A Biograph of Professor Carl Pearcy

Professor Carl Mark Pearcy, Jr. was born on August 23, 1935 in Beaumont, Texas. He is the eldest of two sons of Carl Mark Pearcy, Sr., and Carrie Edith (Tilbury) Pearcy. His family moved to Galveston in 1940, and that is where Carl resided until he left home to attend college. Carl entered Texas A&M University in 1951, and graduated in 1954 (B.S. at age 18), and again in 1956 (M.S.). Carl then entered Rice Institute (later Rice University) as a candidate for the Ph.D. in mathematics, and spent the year 1957-58 at the University of Chicago. By June, 1959, Carl had finished his Ph.D. thesis at Rice under the direction of Arlen Brown.

In 1959-60 he held an appointment as Assistant Professor of Mathematics at Texas A&M University. He was then appointed as a postdoctoral fellow at Rice for the year 1960-61. From 1961 to 1963 Carl was employed at the Houston office of Humble Research Company doing numerical analysis, and in 1963 he was appointed Hildebrant Instructor of Mathematics at the University of Michigan. He was promoted to Professor in 1968, and he remained at Michigan until his "retirement" in 1990, at which time he accepted an appointment as Professor of Mathematics at Texas A&M University. Carl was a Alfred P. Sloan fellow from 1966 to 1968, and was the main speaker at two conferences sponsored by the Conference Board of Mathematical Sciences of the National Science Foundation. These conferences were at Bucknell University in 1975 and Arizona State University in 1984. Carl has supervised the Ph.D. theses of the students listed below, and has published 4 books and 130 papers. His publications are listed below. Moreover, he has been supported by grants from the National Science Foundation from 1964 through 2003.

Students with Ph.D. theses:

1. Donald J. Deckard (joint with Arlen Brown; Rice University, 1963)

2. Donald H. Rhoads (joint with Arlen Brown; University of Michigan, 1968)

3. Charles M. Schneeberger (University of Michigan, 1969)

4. Thomas B. Hoover (University of Michigan, 1970)

5. Alan L. Lambert (University of Michigan, 1970)

6. Norberto Salinas (University of Michigan, 1970)

7. T. Rolf Turner (University of Michigan, 1971)

8. Edward A. Azoff (University of Michigan, 1972)

9. Lawrence A. Fialkow (University of Michigan, 1973)

10. Mary F. Rhodes (University of Michigan, 1975)

11. Lawrence Williams (University of Michigan, 1976)

12. Vern L. Paulsen (University of Michigan, 1977)

13. Bernard Chevreau (University of Michigan, 1978)

14. Hari Bercovici (University of Michigan, 1982)

15. Joseph A. Langsam (University of Michigan, 1982)

16. Gregory F. Robel (University of Michigan, 1982)

17. George Exner (University of Michigan, 1983)

18. Derek Westwood (University of Michigan, 1984)

19. Michael Marsalli (University of Michigan, 1985)

20. Patrick Sullivan (University of Michigan, 1986)

21. Il Bong Jung (University of Michigan, 1988)

22. Wing Suet Li (University of Michigan, 1990)

23. Alfredo Octavio (University of Michigan, 1991)

24. Srdjan Petrovic (University of Michigan, 1992)

25. Gelu Popescu (Texas A&M University, 1993)

26. Radu Gadidov (Texas A&M University, 1994)

27. Adrian Ionescu (Texas A&M University, 1994)

28. Vasile Lauric (Texas A&M University, 1997)

29. Eugen Ionascu (Texas A&M University, 1997)

30. Amir Husain (joint with Roger Smith; Texas A&M University, 2004)

31. Sami M. Hamid (Texas A&M University, 2005)

Publications of Books

1. Introduction to operator theory. Volume I. Elements of functional analysis (with A. Brown), Graduate Textbook, Springer-Verlag (1977).

2. Some recent progress in operator theory, CBMS Regional Conference Series in Mathematics, Number 36, Amer. Math. Soc. (1978).

3. Topics in operator theory, Mathematical Surveys, Number 13, Amer. Math. Soc., 1974 (Editor).

4. Invariant subspaces, dilation theory, and dual algebras (with H. Bercovici and C. Foias), CBMS Regional Conference Series in Mathematics, Number 56, Amer. Math. Soc. (1985).

5. An introduction to analysis (with A. Brown), Graduate Textbook, Springer-Verlag (1994).

6. The Lebesgue integral; an axiomatic approach (with A. Brown), Graduate Textbook, in preparation.

Articles

- A complete set of unitary invariants for 3×3 complex matrices, Trans. Amer. Math. Soc. 104, 425-429 (1962).

- A complete set of unitary invariants for operators generating finite W^*-algebras of type I, Pacific J. Math. 12, 1405-1417 (1962).

- W^*-algebras with a single generator, Proc. Amer. Math. Soc. 13, 831-832 (1962).

- On convergence of alternating direction procedures, Numerische Mathematik 4, 172-176 (1962).

- On matrices over the ring of continuous complex-valued functions on a Stonian space (with D. Deckard), Proc. Amer. Math. Soc. 14, 322-328 (1963).

- Another class of invertible operators without square roots (with D. Deckard), Proc. Amer. Math. Soc. 14, 445-449 (1963).

- On unitary equivalence of matrices over the ring of continuous complex-valued functions on a Stonian space, Canad. J. Math. 15, 323-331 (1963).

- On convergence of alternating direction procedures in the presence of singular operators (with J. Douglas), Numerische Mathematik 5, 175-184 (1963).

- On algebraic closure in function algebras (with D. Deckard), Proc. Amer. Math. Soc. 15, 259-263 (1964).

- On certain von Neumann algebras which are generated by partial isometries, Proc. Amer. Math. Soc. 15, 393-395 (1964).

- Entire functions on infinite von Neumann algebras of type I, Mich. Math. J. 11, 1-7 (1964).

- On continuous matrix-valued functions on a Stonian space (with D. Deckard), Pacific J. Math. 14, 857-869 (1964).

- Structure theorem for commutators of operators (with A. Brown), Bull. Amer. Math. Soc. 70, 779-780 (1964).

- On commutators of operators on Hilbert space, Proc. Amer. Math. Soc. 16, 53-59 (1965).

- Structure of commutators of operators (with A. Brown), Annals of Math. 82, 112-127 (1965).

- Commutators of operators on Hilbert space (with A. Brown and P.R. Halmos), Canad. J. Math. 17, 695-708 (1965).

- Spectral theory of generalized Toeplitz operators (with R.G. Douglas), Trans. Amer. Math. Soc. 115, 433-444 (1965).

- On unitary equivalence of Hilbert-Schmidt operators (with D. Deckard), Proc. Amer. Math. Soc. 16, 671-675 (1965).

- Multiplicative commutators of operators (with A. Brown), Canad. J. Math. 18, 737-749 (1966).

- Commutators in factors of type III (with A. Brown), Canad. J. Math. 18, 1152-1160 (1966).

- Spectra of tensor products of operators (with A. Brown), Proc. Amer. Math. Soc. 17, 162-166 (1966).

- Multi-stage alternating direction methods (with J. Douglas and A.O. Garder), SIAM J. Anal. 3, 570-581 (1966).

- An elementary proof of the power inequality for the numerical radius, Mich. Math. J. 13, 289-291 (1966).

- On rootless operators and operators without logarithms (with D. Deckard), Acta. Sci. Math. (Szeged) 28, 1-7 (1967).

- Sums of small numbers of idempotents (with D. Topping), Mich. Math. J. 14, 453-465 (1967).

- Trace-preserving isomorphisms in finite operator algebras (with J. Ringrose), Amer. J. Math. 90, 444-455 (1968).

- Commutators and the strong radical (with A. Brown and D. Topping), Duke Math. J. 35, 853-860 (1968).

- Operators of the form $PAQ - QAP$ (with A. Brown), Canad. J. Math. 20, 1353-1361 (1968).

- On a topology for invariant subspaces (with R.G. Douglas), J. Funct. Anal., 3, 323-341 (1968).

- Lifting commuting operators (with R.G. Douglas and P. Muhly), Mich. Math. J. 15, 385-395 (1968).

- A characterization of thin operators (with R.G. Douglas), Acta. Sci. Math. (Szeged) 29, 295-297 (1968).

- Commutators and certain II_1-factors (with D. Topping), J. Funct. Anal. 3, 69-78 (1969).

- Von Neumann algebras with a single generator (with R.G. Douglas), Mich. Math. J. 16, 21-26 (1969).

- On invariant subspaces of quasitriangular operators (with D. Deckard and R.G. Douglas), Amer. J. Math. 91, 637-647 (1969).

- A note on quasitriangular operators (with R.G. Douglas), Duke Math. J. 37, 177-188 (1970).

- On the spectral theorem for normal operators (with R.G. Douglas), Proc. Cambridge Phil. Soc. 68, 393-400 (1970).

- On commutators in ideals of compact operators (with D. Topping), Mich. Math. J. 18, 247-252 (1971).

- Compact restrictions of operators (with A. Brown), Acta. Sci. Math. (Szeged), 32, 271-282 (1971).

- Ideals of compact operators on Hilbert space (with A. Brown and N. Salinas), Mich. Math. J. 18, 373-384 (1971).

- Hyperinvariant subspaces and transitive algebras (with R.G. Douglas), Mich. Math. J. 19, 1-12 1972).

- Compact restrictions of operators: II (with A. Brown), Acta. Sci. Math. (Szeged) 33, 161-164 (1972).

- An invariant subspace theorem (with N. Salinas), Mich. Math. J. 20, 21-31 (1973).

- Compact perturbations of seminormal operators (with N. Salinas), Indiana U. Math. J. 22, 789-793 (1973).

- Hyperinvariant subspaces via topological properties of lattices (with R.G. Douglas and N. Salinas), Mich. Math. J. 20, 109-113 (1973).

- Perturbations by nilpotent operators on Hilbert space (with A. Brown and N. Salinas), Proc. Amer. Math. Soc. 41, 530-534 (1973).

- Invariant subspaces of non-quasitriangular operators (with R.G. Douglas), Proc. Conf. Op. Theory, Springer-Verlag, Lecture Notes in Mathematics, Vol. 345, 13-57 (1973).

- Operators with compact self-commutator (with N. Salinas), Canad. J. Math. 26, 115-120 (1974).

- Finite-dimensional representations of separable C^*-algebras (with N. Salinas), Bull. Amer. Math. Soc. 80, 970-972 (1974).

- Remarks on the invariant-subspace problem (with J. Ringrose and N. Salinas), Mich. Math. J. 21, 163-166 (1974).

- A survey of the Lomonosov technique in the theory of invariant subspaces (with A. Shields), Topics in Operator Theory, A.M.S. Surveys, No. 13, Providence, 221-230 (1974).

- A model for quasinilpotent operators (with C. Foias), Mich. Math. J. 21, 399-404 (1974).

- The reducing essential matricial spectra of an operator (with N. Salinas), Duke Math. J. 42, 423-434 (1975).

- Finite-dimensional representations of C^*-algebras and the reducing matricial spectra of an operator (with N. Salinas), Revue Roum. Math. Pures et Appl. 20, 567-598 (1975).

- The staircase representation of biquasitriangular operators (with C. Foias and D. Voiculescu), Mich. Math. J. 22, 343-352 (1975).

- Rank-one commutators and hyperinvariant subspaces (with H.W. Kim and A. Shields), Mich. Math. J. 22, 193-194 (1975).

- Sufficient conditions for rank-one commutators and hyperinvariant subspaces (with H.W. Kim and A. Shields), Mich. Math. J. 23, 235-243 (1976).

- Quasiaffine transforms of compact perturbations of normal operators (with C. Apostol and C. Foias), INCREST Series in Mathematics, No. 13 (1976).

- Extensions of C^*-algebras and the reducing essential matricial spectra of an operator (with N. Salinas), K-Theory and Operator Algebras, Springer-Verlag, Lectures Notes in Mathematics, Vol. 575, 96-112 (1977).

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- Biquasitriangular operators and quasisimilarity (with C. Foias and D. Voiculescu), Linear Spaces and Approximation, Birkhaüser Verlag, 47-52 (1978).

- Compact operators with root vectors that span (with D. Deckard and C. Foias), Proc. Amer. Math. Soc. 76, 101-106 (1979).

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- Subnormal operators and hyperinvariant subspaces (with H.W. Kim), Illinois J. Math. 23, 459-463 (1979).

- Contractions with rich spectra have invariant subspaces (with S. Brown and B. Chevreau), J. Operator Theory 1, 123-136 (1979).

- Almost commuting matrices (with A. Shields), J. Funct. Anal. 33, 332-338 (1979).

- A variation of Lomonosov's theorem (with H.W. Kim and R. Moore), J. Operator Theory 2, 131-140 (1979).

- Extensions of normal operators and hyperinvariant subspaces (with H.W. Kim), J. Operator Theory 3, 203-211 (1980).

- The functional model of a contraction and the space L^1 (with C. Foias and B. Sz.-Nagy), Acta. Sci. Math. 43, 201-204 (1980).

- A variation of Lomonosov's theorem II (with H.W. Kim and R. Moore), J. Operator Theory 5, 283-287 (1981).

- Finitely connected domains G, representations of $H^\infty(G)$, and invariant subspaces (with B. Chevreau and A. Shields), J. Operator Theory 6, 375-405 (1981).

- Functional models and extended spectral dominance (with H. Bercovici, C. Foias, and B. Sz.-Nagy), Acta. Sci. Math. 43, 243-254 (1981).

- Contractions with spectral radius one and invariant subspaces (with H. Bercovici, C. Foias, and B. Sz.-Nagy), Acta. Sci. Math. 43, 273-280 (1981).

- The spectral picture of functions of operators (with C. Bosch, C. Hernandez and E. De Oteyza), J. Operator Theory 8, 391-400 (1982).

- Quasiaffine transforms of operators (with C. Apostol, H. Bercovici, and C. Foias), Michigan Math. J. 29, 243-255 (1982).

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- Dilation theory and systems of simultaneous equations in the predual of an operator algebra. I (with H. Bercovici, B. Chevreau, and C. Foias), Mich. Math. J. 30, 335-354 (1983).

- Dilation theory and systems of simultaneous equations in the predual of an operator algebra. II (with H. Bercovici, B. Chevreau, and C. Foias), Math. Z. 187, 97-103 (1984).

- Factoring compact operator-valued functions (with H. Bercovici, C. Foias, and B. Sz.-Nagy), Acta. Sci. Math. 48, 25-36 (1985).

- Factoring trace-class operator-valued functions with applications to the class $\mathbb{A}_{\aleph_0}$ (with H. Bercovici and C. Foias), J. Operator Theory 14, 351-389 (1985).

- Invariant subspaces, dilation theory, and the structure of the predual of a dual algebra. I (with C. Apostol, H. Bercovici and C. Foias), J. Funct. Anal. 62, 369-404 (1985).

- Invariant subspaces, dilation theory, and the structure of the predual of a dual algebra. II (with C. Apostol, H. Bercovici and C. Foias), Indiana U. Math. J. 34, 845-855 (1985).

- Sur le problème du sous-espace invariant pour les contractions (with B. Chevreau), C.R. Acad. Sci. (Paris), 301, 735-738 (1985).

- On the theory of the class $\mathbb{A}_{\aleph_0}$ with applications to invariant subspaces and the Bergman shift operator (with C. Apostol, H. Bercovici, and C. Foias), Operator Theory: Advances and Applications 17, Birkhaüser Verlag, Basel, 43-49 (1986).

- On the reflexivity of algebras and linear spaces of operators (with H. Bercovici and C. Foias), Michigan Math. J. 33, 119-126 (1986).

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- Growth conditions on the resolvent and membership in the classes $\mathbb{A}$ and $\mathbb{A}_{\aleph_0}$ (with B. Chevreau), J. Operator Theory 16, 375-385 (1986).

- A spectral mapping theorem for functions with finite Dirichlet integral (with H. Bercovici and C. Foias), J. Reine Angew. Math. 366, 1-17 (1986).

- Membership in $\mathbb{A}_{\aleph_0}$ and invariant subspaces (with B. Chevreau), Operator Theory: Advances and Applications 24, Birkhaüser Verlag, Basel, 41-49 (1987).

- On reflexivity of operators (with J. Barria and H.W. Kim), J. Math. Anal. Appl. 126, 316-323 (1987).

- Sur le problème du sous-espace invariant pour les contractions (with S. Brown and B. Chevreau), C.R. Acad. Sci. (Paris) 304, 9-12 (1987).

- Sur la rèlexivité des contractions de l'espace Hilbertien (with B. Chevreau and G. Exner), C.R. Acad. Sci. (Paris), 305, 117-120 (1987).

- On the structure of contraction operators I (with B. Chevreau), J. Funct. Anal. 76, 1-29 (1988).

- On the structure of contraction operators II (with S. Brown and B. Chevreau), J. Funct. Anal. 76, 30-55 (1988).

- Two Banach space methods and dual operator algebras (with H. Bercovici and C. Foias), J. Funct. Anal. 78, 306-345 (1988).

- Structure theory and reflexivity of contraction operators (with B. Chevreau and G. Exner), Bull. Amer. Math. Soc. 19, 299-301 (1988).

- On Sheung's theorem in the theory of dual operator algebras (with B. Chevreau), Operator Theory: Advances and Applications 25, Birkhaüser Verlag, Basel, 43-50 (1988).

- On the structure of contraction operators III (with B. Chevreau and G. Exner), Mich. Math. J. 36, 29-62 (1989).

- The isolated Fredholm spectrum in the theory of dual algebras (with B. Chevreau), Houston J. Math. 17, 395-403 (1991).

- On common noncyclic vectors for families of operators (with B. Chevreau), Houston J. Math. 17, 637-650 (1991).

- On polynomially bounded weighted shifts (with S. Petrovic), Houston J. Math. 20, 27-45 (1994).

- On centered and weakly centered operators (with V. Paulsen and S. Petrovic), J. Funct. Anal. 128, 87-101 (1995).

- On polynomially bounded operators II (with W.S. Li), Houston J. Math. 21, 719-733 (1995).

- Boundary sets for a contraction (with B. Chevreau and G. Exner), J. Operator Theory 34, 347-380 (1995).

- On the unitary systems affiliated with orthonormal wavelet theory in n dimensions (with E. Ionascu, and D. Larson), J. Funct. Anal., 157, 413-431 (1998).

- A new Lomonosov lemma (with B. Chevreau and W.S. Li), J. Operator Theory, 40, 409-417 (1998).

- On subwavelet sets (with E. Ionascu), Proc. Amer. Math. Soc., 126, 3549-3552 (1998).

- On wavelet sets (with E. Ionascu and D. Larson), J. Fourier Anal. Appl., 4, 711-721 (1998).

- Trace-class commutators with trace zero (with V. Lauric), Acta Sci. Math. (Szeged), 66, 341-349 (1999).

- Aluthge transforms of operators (with I.B. Jung and E. Ko), Integral Equations and Operator Theory, 37, 437-448 (2000).

- Spectral pictures of Aluthge transforms of operators (with I.B. Jung and E. Ko), Integral Equations and Operator Theory 40, 52-60 (2001).

- Spectral properties of some operator matrices (with I.B. Jung and E. Ko), Arch. Math. 80, 37-46 (2002).

- The iterated Aluthge transform of an operator (with I.B. Jung and E. Ko), Integral Equations and Operator Theory, 45, 375-387 (2003).

- Complete contractivity of maps associated with the Aluthge and Duggal transforms (with C. Foias, I.B. Jung and E. Ko), Pacific J. Math. 209, 249-359 (2003).

- On quasinilpotent operators (with I.B. Jung and E. Ko), Proc. Amer. Math. Soc. 131, 2121-2127 (2003).

- Direct paths of wavelets (with E. Azoff, E. Ionascu and D. Larson), Houston J. Math. 29, 737-756 (2003).

- On common invariant subspaces for operators (with I.B. Jung and E. Ko), Kyungpook Math. J. 44, 41-45 (2004).

- Square roots of (BCP)-operators (with I.B. Jung and E. Ko), Arch. Math. 82, 317-323 (2004).

- On universal coefficient sequences (with I.B. Jung and E. Ko), Kyungpook Math. J. 44, 213-218 (2004).

- On quasinilpotent operators, II (with C. Foias, I.B. Jung and E. Ko), J. Australian Math. Soc. 77, 349-356 (2004).

- On the hyperinvariant subspace problem (with C. Foias), J. Funct. Anal. 219, 134-142 (2005).

- Weak* continuous characters on dual algebras (with B. Chevreau, I.B. Jung and E. Ko), Indiana Univ. Math. J. 54, 187-198 (2005).

- Operators which admit a moment sequence (with C. Foias, I.B. Jung and E. Ko), Israel J. Math., 145, 83-92 (2005).

- Some nonhypertransitive operators (with I.B. Jung and E. Ko), Pacific J. Math., to appear.

- On quasinilpotent operators, III (with C. Foias, I.B. Jung and E. Ko), J. Operator Theory, to appear.

- On the hyperinvariant subspace problem, II (with S. Hamid and C. Onica), Indiana Univ. Math. J., to appear.

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