PUBLICATIONS

Theses :

1. 'Some results on nest algebras', Ph.D. Thesis, University of Toronto, 1972

Books :

2. 'Atomic Boolean subspace lattices and applications to the theory of bases' (with S. Argyros and M.S.Lambrou), Memoirs of the American Mathematical Society, (445) 91, 1991 (AustMS Journal Ranking A*)

Research articles :

1973

3. 'The convergence of triangular integrals of operators on Hilbert space', (with J.A. Erdos) Indiana University Math J., 22 (10), 929-938, 1973.MR 49 #1178 (AustMS Journal Ranking A*)

1974

4. 'Generators of nest algebras', Canadian J. Math., 26 (3), 565-575, 1974.MR 49 #9646 (AustMS Journal Ranking A)

5. 'Strongly reflexive lattices', Bull. American Math. Soc.(Research Announcement), 80 (5), 875-878, 1974. MR 50 #10859 (AustMS Journal Ranking A*)

1975

6. 'Generators of reflexive algebras', J. Australian Math. Soc.Series A, 20 (2), 159-164, 1975.MR 51 #11128 (AustMS Journal Ranking B)

7. 'Strongly reflexive lattices', J. London Math. Soc., 11 (2),491-498, 1975.MR 52 #15036 (AustMS Journal Ranking A)

- 1976 8. 'Operators of rank one in reflexive algebras', Canadian J. Math., 28 (1), 19-23, 1976.MR 53 #1294 (AustMS Journal Ranking A)

9. 'A combinatorial approach to solving certain linear systems', Gaz. Australian Math. Soc., 3 (1), 11-12, 1976 (AustMS Journal Ranking C)

10. 'A sufficient condition for hyperinvariance', Proc. American Math. Soc., 61 (1), 26-28,1976.MR 55 #3825 (AustMS Journal Ranking A)

11. 'A lattice-theoretic description of the lattice of hyperinvariant subspaces of a linear transformation', Canadian J. Math., 28 (5), 1062-1066, 1976.MR 54#13596 (AustMS Journal Ranking A)

- 1977 12. 'Reflexive subspace lattices in finite-dimensional Hilbert spaces'(with K.J. Harrison) , Indiana University Math. J., 26,1019-1025, 1977.MR 57 #10454 (AustMS Journal Ranking A*)

13. 'Combinatorial solution of certain systems of linear equations involving $(0,1)$ matrices', J. Australian Math. Soc. Series A, 23, 266-274, 1977.MR 57 #5784 (AustMS Journal Ranking B)
14. 'The hyperinvariant subspace lattice of a linear transformation', (with P.A.Fillmore and D.A. Herrero) Linear Algebra & Applic., 17, 125-132, 1977.MR 57 #10453 (AustMS Journal Ranking A)
- 1979 15. 'A note on transforms of subspaces of Hilbert space', Proc.American Math. Soc., 76, 268-270, 1979.MR 80i:47054 (AustMS Journal Ranking A)
16. 'On the operation ALG LAT in finite dimensions', Linear Algebra & Applic., 27, 27-29, 1979.MR 80g:47045 (AustMS Journal Ranking A)
17. 'On two questions of Halmos concerning subspace lattices'(with P. Rosenthal), Proc. American Math. Soc., 75, 85-86, 1979.MR 81a:47009 (AustMS Journal Ranking A)
- 1980
18. 'An invariant subspace lattice of order type $w + w + 1$ ' (with K.J. Harrison), Proc.American Math. Soc., 79 (1), 45-49,1980.MR 81g:47002 (AustMS Journal Ranking A)
19. 'Abelian algebras and reflexive lattices', (with M.S. Lambrou) Bull. London Math.Soc., 12, 165-168, 1980.MR 82b:47057 (AustMS Journal Ranking A)
- 1981
20. 'Subalgebras of incidence algebras determined by equivalence relations'(with K.J.Harrison), J. Combinatorial Theory Series A, 31 (1), 94-95, 1981.MR 84e:05004 (AustMS Journal Ranking A*)
- 1982
21. 'Commuting families of operators of rank one', (with J.A. Erdos) Proc. London Math.Soc., 44 (1), 161-177, 1982.MR 83e:47033 (AustMS Journal Ranking A*)
22. 'Subspace maps of operators on Hilbert space', Proc. American Math. Soc., 84 (2), 195-201, 1982.MR 82k:47006 (AustMS Journal Ranking A)
23. 'Some tractable non-self-adjoint operator algebras', (with K.J.Harrison and P. Rosenthal) J. London Math. Soc., 26 (2), 325-330, 1982.MR 83m:47038 (AustMS Journal Ranking A)
- 1983
24. 'Small transitive lattices', (with D.W. Hadwin and P. Rosenthal) Proc. American Math.Soc., 87 (1), 121-124, 1983. MR 85e:47002 (AustMS Journal Ranking A)
25. 'Non-reflexive double triangles', J. Australian Math. Soc. Series A, 35, 349-356,1983. MR 85c:47006 (AustMS Journal Ranking B)
26. 'Remark on Lomonosov's lemma', Proc. American Math. Soc., 88 (2), 311-312,1983. MR 84f:47002 (AustMS Journal Ranking A)
27. 'A note on rank-one operators in reflexive algebras', (with C. Laurie) Proc. American Math. Soc., 89 (2), 293-297, 1983.MR 85b:47052 (AustMS Journal Ranking A)
- 1984
28. 'Picturing the lattice of invariant subspaces of a nilpotent complex matrix', Linear Algebra & Applic., 56, 161-168,1984. MR 85d:47006 (AustMS Journal Ranking A)
29. 'On isomorphisms of lattices of closed subspaces', (with P.A.Fillmore) Canadian Math. J., 36 (5), 820-829, 1984. MR 86c:46012 (AustMS Journal Ranking A)
- 1986
30. 'Automorphic images of commutative subspace lattices', (with K.J.Harrison) Trans.American Math. Soc., 296 (1), 217-228, 1986. MR 87g:46040 (AustMS Journal Ranking A*)
31. 'A lattice theoretic equivalent of the invariant subspace problem', Proc. American Math. Soc., 98 (4), 605-606, 1986. MR 87m:47018 (AustMS Journal Ranking A)

32. 'On operator algebras and operator ranges', (with P. Rosenthal) *Integral Eqns. and Operator Theory*, 9, 820-830, 1986. MR 88a:47043 (AustMS Journal Ranking A)
33. 'Cyclic vectors for operator algebras', *Bull. Greek Math. Soc.*, 27, 73-83, 1986. MR89d:47102 1988
34. 'On tridiagonalization of matrices', *Linear Alg & Applic.*, 109, 153-163, 1988 (AustMS Journal Ranking A)
35. 'On lattices whose every realization on Hilbert space is reflexive', *J. London Math. Soc.*, (2) 37, 499-508, 1988. MR 90a:47014 (AustMS Journal Ranking A)
36. 'Non-reflexive realization of non-distributive subspace lattices', *CMA Vol. 20, Proc. Miniconfer. on Functional Analysis/Optimization*, Canberra, Aug. 1988, 128-140 1989
37. 'Some problems concerning operator algebras', *CMA Vol. 21, Proc. Confer. on Automatic Continuity and Banach Algebras*, Canberra, Jan. 1989, 260-272
38. 'Remarks on semi-simple reflexive algebras', *CMA Vol. 21, Proc. Confer. on Automatic Continuity and Banach Algebras*, Canberra, Jan, 1989, 273-287
39. 'On the equation $AB = BX$ in collection of matrices', (with H. Radjavi) *Linear & Multilinear Alg.*, 25, 173-184, 1989 (AustMS Journal Ranking B) 1991
40. 'Unit ball density and the operator equation $AX = YB$ ' (with M.S. Lambrou), *J. Operator Theory*, 25, 383-397, 1991 (AustMS Journal Ranking A)
41. 'Counterexamples concerning bitriangular operators' (with M.S. Lambrou), *Proc. American Math. Soc.*, (3) 112, 783-787, 1991 (AustMS Journal Ranking A)
42. 'A note on the semi-simplicity of reflexive operator algebras', *Proc. International Workshop on Analysis and its Applications*, Dubrovnik-Kupari, Yugoslavia 1990, 45-50, 1991 1992
43. 'Finite rank operators leaving double triangles invariant' (with M.S. Lambrou), *J. London Math. Soc.*, (2) 45, 153-168, 1992 (AustMS Journal Ranking A)
44. 'Atomic Boolean subspace lattices', *Proceedings International Conference on Operator Algebras and their connections with Topology and Ergodic Theory (OATE 2)*, Craiova, Romania, 1989, Pitman Research Notes 271, Longman, 1992, 140-156
45. 'Spectral conditions and reducibility of operator semigroups' (with M.S. Lambrou and H. Radjavi), *Indiana U. Math. J.*, (2) 41, 449-464, 1992 (AustMS Journal Ranking A*) 1993
46. 'The decomposability of operators relative to two subspaces' (with A. Katavolos and M.S. Lambrou), *Studia Math.*, (1) 105, 25-36, 1993 (AustMS Journal Ranking A) 1994
47. 'Some counterexamples concerning strong M-bases of Banach spaces' (with M.S. Lambrou), *J. Approximation Th.*, (2) 79, 243-259, 1994 (AustMS Journal Ranking A)
48. 'Spatiality of isomorphisms between certain reflexive algebras' (with M. Lambrou), *Proc. American Math. Soc.*, (4) 122, 1065-1073, 1994 (AustMS Journal Ranking A) 1995
49. 'On permutability and submultiplicativity of spectral radius' (with H. Radjavi), *Canadian Math. J.*, (5) 47, 1007-1022, 1995 (AustMS Journal Ranking A) 1997
50. 'On the ranks of single elements of reflexive operator algebras' (with Oreste Panaia), *Proc. Amer. Math. Soc.*, (10) 125, 2875-2882, 1997 (AustMS Journal Ranking A)
51. 'Non-reflexive pentagon subspace lattices' (with M. S. Lambrou), *Studia Math.*, (2) 125, 187-199, 1997 (AustMS Journal Ranking A)

1998

52. 'Abstract reflexive sublattices and completely distributive collapsibility'(with J. B. Nation and O. Panaia), Bull. Aust. Math. Soc., 58, 245-260, 1998 (AustMS Journal Ranking B)

53. 'On complementary subspaces of Hilbert space' (with Oreste Panaia), (10) 126, 3019-3026, 1998 (AustMS Journal Ranking A)

2000

54. 'J-subspace lattices and subspace M-bases'(with O. Panaia), Studia Math., (3) 139, 197-212, 2000 (AustMS Journal Ranking A)

55. 'Generators of matrix incidence algebras'(with P. Rosenthal), Australasian J. Comb., 22, 117-121, 2000 (AustMS Journal Ranking B)

56. 'Single elements of matrix incidence algebras'(with O. Panaia), Lin. Alg. & Applic., 318, 117-126, 2000 (AustMS Journal Ranking A)

57. 'Single elements of finite CSL algebras'(with O. Panaia), Proc. Amer. Math. Soc., (4) 129, 1021-1029, 2000 (AustMS Journal Ranking A)

2001

58. 'Pentagon subspace lattices on Banach spaces'(with A. Katavolos and M. S. Lambrou), J. Operator. Th., 46, 355-380, 2001 (AustMS Journal Ranking A)

2002

59. 'Intersections of nest algebras in finite dimensions'(with P. A. Fillmore, G. N. MacDonald, H. Radjavi and Y. Zhong), Lin. Alg. & Applic., 350, 185-197, 2002 (AustMS Journal Ranking A)

60. 'Small transitive families of subspaces in finite dimensions' (with M. S. Lambrou), Lin. Alg. & Applic., 357, 229-245, 2002 (AustMS Journal Ranking A)

2003

61. 'Small transitive families of dense operator ranges', Int. Eqns. & Operator Th., (3) 45, 343-350, 2003 (AustMS Journal Ranking A)

62. 'Single elements of operator algebras', Singular Integral Operators, Factorization and Applications Proceedings of the IWOTA Conference, Portugal, 2000, Bttcher, A.; Ferreira dos Santos, A.; Kaashoek, M. A.; Brites Lebre, A.; Speck, F.-O. (Eds.), 2003

63. 'Small transitive families of subspaces, Proc. Int. Wkshp. Operator Th., Linfen, China, Oct. 2001, Acta Math. Sinica, English Series, (3) 19, 567-576, 2003 (AustMS Journal Ranking B)

2004

64. 'Burnside's theorem: irreducible pairs of transformations', Lin. Alg. & Appl, 382, 247-269, 2004 (AustMS Journal Ranking A)

2006

65. 'On the lengths of complex matrices of size at most 5 (with A. Niemeyer and O. Panaia), Bull. Aust. Math. Soc., 73, 461-42, 2006 (AustMS Journal Ranking B)

2009

66. 'On the lengths of pairs of complex matrices of size 6 (with M. S. Lambrou), Bull. Aust. Math. Soc., 80, 177-201, 2009 (AustMS Journal Ranking B)

2011

67. 'On the lengths of irreducible pair of complex matrices (with P. Rosenthal), Proc. Amer. Math. Soc., 139, 3769-3777, 2011 (AustMS Journal Ranking A)

2014

68. 'Reflexive index of a family of subspaces', Bull. Aust. Math. Soc.(to appear; published online April 2, 2014)(AustMS Journal Ranking B)

Note: ‘AustMS Journal Ranking ’ refers to the Australian Mathematical Society Journal Ranking Recommendations for the ERA, August-November, 2009. Of the 61 ranked journal articles listed above, 8 are ranked A*, 41 are ranked A, 10 are ranked B, 1 is ranked C and 1 is not ranked.

In preparation:

69. ‘Reflexivity of prime D-medial subspace lattices in finite dimensions (with H. K. Middleton)

Citations: Currently, my work has been cited at least 265 times by at least 111 authors (see <http://www.ams.org/mathscinet/mrcit/individual.html?mrauthid=189153>).

Article number 7 above is my most cited work with 54 citations.

W. E. Longstaff

May 1st, 2014