

CURRICULUM VITAE
April 2009

A. BIOGRAPHICAL INFORMATION

1. Personal

| | | |
|--------------------|----------------------|-----------------------|
| Peter M. Rosenthal | 367 Palmerston Blvd. | Dept of Mathematics |
| June 1, 1941 | Toronto, Ontario | University of Toronto |
| U.S., Canadian | M6G 2N5 | Toronto, Ontario |
| | 416-924-2257 | 416-978-3093 |

2. Degrees

| | | |
|-------|------|--|
| Ph.D. | 1967 | University of Michigan |
| M.A. | 1963 | University of Michigan |
| B.S. | 1962 | Queen's College of City University of New York |

Thesis Title: "On Lattices of Invariant Subspaces"

Thesis Supervisor: Professor P.R. Halmos

3. Employment

| | |
|-----------|---|
| 1976- | Professor, Mathematics, University of Toronto |
| 1971-1976 | Associate Professor, Mathematics, University of Toronto |
| 1967-1971 | Assistant Professor, Mathematics, University of Toronto |
| 1967 | Appointed to Graduate School |
| 1971 | Tenure Awarded |

4. Honours

| | |
|-----------|--|
| 1962 | Woodrow Wilson Graduate Fellowship (declined) |
| 1962-1966 | National Science Foundation Graduate Fellowship |
| 1973-1974 | Canada Council Leave Fellowship |
| 1974 | Science Research Council Senior Fellowship (Great Britain) |
| 1986-1987 | Winner of the Students Administrative Council and Assoc. of Part-time Students Teaching Award in the Sciences. |
| 1997 | BADC Award for Advocacy on behalf on Canadians of African descent |
| 2000 | Jus Memorial Human Rights Prize, U of T, Awards of Excellence |

5. Professional Affiliations

| | |
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| Member, | Canadian Mathematical Society |
| Member, | American Mathematical Society |

B. ACADEMIC HISTORY

6a. Research Endeavours

"Operators on Hilbert and Banach Spaces"

b. Research Awards

| | | |
|-----------|-------|---------------------|
| 2007-2012 | NSERC | \$12,000 per year |
| 2001-2007 | NSERC | \$16,000 per year |
| 1998-2001 | NSERC | \$13,200 per year |
| 1997-1998 | NSERC | \$12,000 per year |
| 1993-1997 | NSERC | \$20,000 per year |
| 1990-1993 | NSERC | \$20,000 per year |
| 1987-1990 | NSERC | \$23,842 per year |
| 1984-1987 | NSERC | \$19,900 per year |
| 1981-1984 | NSERC | \$17,000 per year |
| 1978-1981 | NSERC | \$12,000 per year |
| 1975-1978 | NRC | \$10,000 per year |
| 1974-1980 | NSF | \$ 5,000 per summer |

C. SCHOLARLY AND PROFESSIONAL WORK

7a. Refereed Publications

1. with T. Crimmins, On the decomposition of invariant subspaces, *Bull. Amer. Math. Soc.* **73** (1967) 97–99.
2. A note on unicellular operators, *Proc. Amer. Math. Soc.* **19** (1968) 505–506.
3. Completely reducible operators, *Proc. Amer. Math. Soc.* **19** (1968) 826–830.
4. with R.G. Douglas, A necessary and sufficient condition that an operator be normal, *J. Math. Anal. and Appl.* **22** (1968) 10–11.
5. with H. Radjavi, Invariant subspaces and weakly closed algebras, *Bull. Amer. Math. Soc.* **74** (1968) 1013–1014.
6. with H. Radjavi, On invariant subspaces and reflexive algebras *Amer. J. Math.* XCI (1969) 683–692.
7. with H. Radjavi and H.C. Davis, On operator algebras and invariant subspaces, *Can. J. Math.* XXI (1969) 1178–1181.
8. with H. Radjavi and E. Nordgren, On density of transitive algebras, *Acta Sci. Math. (Szeged)* XXX (1969) 175–179.
9. with H. Radjavi, The set of irreducible operators is dense, *Proc. Amer. Math. Soc.* **21** (1969) p. 256.
10. Remarks on invariant subspace lattices, *Can. Math. Bull.* **12** (1969) 639–643.
11. Are almost commuting matrices near commuting matrices?, *Amer. Math. Monthly* **76** (1969) 925–926.
12. Examples of invariant subspace lattices, *Duke Math. J.* **37** (1970) 103–112.
13. Weakly closed maximal triangular algebras are hyperreducible, *Proc. Amer. Math. Soc.* **24** (1970) p. 220.
14. with H. Radjavi, Matrices for operators and generators of $B(H)$, *J. London Math. Soc. (2)* **2** (1970) 557–560.

15. A characterization of multiplication by the independent variable on L^p , *Studia Math. T. XXXVI* (1970) 217–221.
16. with D. Koehler, On Isometries of normed linear spaces, *Studia Math. T. XXXVI* (1970) 213–216.
17. Problems on invariant subspaces and operator algebras, Proc. of Tihany Colloquium on Hilbert space operators and operator algebras, Colloquia Mathematica Societatis Janos Bolyai 5, Tihany, Hungary, (1970) 1972, 479–487.
18. with H. Radjavi, On roots of normal operators, *J. Math. Anal. & Appl.* **34** (1971) 653–664.
19. with H. Radjavi, Hyperinvariant subspaces for spectral and n -normal operators, *Acta Sci. Math. (Szeged)* **32** (1971) 121–126.
20. with H. Radjavi, On reflexive algebras of operators, *Indiana University Math. J.* **20** (1971) 935–937.
21. with H. Radjavi, A sufficient condition that an operator algebra be self-adjoint, *Can. J. Math.* **XXIII** (1971) 588–597.
22. with K.J. Harrison and H. Radjavi, A transitive medial subspace lattice, *Proc. Amer. Math. Soc.* **28** (1971) 119–121.
23. with H. Radjavi, Graphs with isomorphic subgraphs, *J. London Math. Soc. (2)* **6** (1972) 70–72.
24. with A. Feintuch, Remarks on reductive operator algebras, *Israel J. Math.* **15** (1973) 130–136.
25. with E. Nordgren, Algebras containing unilateral shifts or finite-rank operators, *Duke Math. J.* **40** (1973) 419–424.
26. with H. Radjavi, Invariant subspaces for products of Hermitian operators, *Proc. Amer. Math. Soc.* **43** (1974) 483–484.
27. with H. Radjavi, On transitive and reductive operator algebras, *Math. Annalen* **209** (1974) 43–56.
28. with C. Davis, Solving linear operator equations, *Can. J. Math.* **XXVI** (1974) 1384–1389.
29. On commutants of reductive operator algebras, *Duke Math. J.* **41** (1974) 829–834.
30. Applications of Lomonosov’s lemma to non-self-adjoint operator algebras, *Proc. Royal Irish Acad.* **74** (1974) 271–281.
31. with E. Nordgren and H. Radjavi, On operators with reducing invariant subspaces, *Amer. J. Math.* **XCVII** (1975) 559–570.
32. On reductive algebras containing compact operators, *Proc. Amer. Math. Soc.* **47** (1975) 338–340.
33. with F.F. Bonsall, Certain Jordan operator algebras and double commutant theorems, *J. Funct. Anal.* **21** (1976) 155–186.
34. with E. Nordgren and H. Radjavi, A geometric equivalent of the invariant subspace problem, *Proc. Amer. Math. Soc.* **61** (1976) 66–68.

35. with E. Nordgren and H. Radjavi, Operator algebras leaving compact operator ranges invariant, *Mich. Math. J.* **23** (1976) 375–377.
36. Some recent results on invariant subspaces, *Can. Math. Bull.* **19** (1976) 303–313.
37. with E. Nordgren and H. Radjavi, On Arveson’s characterization of hyperreducible triangular algebras, *Indiana University Math. J.* **26** (1977) 179–182.
38. with E. Nordgren, M. Radjabalipour and H. Radjavi, Algebras intertwining compact operators, *Acta Sci. Math. (Szeged)* **39** (1977) 115–119.
39. with A.R. Sourour, On operator algebras containing cyclic Boolean algebras I, *Pac. J. Math.* **70** (1977) 243–252.
40. with A.R. Sourour, On operator algebras containing cyclic Boolean algebras II, *J. London Math. Soc. (2)* **16** (1977) 501–506.
41. with E. Nordgren, M. Radjabalipour and H. Radjavi, On invariant operator ranges, *Trans. Amer. Math. Soc.* **251** (1979) 389–398.
42. with C.K. Fong, E. Nordgren, M. Radjabalipour and H. Radjavi, Extensions of Lomonosov’s invariant subspace theorem, *Acta Sci. Math. (Szeged)* **41** (1979) 55–62.
43. with W. Longstaff, On two questions of Halmos concerning sub-space lattices, *Proc. Amer. Math. Soc.* **75** (1979) 85–86.
44. with D. Hadwin, E. Nordgren and H. Radjavi, Most similarity orbits are dense, *Proc. Amer. Math. Soc.* **76** (1979) 250–252.
45. with D. Hadwin, E. Nordgren and H. Radjavi, An operator not satisfying Lomonosov’s hypothesis, *Jour. of Funct. Anal.* **38** (1980) 410–415.
46. with I. Halperin, Burnside’s Theorem on algebras of matrices, *Amer. Math. Monthly* **87** (1980) p. 810.
47. with C. Laurie, E. Nordgren and H. Radjavi, On triangularization of algebras of operators, *J. r. u. angew. Math., Band* **327** (1981) 143–155.
48. On the equations $X = KXS$ and $AX = XK$, Proc. of Banach Centre Symposium on Spectral Theory, Warsaw, (1982) 389–391.
49. with H. Radjavi, The invariant subspace problem, *Math. Intelligencer* **4** (1982) 33–37.
50. with K. Harrison and W. Longstaff, Some tractable non-self-adjoint operator algebras, *J. Lond. Math. Soc. (2)* **26** (1982) 325–330.
51. with D. Hadwin and W. Longstaff, Small transitive lattices, *Proc. Amer. Math. Soc.* **87** (1983) 121–124.
52. with E. Nordgren and H. Radjavi, Triangularizing semigroups of compact operators, *Indiana Univ. Math. J.* **33** (1984) 271–275.
53. with E. Nordgren and F. Wintrobe, Composition operators and the invariant subspace problem, *Proc. Royal Sci. Canada VI* (1984) 279–283.
54. with M.-D. Choi, D. Hadwin, E. Nordgren and H. Radjavi, On positive linear maps preserving invertibility, *Journal Functional Analysis* **59** (1984) 462–469.

55. with I. Halperin and C. Kitai, On orbits of linear operators, *J. Lond. Math. Soc.* (2) **31** (1985) 561–565.
56. with H. Radjavi, On fixed points of semigroups of linear contractions, *Proc. Amer. Math. Soc.* **93** (1985) 640–642.
57. R.B. Honor (acronym for seven authors), Density and transitivity results on ℓ^1 and ℓ^∞ , *J. Lond. Math. Soc.* (2) **32** (1985) 521–527.
58. with D. Hadwin, E. Nordgren, H. Radjavi, Orbit reflexive operators, *J. Lond. Math. Soc.* (2) **34** (1986) 111–119.
59. with W. Longstaff, On operator algebras and operator ranges, *Integral Equations and Oper. Theory* **9** (1986) 820–830.
60. with D. Hadwin, E. Nordgren, M. Radjabalipour, H. Radjavi, A nil algebra of bounded operators on Hilbert space with semisimple norm closure, *Integral Equats. and Oper. Theory* **9** (1986) 734–743.
61. The remarkable theorem of Levy and Steinitz, *Amer. Math. Monthly* **94** (1987) 342–351.
62. with E. Nordgren and F. Wintrobe, Invertible composition operators on H^P , *J. Functional Analysis* **73** (1987) 324–344.
63. with C.K. Fong and H. Radjavi, Norms for matrices and operators, *J. Operator Theory* **18** (1987) 99–113.
64. with E. Nordgren and H. Radjavi, Weak resolvents of linear operators, *Indiana Univ. Math. J.* **36** (1987) 913–934.
65. with M.D. Choi, C. Laurie, H. Radjavi, On the congruence numerical range and related functions of matrices, *Lin. and Mult. Alg.* **22** (1987) 1–5.
66. with C. Foias and S.C. Ong, An interpolation theorem and operator ranges, *Int. Equats. Oper. Thy.* **10** (1987) 802–811.
67. with E. Nordgren, M. Radjabalipour, H. Radjavi, Quadratic operators and invariant subspaces, *Studia Math. T.* LXXXVIII (1988) 263–278.
68. with C.K. Fong, E. Nordgren, H. Radjavi, On weak resolvents of linear operators, II, *Indiana Univ. Math. J.* **39** (1990) 69–83.
69. with C.K. Fong, E. Nordgren, H. Radjavi, A similarity invariant, in *Operator Theory, Operator Algebras and Applications*, Proc. Sym. Pure Math. 51, Part II, A.M.S., Providence, 1990, pp. 99–101.
70. with M.-D. Choi and H. Radjavi, On complemented matrix algebras, *Int. Equats. Oper. Theory* **13** (1990) 165–174.
71. Equivalentents of the invariant subspace problem, in *Paul Halmos: Celebrating 50 Years of Mathematics*, Springer-Verlag, New York, 1991, pp. 179–188.
72. with D. Hadwin, E. Nordgren, M. Radjabalipour, and H. Radjavi, On simultaneous triangularization of collections of operators, *Houston J. Math.* **17** (1991) 581–602.

73. with M.-D. Choi and J. Rosenthal, Linear-Algebraic Results Associated with Anti-ferromagnetic Heisenberg Chains, *SIAM J. Matrix Anal. Appl.* **14** (1993) 830–852.
74. with M.-D. Choi, E. Nordgren, H. Radjavi, Y. Zhong, Triangularizing semigroups of quasinilpotent operators with non-negative entries, *Indiana Univ. Math. J.* **42** (1993) 15–25.
75. with E. Nordgren, Boundary values of Berezin symbols, *Int. Oper. Thy. Adv. Appl.* **73** (1994), 362–368.
76. with M.-D. Choi, A survey of Chandler Davis, *J. Lin. Alg. Appl.*, **208/209** (1994), 3–18.
77. with six co-authors (as “Hadwin Lunch Bunch”), Local multiplications on algebras spanned by idempotents, *Lin. Mult. Alg.* **37** (1994), 259–263.
78. with A. Jafarian, H. Radjavi, A. Sourour, Simultaneous triangularizability, near commutativity and Rota’s theorem, *Trans. Amer. Math. Soc.*, **347** (1995), 2191–2199.
79. with A. Soltysiak, Formulas for the joint spectral radius of non-commuting Banach algebra elements, *Proc. Amer. Math. Soc.*, **123** (1995), 2705–2708.
80. with C. Fong, G. Lumer, E. Nordgren, H. Radjavi, Local polynomials are polynomials, *Studia Math.* **115** (2) (1995), 105–107.
81. with M.-D. Choi and J. Hou, Completion of operator partial matrices to square-zero contractions, *Lin. Alg. Appl.* **256** (1997), 1-30.
82. with R. Bhatia, How and why to solve the operator equation $AX - XB = Y$, *Bull. Lond. Math. Soc.*, **29** (1997), 1-21.
83. with H. Radjavi, From local to global triangularization, *J. Functional Anal.* **147** (1997), 443-456.
84. with Cigler, Drnousek, Kokol-Bukousek, Laffey, Omladic, Radjavi, Invariant subspaces for semigroups of algebraic operators, *J. Functional Anal.* **160** (1998), 452–465.
85. with J. Holbrook, E. Nordgren, H. Radjavi, On the operator equation $AX = XAX$, *Lin. Alg. Appl.* **295** (1999), 113–116.
86. with J. Hou and H. Radjavi, Idempotent completions of operator partial matrices, *Acta. Sci. Math.* (English Ser.) **15** (1999), 333-346.
87. with H. Radjavi and V. Shulman, Operator semigroups with quasinilpotent commutators, *Proc. Amer. Math. Soc.* **128** (2000), 2413–2420.
88. with W. Longstaff, Generators of matrix incidence algebras, *Australas J. Combin. Thy.* **22** (2000), 117–121.
89. with M. Omladic, H. Radjavi, and A. Sourour, Inequalities for products of spectral radii, *Proc. Amer. Math. Soc.* **129** (2001), 2239–2243.
90. with H. Radjavi, On commutators of idempotents, *Lin. and Mult. Alg.* **50** (2002), 121–124.

91. with R. Drynovešek and H. Radjavi, A characterization of commutators of idempotents, *Lin. Alg. Appl.* **347** (2002), 91–99.
92. with J. Lu, N. Murray, H. Radjavi and E. Rosenthal, Inference for annotated logics over distributive lattices, ISMIS, Lecture Notes for Artificial Intelligence 2002, 285–293.
93. with V. Lomonosov, The simplest proof of Burnside’s Theorem on matrix algebras, *Lin. Alg. Appl.* **383** (2004), 45–47.
94. with M. Radjabalivour and B. Yahaghi, Burnside’s Theorem for matrix algebras over division rings, *Lin. Alg. Appl.* **383** (2004), 29–44.
95. with H. Radjavi, On submultiplicativity of spectral radius and transitivity of semigroups, *Proc. Amer. Math. Soc.* **135** (2007), 163–168.
96. with D. Hadwin and E. Nordgren, On the operator equation $AXB + CYD = Z$, *Oper. Matrices* 1 (2007), 199–207.
97. with H. Radjavi, Limitations on the size of semigroups of matrices, *Semigroup Forum* **76** (2008), 25–31.

b. Books

1. with H. Radjavi, *Invariant Subspaces*, Springer-Verlag, Berlin-Heidelberg-New York, (1973), 219 pp. Second edition, July 2003, Dover Publications, 248 pp.
2. Editor, Chapter 5: General Operator Theory, *Linear and Complex Analysis Problem Book 3*, Lecture Notes in Math. 1573, Springer-Verlag, 1994.
3. with H. Radjavi, *Simultaneous Triangularization*, Springer-Verlag, Berlin-Heidelberg-New York, (2000), 318 pp.
4. with R. Martínez-Avendano, *An Introduction to Operators on the Hardy-Hilbert Space*, Graduate texts in Math 237, Springer-Verlag, New York, (2007), 220 pp.

c. Reviews

1. Numerous reviews of papers in *Mathematical Reviews*.
2. Review of Edwards and Penney, *Calculus and Analytic Geometry*, *Amer. Math. Monthly* **90** (1983), 576–579.
3. Review of two books on composition operators, *Bull. Amer. Math. Soc.* **32** (1995), 150–153.
4. Featured review of “Quasinilpotent operators and the invariant subspace problem”, *Math. Reviews*: 98m47004.
5. Featured review of “Volterra semigroups have invariant subspaces”, *Math. Reviews*: 2000d47017.

9. Work-in-progress

1. Semigroup Toeplitz operators.
2. Triangular operator algebras and simultaneous triangularization.
3. Composition operators on Newton Spaces

4. with A. Atzmon, D. Kleper and A. Mahridi, Multipliers and orbit reflexivity of composition operators on weighted Hardy-Hilbert spaces, submitted for publication.
5. with H. Radjavi, Paul Halmos and Invariant subspaces, to appear in "Paul Halmos: In Memoriam".

11. Invited Lectures

- | | |
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| Before 1980 | Western Ontario, Queens Virginia, Indiana, Toledo, Miami (Ohio), Bucknell, Illinois, Buffalo, Stony Brook, New Paltz, Edinburgh, London, Bucharest, Szeged, Zagreb, Warsaw, Melbourne, Dublin, Perth, Sydney, Adelaide, Newcastle (Australia), Israel, Japan. Twice invited to speak at special session of American Mathematical Society. Twice invited to speak at annual meeting of Canadian Mathematical Society. Invited to speak at international conferences in Indiana, Dublin, Hungary, Ghana, Romania, Poland. |
| 1979-1980 | Colloquia at Bucknell University and University of Western Ontario. Invited address at C.M.S. annual meeting. Invited lecture at West African symposium on Functional analysis, Ghana. |
| 1980-1981 | Colloquia at Victoria, Ottawa, New Hampshire, Western Australia, Buffalo. |
| 1981-1982 | Invited lecture at A.M.S. special session on operator theory; Seminar talk at University of Waterloo. Colloquium and Seminar talk at University of New Hampshire. |
| 1982-1983 | Invited lecturer at semester on spectral theory, Warsaw (2 lectures). Colloquium talks at Indiana University and University of Ottawa; seminar talk University of Michigan. |
| 1983 | "Positive maps preserving invertibility", Colloquium Lecture, Indiana University. |
| 1983 (April) | "Positive maps preserving invertibility", Seminar talk University of Michigan. |
| 1984 | Colloquium and seminar at University of Western Australia: "Composition Operators" and "Fixed points of semigroups". Seminar at Murdoch University: "Orbits of linear operators". |
| 1985 (April) | Seminar at S.U.N.Y. Buffalo: "Composition operators and invariant subspaces". |
| 1985 (Nov.) | Seminar at Dalhousie University: "Weak resolvents of linear operators". |
| 1985 (Dec.) | Joint Carleton-Ottawa colloquium: "Equivalent of the Invariant Subspace Problem". |
| 1986 (Mar.) | NSF sponsored conference at Indiana University: |

- “A new kind of cyclicity”.
- 1986 (Mar.) Operator Day at Ottawa University: “Weak resolvents of linear operators”.
- 1986 (Spring) Colloquium at Univ. of New Hampshire: “The remarkable Theorem of Levy and Steinitz.”
- 1987 (March) Seminar at Arizona State University, “Weak resolvents of linear operators”.
- 1989 (Fall) Colloquium at York University: “A Similarity Invariant”.
- 1989 (Fall) Seminar at SUNY Buffalo: “On weak resolvents”.
- 1992 (Spring) Conference in Beersheva, Israel:
 “Berezin symbols and compactness of operators”.
 Colloquium lecture, University of Manitoba:
 “A numerical function that determines operators”.
 Colloquium lecture, University of New Hampshire:
 Berezin symbols of linear operators”.
- 1994 (Fall) Colloquium Lecture, University of New Hampshire
 Seminar Lecture, Dalhousie University
- 1995 (Spring) Colloquia at Adam Mickiewicz University (Poznan, Poland);
 Institute of Mathematics (Warsaw);
 Universities of the Witwatersrand, Patchefstrom,
 Capetown, Pretoria (all in South Africa);
 Seminar at University of Pretoria.
- 1995 (Fall) Colloquium at Dalhousie University.
- 1996 (Spring) Invited speaker at special session on non-self-adjoint operator algebras, American Mathematical Society annual meeting in Orlando, Florida
 Invited keynote speaker at International Conference on Abstract Analysis, South Africa
 Invited participant, Linear Algebra Workshop, Bled
- 1996-1997 Colloquium at University of Wisconsin
 Seminar at University of Wisconsin
- 1997-1998 Colloquium at Univ. of Guelph
- March 1998 Invited speaker at conference on hypercyclic operators, Kent State University
- June 1998 Invited speaker at conference at Dalhousie University
 Invited speaker at Special Session on Operator Theory at Summer meeting of the Canadian Math. Soc.
- 1999 Invited speaker at Banach Algebras 1999; lecture at Canadian Operator Algebra Conference, P.E.I.
- 2000 Invited speaker at International Conference on Abstract Analysis, South Africa
 Colloquium talk at University of Havana
 Colloquium talk at University of Capetown
 Colloquium talk at University of Western Ontario

- Invited speaker at special session of American Mathematical Society,
Toronto, September 2000
- 2001 Invited speaker, Great Plains Operator Theory Seminar, June, 2001
- 2002 Invited speaker, Canadian Operator Symposium, May 12-17, 2002,
“Orbit reflexive semigroups”.
- Invited participant, Workshop on Linear Algebra, Slovenia, June 2-15, 2002,
two lectures
- (1) “Triangular operator algebras and simultaneous triangularization”
(2) “Orbit reflexive semigroups”
- 2003 Invited speaker, Conference in honour of Don Sarason, Berkeley,
Jan. 25-26, 2003, “Orbit reflexive operators”
- Invited refereed oral conference presentation by a co-author: (with Lu, J.J.;
Murray, N.V.; Radjavi, H.; Rosenthal, E.) Inference for annotated logics
over distributive lattices, presented to 13th International Symposium
on Methodologies for Intelligent Systems, Lyon, France, June 27-29, 2002.
- Key note invited address (Blundon Lecture) APICS Mathematics,
Statistics and Computer Science Conference, October 2003, “The strange case
of Mathematics V. Law”
- Invited speaker, October 2003, AARMS research session on linear
algebra, “The simplest proof of Burnside’s Theorem on matrix algebras”
- 2005 Invited lecture “Equations such as $AX + YB = Z$ in Matrices or Operators”,
special session on Matrix Analysis, CMS annual meeting December 2005.
Colloquium Lecture “Linear Equations in Linear Operators”, Universidad de
Hidalgo Pachuca, Mexico, December 2005.
- 2008 Invited speaker at conference in honour of Ronald Douglas, China, June 2008.
Invited participant in Linear Algebra workshop, Slovenia, June 2008.
- 2009 Invited main speaker at 3rd International workshop on Elementary Operators,
Belfast, April 2009.

D. LIST OF COURSES TAUGHT

12a. Undergraduate

| | | |
|-----------|----------|--|
| 2004-2008 | MAT 246Y | Concepts in Abstract Math. (Coordinator) |
| 2003-2004 | MAT 246Y | Concepts in Abstract Math. (Coordinator) |
| 2003-2004 | MAT 137Y | Calculus I (Coordinator) |
| 2002-2003 | MAT 135Y | Calculus I (Coordinator) |
| 2001-2002 | MAT 135Y | Calculus I (Coordinator) |
| | MAT 246Y | Concepts in Abstract Math. |
| 2000-2001 | MAT 135Y | Calculus I (Coordinator) |
| | MAT 246Y | Concepts in Abstract Math. |
| 1999-2000 | MAT 246Y | Concepts in Abstract Math. |
| 1998-1999 | MAT 246Y | Concepts in Abstract Math. |
| 1997-1998 | MAT 137Y | Calculus |
| | MAT 246Y | Concepts in Abstract Math. |
| 1996-1997 | MAT 137Y | Calculus |

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| 1995-1996 | MAT 137Y | Calculus |
| | MAT 467H | Seminar in Mathematics |
| 1993-1994 | MAT 186F | Calculus I |
| | MAT 187S | Calculus II |
| 1992-1993 | MAT 186F | Calculus I |
| | MAT 187S | Calculus II |
| 1988-1989 | MAT 139Y | Calculus |
| 1986-1987 | MAT 350 | Real Analysis |
| | MAT 135Y | Calculus for Scientists |
| 1985-1986 | MAT 350 | Real Analysis |
| 1985-1986 | MAT 244S | Ordinary Differential Equations |
| 1983-1984 | MAT 150Y | Analysis I |
| 1983-1984 | MAT 459 | Functional Analysis |
| | MAT 187H | Engineering |
| | MAT 139Y | Calculus |
| 1982-1983 | MAT 150Y | Analysis I |
| | MAT 459F | Functional Analysis |
| 1981-1982 | MAT 150Y | Analysis I |
| | MAT 280F | Engineering |
| | MAT 289S | Engineering |
| 1980-1981 | On Leave | |
| 1979-1980 | MAT 130Y | Calculus I |
| | MAT 189S | Linear Analysis (Engineering) |
| | MAT 459F | Functional Analysis |
| 1978-1979 | MAT 188F | Linear Algebra (Engineering) |
| | MAT 189S | Linear Analysis (Engineering) |
| | MAT 459F | Functional Analysis |

b. Graduate

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| 2000-2001 | MAT 1015F | Semigroups of Operators |
| 1996-1997 | MAT 1015F | Linear Operators on H^2 |
| 1995-1996 | MAT 1015F | Topics in Operator Theory |
| 1992-1993 | MAT 1011F | Introduction to Linear Operators |
| | MAT 1015S | Linear Operators on H^2 |
| 1985-1986 | MAT 1015F | Topics in Operator Theory |
| 1983-1984 | MAT 1010 | Functional Analysis |
| 1982-1983 | MAT 1010F | Functional Analysis |
| | MAT 1015S | Topics in Operator Theory |

c. Ph.D. Theses Supervised

| | | |
|------|----------------|--|
| 1972 | T. Owusu-Ansah | “Hermitian operators of meromorphic type on Banach spaces” |
| 1972 | W.E. Longstaff | “Some results on nest algebras” |
| 1972 | A.A. Feintuch | “On operator algebras and invariant subspaces” |
| 1973 | A.A. Jafarian | “Spectral decomposition of operators on Banach Spaces” |

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|------|--------------|---|
| 1976 | C.K. Fong | “Applications of direct integrals to operator theory” |
| 1979 | B. Chan | “Similarity and unicellularity of triangular operators” |
| 1982 | C. Kitai | “Invariant closed sets for linear operators” |
| 1988 | N. Zorboska | “Composition operators on weighted Hardy spaces”. |
| 1989 | G. MacDonald | “Invariant subspaces for weighted translation operators”. |
| 1991 | L. Livshits | “Schur multiplication of matrices with operator entries”. |
| 1997 | B. Cload | “Commutants of Composition operators” |
| 1999 | A. Mahvidi | “Invariant Subspaces of Composition operators” |
| 2000 | R. Martinez | “Hankel Operators and Generalizations” |
| 2008 | D. Kleper | “Invariant subspaces of composition operators on weighted Hardy-Hilbert spaces” |

d. Other

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| 1985 | I. Doust | MA thesis — “Spectra of Composition operators” |
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13. Administrative Positions

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| Member, | Colloquium Committee, Departmental Council, Graduate Committee, Promotion to Professor Committee, Merit Raise Committee, various tenure Committees Departmental Councillor |
| 1981-1982 | Chairman of Undergraduate Committee |
| 1982-1983 | Mathematics programme advisor Member, Promotion to Professor Committee Chairman, Undergraduate Curriculum Committee |
| 1983-1984 | Chairman, Undergraduate Committee Math Department programme advisor Promotional and Senior Appt Committee UTFA Council Member |
| 1985-1986 | Math programme advisor UTFA Council Member Promotions and Senior Appointments Committee Merit /PTR Committee |
| 1986-1987 | Math Programme advisor UTFA Council Member Promotions Committee |
| 1989-1995 | Member, Academic Board |
| 1991-1992 | Promotions Committee |
| 1992-1993 | Promotions Committee |
| 1993-1994 | Merit Committee |
| 1994-1995 | Promotions Committee, Merit Committee |
| 1997-1998 | Graduate Appeals Committee |
| 1998-1999 | Graduate Appeals Committee Undergraduate Committee |
| 1999-2000 | Graduate Appeals Committee Merit Committee |
| 2000-2006 | Chair, Graduate Appeals Committee |