

BIOGRAPHICAL DATA FILE

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NAME: Elliott Ward Cheney

DATE OF LATEST REVISION: December 31, 2012

DEPARTMENT: Mathematics

TRAINING, SECONDARY SCHOOL: Fountain Hill High School, Bethlehem, Pennsylvania, 1944-1947

TRAINING, UNIVERSITY: Lehigh University, Bethlehem, Pennsylvania, 1947-1951. B.A. 1951

TRAINING, POST GRADUATE: Lehigh University, 1951-1952. University of Kansas, 1952-1956.

Ph.D. University of Kansas, 1957.

ACADEMIC APPOINTMENTS

Instructor, University of Kansas, 1954-1956

Assistant Professor, Iowa State University, 1961-1962

Assistant Professor, UCLA, 1962-1964

Associate Professor, UCLA, 1964-1965

Visiting Associate Professor, University of Texas, 1964-1965

Associate Professor, University of Texas, 1965-1966

Professor, University of Texas, 1966-present

Visiting Professor, Michigan State University, 1969-1970 (academic year)

Visiting Professor, Lund University, Sweden, 1966-1967 (academic year)

Visiting Professor, Lund University, Sweden, 1969 (Spring semester)

OTHER POSITIONS AND EXPERIENCE

U.S. Forest Service, laborer, straw-boss, assistant camp superintendent, camp superintendent, summers 1947-1954

Astronautics Division, General Dynamics Corporation, with rank of Design Specialist, 1956-1959

Space Technology Laboratories, member of the technical staff, 1959-1961

Boeing Scientific Research Laboratories, consultant, summers of 1962 and 1963 (full time)

Consultant to Aerospace Corporation, 1962-1963 (one day per week)

Consultant to IBM Corporation, 1965-1966, Houston (one day per week)

Guest worker, IBM Research Laboratory, Yorktown Heights, NY, summer 1974

Guest Worker, Technische Hochschule, Munich, summer 1964

Director of NSF Summer Institute in Numerical Analysis, summer 1963 (at UCLA)

Professor, NSF Summer Institute in Numerical Analysis, UCLA, 1961, 1962

Special Lecturer, Royal Institute of Technology, Stockholm, four weeks in May, 1967.

Guest Worker, Ecole Polytechnique, Lausanne, summer 1967

Instructor, Extension Division, University of California, 1956-1964

Instructor, Extension Division, University of Southern California, 1959-1961

Instructor, Extension Division, University of Texas, 1970-1977

Guest worker, University of Florence, July 1976

Guest worker, University of St. Andrews, June and July, 1977

Guest worker, University of Lancaster, June and July, 1978

Guest worker, Brunel University, August 1977

Guest worker, The Technion, Haifa, Israel, 15 May - 30 June, 1980

Visiting professor, Department of Mathematics, University of Lancaster, 10 June - 14 August, 1981

Senior Visiting Research Fellow of the Science and Engineering Research Council, Great Britain, January 1 to June 30, 1984.

Same appointment, 3 months, summer of 1985.

Same appointment, 2 months, summer of 1986.

Visiting Research Mathematician, University of Lancaster, 1 month, summer of 1987

Same appointment, 1 month, summer of 1988

Same appointment, 1 month, summer of 1989.

Senior Visiting Research Fellow, University of Lancaster, June and July 1990. (Salary paid from SERC of Great Britain.)

Senior Visiting Research Fellow, University of Lancaster, 15 May-15 June, 1991. (Salary from SERC.)

Senior Visiting Research Fellow, University of Leicester, Leicester, England, 15 May-15 June, 1992. (Salary from SERC.)

Senior Visiting Research Fellow, University of Leicester, 15 May–20 June, 1993. (Salary from SERC.)
 Senior Visiting Research Fellow, University of Leicester, 9 May –25 Aug., 1994. (Salary paid by SERC.)
 Senior Visiting Research Fellow, University of Leicester, May 1 to August 31, 1995. (Salary from SERC.)
 In 2005 I retired from the University of Texas and in due course, was given the title of Professor Emeritus.

PUBLICATIONS: BOOKS

1. Advanced undergraduate textbook: “Introduction to Approximation Theory”, McGraw-Hill Book Company, New York, 1966. xii+259 pp. MR 36 # 5568.
2. Japanese translation of same, Kyoritsu Shuppan, Tokyo, 1977. vii+293 pp.
3. Chinese translation of same, Peking, China, 1980.
4. Second (revised) edition of same, Chelsea Publishing Company New York, 1982.
- 5 Same, now published by the American Mathematical Society.
6. With J.F.Hart, C.L.Lawson, H.J.Maehly, C.K.Mesztenyi, J.R.Rice, H.C.Thacher, Jr., and C.Witzgall, “Computer Approximations”, SIAM Series in Applied Mathematics, John Wiley and Sons, New York, 1968. x+342 pp.
7. With D.R.Kincaid, “Numerical Mathematics and Computing”, Brooks-Cole Publishing Company, Pacific Grove, California, 1980. xiv+362 pp.
8. Second (revised) edition of same, May 1985.xiii+562pp.
9. Third (revised) edition of same, 1994.
10. Fourth (revised) edition of same, 1999, xvi + 671pp.
11. Fifth (revised) edition of same, 2003.
12. Sixth (revised) edition of same, 2007.
12. (Editor) “Approximation Theory III”, Proceedings of a Conference held in Austin, Texas, January 1980. Academic Press, New York, 1980. xxiii+944 pp.
13. with W.A.Light, monograph: “Approximation Theory in Tensor Product Spaces”, Springer-Verlag Lecture Notes in Mathematics, Vol. 1169, 1985. MR 87g:41064
14. monograph: “Multivariate Approximation Theory: Selected Topics”, Conference Board of the Mathematical Sciences, Regional Conference Series in Mathematics, Vol. 51, SIAM Publications, Philadelphia, 1986. MR 88k:41003. Reviewed in Amer. Math. Monthly 94 (1987),706.
15. with D.R.Kincaid, graduate textbook: “Numerical Analysis: Mathematics of Scientific Computing”, Brooks-Cole Publishing Company, Pacific Grove, California, 1991. MR 92c:65002.
16. Second edition of same, 1996, xii + 804pp.
17. Third edition of same, 2001. xiv + 788 pp.
18. Polish edition of same, 2004
19. (Editor) “Approximation Theory VII”, Proceedings of a conference held in Austin, Texas in January 1992. co-edited with C.K.Chui and L.L.Schumaker. Academic Press, New York, 1992.
20. (with W.A. Light), graduate text book “A Course in Approximation Theory”, Brooks-Cole Publishing Company, 1999. xvi + 359pp. This is now published by the American Mathematical Society.
21. Graduate textbook: “Analysis for Applied Mathematics,” volume 208 in the series “Graduate Texts in Mathematics”, Springer-Verlag, New York, 2001.

PUBLICATIONS: ARTICLES

“MR” citations are to Mathematical Reviews

1. with A.A. Goldstein, “A finite algorithm for the solution of consistent linear equations and inequalities and for the Tchebycheff approximation of inconsistent linear equations”, Pacific Journal of Mathematics 8(1958) 415-427. MR 21-315.
2. With A.A. Goldstein, “Note on a paper by Zuhovickii concerning the Tchebycheff problem for linear equations”, Journal of the Society for Industrial and Applied Mathematics 6(1958) 233-239. MR 21# 4536.
3. with A.A. Goldstein, “Proximity maps for convex sets”, Proceedings of the American Mathematical Society 10(1959)448-450. MR21# 3755.
4. “An example in differential equations: the N-body problem”, American Mathematical Monthly 67 (1960) 456-457.
5. with H.L.Loeb, “Two new algorithms for rational approximation”, Numerische Mathematik 3(1961)72-75. MR 22 # 21692.
6. with A.A. Goldstein, “Newton’s method for convex programming and Tchebycheff approximation”, Numerische Mathematik 1(1959)253-268 MR 22 # 316.
7. With A.A. Goldstein, “Tchebycheff approximation in locally convex spaces”, Bulletin of the American Mathematical Society, 68(1962)449-450. MR 26 # 531.

8. With H.L. Loeb, "On rational Chebyshev Approximation", *Numerische Mathematik* 4(1962)124-127. MR 27 # 2088.
9. With A.Sharma, "On a generalization of Bernstein polynomials", *Revista Matematica Dell University di Parma*, 5(1964)77-84. MR 33 # 6233.
10. With A. Sharma, "Bernstein power series", *Canadian Journal of Mathematics*, 16(1964)241-252. MR 31 # 3770.
11. With T. H. Southard, "A survey of methods for rational approximation, with particular reference to a new method based on a formula of Darboux", *SIAM Review (Society for Industrial and applied Mathematics)* 5(1963)219-231. MR 28 # 1754.
12. With H.L. Loeb, "Generalized rational approximation", *Society for Industrial and Applied Mathematics, Journal of Numerical Analysis*, 1(1964)11-25. MR 31 # 2546.
13. With A. A. Goldstein, "Tchebycheff approximation and related extremal problems", *Journal of Mathematics and Mechanics* 14(1965)87-98. MR 30 # 4103.
14. "Approximation by generalized rational functions" pp.101-110 in "Approximation of Functions", H. L. Garabedian, ed., Elsevier Publishing Company, Amsterdam, 1965. MR 32 # 8006.
15. "An elementary proof of Jackson's theorem on mean-approximation", *Mathematics Magazine* 38(1965) 189-191. MR 31 # 5019.
16. With T.J. Rivlin, "A comparison of uniform approximations on an interval and a finite subset thereof", *Society for Industrial and Applied Mathematics Journal of Numerical Analysis* 3(1966)311-320. MR34 # 4773.
17. With H.L. Loeb, "On the continuity of rational approximation operators", *Archive for Rational Mechanics and Analysis* 21(1966) 391-401. MR 34 # 6402.
18. With A.A.Goldstein, "Mean-square approximation by generalized rational functions", *Mathematische Zeitschrift*, 95(1967), 232-241. MR 36 # 3022.
19. With D.E.Wulbert, "Existence and unicity of best approximations", *Mathematica Scandinavica*, 24 (1969), 113-140. MR 41 # 5857. corrigendum: *ibid* 27(1970)245.
20. With A.A.Goldstein, "A note on nonlinear approximation theory", pp. 251-255 in "Numerische Mathematik, etc." Birkhauser-Verlag ISNM Series, Vol. 9, 1968. MR 42 # 6479.
21. With F.Schurer, "A note on the operators arising in spline approximation", *Journal of Approximation Theory*, 1(1968), 94-102. MR 37 # 5580.
22. With F.Schurer, "On interpolating cubic spline with equally-spaced nodes", *Indagationes Mathematica*, 30 (1968), 517-524. MR 40 # 6129.
23. With C.Hobby, P. Morris, F. Schurer, D. Wulbert, "On the minimal property of the Fourier projection", *Bulletin of the American Mathematical Society*, 75 (1969), 51-52. MR 38 # 4883.
24. With C. Hobby, P. Morris, F. Schurer, D. Wulbert, "On the minimal property of the Fourier projection", *Transactions of the American Mathematical Society*, 143(1969), 249-258. MR 41 # 704.
25. With K.H. Price, "Minimal interpolating projections", *Proceedings of a conference at Oberwolfach, Germany, June 1969*. Birkhauser-Verlag ISNM Vol. 15, Basel, 1970, pp. 115-121. MR 51 # 3778. Also Report TNN-91, The University of Texas Computation Center.
26. With F. Schurer, "Convergence of cubic spline interpolants", *Journal of Approximation Theory*, 3(1970), 114-116. MR 40 # 7680.
27. With K.H. Price "Minimal projections", pp. 261-289 in "Approximation Theory", Ed. by A. Talbot, Academic Press, New York, 1970. MR 42 # 571.
28. With B.D. Anderson, "Continuous function spaces with integral norms", *Abhandlungen aus dem Mathematischen Seminar der Universität Hamburg*, 36(1971), 66-74. MR 48 # 775.
29. With J. Blatter, "On the existence of extremal projections", *Journal of Approximation Theory* 6(1971) 72-79. MR 49 # 3403
30. With A.Bacopoulos, "The approximation of functions: an introduction to the theory and to some open problems", *Bulletin de la Societe Mathematique de Grece*, 12(1971), 45-65. MR 45 # 7348. expository article.
31. With J. Blatter, "Minimal projections on hyperplanes in sequence spaces", *Annali di Matematica Pura ed Applicata*, 101 (1974), 215-227. MR 50 # 10644
32. "Projections with finite carrier", in "Numerische Methoden der Approximationstheorie", ISNM Vol. 16, Birkhäuser Verlag, Basel 1972, pp. 19-32. MR 53 # 8738.
33. With P.D.Morris, "On the existence and characterization of minimal projections", *Journal für die Reine und Angewandte Mathematik*, 270(1974), 61-76. MR 50 # 10653.
34. with P.D.Morris, "Stability properties of trigonometric interpolation operators", *Mathematische Zeitschrift* 131 (1973) 153-164. MR 48 # 4603.
35. with P.D. Morris, "The numerical determination of projection constants", ISNM Series, Birkhauser-Verlag, 26(1975), 29-40. MR 52:12294. Also Report CNA 75, The University of Texas.
36. with T.A. Kilgore, "A theorem on interpolation in Haar subspaces", *CNA Report*, The University of Texas, Jan. 1974. *Aequationes Mathematica* 14(1976),391-400. MR 53 # 13924.
37. with K.H. Price, "A linear best approximation operator", pp.441- 444 in "Approximation Theory", ed. by G.G. Lorentz, Academic Press, 1973. MR 49 # 3409.

38. with P.D. Morris and K.H. Price, "On an approximation operator of de La Vallée Poussin", *Journal of Approximation Theory*, 13 (1975), 375-391. MR:52:8745.
39. with T. A. Kilgore, "An existence theorem for solutions of nonlinear systems of equations", CNA Report 97, January 1975.
40. with T.J. Rivlin, "Some polynomial approximation operators", *Mathematische Zeitschrift*, 145(1975), 33-42. Also CNA Report 96, The University of Texas, Austin. MR 52 # 14772
41. "A survey of recent progress in approximation theory", *Proceedings of the International Congress of Mathematicians, Vancouver, 1974*, Vol. 2, 411-415. MR 55 # 929. Also CNA Report # 98, University of Texas.
42. with T. J. Rivlin, "A note on some Lebesgue constants", *Rocky Mountain Journal of Mathematics*, 6(1976), 435-439. MR 54 # 3265
43. "A bibliography for approximation theory", CNA Report # 94, University of Texas.
44. "Applications of fixed-point theorems to approximation theory", *Proceedings of a Symposium on Approximation Theory, Calgary 1975*. edited by A. Law and B. Sahney. pp. 1-8. Academic Press 1976. MR 54 # 5705.
45. With C.Franchetti, "Minimal projections in L_1 spaces", *Duke Mathematical Journal* 43(1975)501-510. MR 54# 11044.
46. With C. Franchetti, "The problem of minimal projections in L_1 spaces", *Proceedings of the Symposium on Approximation Theory, Austin, Texas 1976*. Edited by G.G. Lorentz, C.Chui, and L.L. Schumaker. Academic Press, 1977. MR 56 # 3520.
47. With C. Franchetti, "Minimal projections of finite rank in sequence spaces", *Colloquia Mathematica Societatis Janos Bolyai, Vol.19, Fourier Analysis and Approximation Theory*. Budapest 1979, pp. 241-253. Also CNA Report # 110, February 1979. MR 84b:46010
48. With C. Franchetti, "Orthogonal projections in spaces of continuous functions", *Journal of Mathematical Analysis and Applications* 63(1978) 253-264. MR 58:1923.
49. "Projection operators in approximation theory" CNA Report # 115, October 1976. "Studies in Functional Analysis" ed. by R.G. Bartle, Mathematical Association of America. MAA Studies in Mathematics Series, no. 21. 1980. MR83e:41001.
50. With G.M.Phillips and J.H.McCabe, "A mixed-norm bivariate approximation problem with applications to Lewanowicz operators", CNA Report # 127, October 1977. University of Texas. pp. 315-323 in "Multivariate Approximation" ed. by D. C. Handscomb, Academic Press, New York 1978. MR 80I:41027
51. With W. F. Gordon, "Bivariate and multivariate interpolation with noncommutative projectors" pp.381-387 in "Linear Spaces and approximation" ed. by P.L.Butzer and B. Nagy, ISNM Series, Vol. 40, Birkhauser-Verlag, Basel, 1978. MR 80A:41035.
52. With G.M.Phillips and J.H.McCabe, "On simultaneous Chebyshev approximation" *Journal of Approximation Theory*, 27 (1979), 93-98. CNA Report 131, February 1978. University of Texas. MR 80m:41014.
53. With W.A.Light, "On the approximation of a bivariate function by the sum of univariate functions" CNA Report # 140, August 1978, University of Texas. *Journal of Approximation Theory* 29 (1980),305-322. MR 82d:41023.
54. With M.von Golitschek, "On the algorithm of Diliberto and Straus for approximating bivariate functions by univariate ones", CNA Report # 141, August 1978, University of Texas. *Numerical Functional Analysis and Optimization*, 1(1979), 341-363. MR 80G:41023
55. Review of "Discontinuous Cebyshev Systems", by Roland Zielke, *Bull. Amer. Math. Soc. (N.S.)* 3 (1980), 733-735.
56. With W.A.Light, G.M.Phillips, and J.H.McCabe, "The approximation of bivariate functions by sums of univariate ones using the L_1 metric" CNA Report 147 March 1979. University of Texas. *Proceedings of the Edinburgh Mathematical Society* 25 (1982), 173-181. MR 84k:41036.
57. "Approximating multivariate functions by combinations of univariate ones", CNA Report 148, April 1979, University of Texas. *Proceedings of the 1979 Army Numerical Analysis And Computers Conference*. MR 81A:65026
58. "Best approximation in tensor product spaces", CNA Report 151, August 1979, University of Texas. *Proceedings of the 1979 Dundee Conference on Numerical Analysis*. "Numerical Analysis" ed. by G.A.Watson. *Lecture Notes in Mathematics* Vol. 773, 25-32, Springer-Verlag, New York, 1980. MR 81i:65012.
59. With W.A.Light, "Multivariate approximation with tensor product spaces", CNA Report 153, November 1979. not published
60. With Carlo Franchetti, "Best approximation problems for multivariate functions", CNA Report 155, January 1980. *Boll. Unione Math. Ital.*(5) 18-B (1981),1003-1015. MR 83a:41023.
61. With Carlo Franchetti, "Simultaneous approximation and restricted Chebyshev centers in function spaces", CNA Report 157, May 1980. pp. 65-88 in "Approximation Theory and Applications" ed. by Zvi Ziegler, Academic Press, New York, 1981. MR 82F:41042
62. With W.A.Light, "Some best-approximation theorems in tensor-product spaces" CNA Report 165, October, 1980. University of Texas. (This paper supersedes number 58.) *Math. Proceedings of the Cambridge Philosophical Society*, 89 (1981), 385-390. MR 82D:41045
63. With J. Respass, "Best approximation problems in tensor product spaces", CNA Report 167, University of Texas, January 1981. *Pacific J. Math.* 102 (1982), 437-446. MR 84b:41030

64. With J. Respass, "Approximation problems in tensor product spaces pp. 729-734 in "Approximation Theory III", E.W.Cheney, ed. Academic Press, 1980. (This is a summary of paper # 62.)MR82B:41040
65. With M.von Golitschek, "Failure of the alternating algorithm for best approximation of multivariate functions", Report 172, Center for Numerical Analysis, University of Texas, May 1981. J. Approximation Theory, 38 (1983),139-143. MR 85b:41047.
66. With J.R.Respass, "On Lipschitzian proximity maps", CNA Report 174, July 1981, University of Texas. pp. 75-85 in "Nonlinear Analysis and Applications", edited by S.P.Singh and J.H.Burru. Lecture Notes in Pure and Applied Mathematics, Vol. 80, Marcel Dekker, Inc., New York, 1982. MR 84g:41033.
67. With W.A.Light "The characterization of best approximations in tensor product spaces". Analysis 4 (1984) 1-26.MR 86g:41048.
68. With M.von Golitschek "The best approximation of bivariate functions by separable functions", CNA Report, October 1982. pp.125-136 in "Topological Methods in Nonlinear Functional Analysis", Contemporary Math. 21(1983),125-136. (Amer. Math. Soc.) MR 85g:41033.
69. "The best approximation of multivariate functions by combinations of univariate ones", in "Approximation Theory IV", C.K.Chui, L.L.Schumaker, and J.D.Ward, eds. Academic Press, New York, 1983, pp. 1-26. MR 85k:41044.
70. With Carlo Franchetti, "The embedding of proximal sets", Center for Numerical Analysis, University of Texas, Report 183, July 1983. J. of Approximation Theory 48 (1986), 213-225. MR 87m:41037
71. With Carlo Franchetti, "Minimal projections in tensor-product spaces", Center for Numerical Analysis, Report 184, July 1983, University of Texas. J. Approximation Theory, 41 (1984),367-381. MR 86k:46019.
72. "Four lectures on multivariate approximation theory", in "Approximation Theory and Spline Functions", ed. by S.P.Singh, J.H. W. Burru, and B. Watson. I. D. Reidel Publishing Co., Boston, 1984, pp.65-88. MR 86i:41024. CNA Report 188, University of Texas. MR 86i:41024.
73. "Recent progress in multivariate approximation theory", Proceedings of the Conference On Constructive Theory Of Functions, Held in Varna, Bulgaria, May 1984. Publishing House of the Bulgarian Academy of Sciences, Sofia, 1984, pp. 208-213.
74. "Five lectures on the algorithmic aspects of approximation theory", In the proceedings of a summer workshop on numerical analysis and approximation theory held at the University of Lancaster Lancaster England, July 1984. in "Numerical Analysis Lancaster 1984", ed. by P.R.Turner. Lecture Notes in Mathematics, Vol. 1129, Springer-Verlag, New York, 1985. pp. 1-20. MR 87a:65040.
75. With M.J.D.Powell, "The differential correction algorithm for generalized rational functions". CNA Report October 1984. Constructive Approximation, 3 (1987), 249-256. MR 88i:65020.
76. "Bivariate approximation using monotone norms", in "Approximation Theory V", ed. by L.L.Schumaker, Academic Press, New York, 1986. pp. 299-302.
77. "Ill-posed problems in multivariate approximation", in Proceedings of a Conference held in Santiago Chile, December, 1986, titled "Topics in Multivariate Approximation" ed. by C.K. Chui, L.L. Schumaker, and F.I. Utreras, Academic Press, New York, 1987. pp.13-18. MR 88k:41002.
78. Book review of "Nonlinear Approximation Theory" by D. Braess, Bulletin American Mathematical Society, vol. 17, July 1987.
79. "Algorithms for approximation" pp. 67-80 in "Approximation Theory" C. de Boor, ed., Proceedings of Symposia in Applied Mathematics, Vol. 36, American Mathematical Society, 1986. MR 87m:65035.
80. with W. A. Light and M. von Golitschek, "Approximation with monotone and lattice norms" preprint, 23pp., August 1987. Journal of Approximation Theory, 68(1992), 183-205. MR 93b:41020.
81. With Nira Dyn and W.A.Light, "Interpolation by piecewise linear radial basis functions", Journal of Approximation Theory, 59 (1989), 202-223. CNA Report, University of Texas, July 1988. MR 91a:41005.
82. With W.A.Light, "Multivariate interpolation by sums of functions of fewer variables". In "Approximation Theory VI", ed. by C.K.Chui, L.L.Schumaker, and J.D.Ward. (Proceedings of the Sixth Texas International Symposium on Approximation Theory, January 6-10, 1989, College Station, Texas.) Academic Press, 1989. pp. 403-404.
83. With W.A. Light, "Interpolation by piecewise linear radial basis functions, II", Journal of Approximation Theory, 64 (1991), 38-54. MR 92c:41004.
84. With W.A.Light, "The Fix-Strang theory for functions having non-compact support", CNA Report #234, University of Texas, October 1989. Appeared in Constructive Approximation, 8 (1992), 35-48 with new title, "Quasi-interpolation with translates of a function having non-compact support". MR 93a:41027.
85. With Xingping Sun, "The fundamentality of sets of ridge functions", preprint, August 5, 1990. CNA Report #245, University of Texas. Also CAT report #224, Texas A&M University. Aequationes Mathematicae, 44 (1992), 226-235. MR 93m:41023.
86. With W.A.Light, "Interpolation by periodic radial basis functions", CNA Report 248, CAT report 228, August 1990. Journal of Mathematical Analysis and Applications, 168 (1992), 111-130. MR 93f:41039.
87. With Yuan Xu, "Interpolation by periodic radial functions", International Journal of Computers and Mathematics with Applications 24 (1992), 201-215. MR 94a:41012.

88. With Yuan Xu, "Strictly positive definite functions on spheres", preprint, February 9, 1991. Proceedings of the American Mathematical Society, 116 (1992) 977-981. MR 93b:43005.
89. "Approximation by functions of nonclassical form", Paper for the NATO Conference on Approximation Theory, Spline Functions and Applications held in Acquafredda di Maratea, Italy, April 29–May 9, 1991. In the Proceedings of the conference: "Approximation Theory, Spline Functions and Applications", S. P. Singh, ed, Kluwer Academic Publishers, Boston, 1992, pp. 1–18. MR 93b:41025.
90. With Yuan Xu and W. A. Light, "Constructive methods of approximation by ridge functions and radial functions", preprint July 24, 1991. Journal of Numerical Algorithms 4 (1993), 205–223. MR 94f:41037.
91. With Yuan Xu, "A set of research problems in approximation theory", "Topics in Polynomials of One and Several Variables and their Applications", edited by T. M Rassias, H. M. Srivastava, and A. Yanushauskas, World Scientific Publ., London, 1993, pp. 109–123. MR 95c:41001.
92. With Yuan Xu and W. A. Light, "On kernels and approximation orders", in the proceedings of the Sixth South Eastern Approximation Theory Conference: "Approximation Theory", George Anastassiou, ed., Marcel Dekker, Inc., Basel, 1992, pp. 227–242. MR 93d:41020.
93. With J. Levesley, Yuan Xu, and W. Light, "Convolution operators for radial basis approximation". SIAM J. Math. Analysis, 27 (1996), 286–304. MR 96k:41028.
94. With Junjiang Lei, "Quasi-interpolation on irregular points", in "Approximation and Computation: A Festschrift in Honor of Walter Gautschi", International Series of Numerical Mathematics, Vol. 119, Birkhäuser Verlag, Basel, 1995, 121–135. MR 96f:41028
95. "Quasi-interpolation", in "Approximation Theory, Wavelets, and Applications", S.P.Singh, A.Carbone, and B.Watson, eds., Kluwer Publ. Co., Dordrecht, 1995, 37–45. MR 96e:41001
96. "Approximation and interpolation on spheres", in "Approximation Theory, Wavelets and Applications", S.P.Singh, A. Carbone, and B.Watson, eds., Kluwer Publ. Co., Dordrecht, 1995, 47–53. MR 96e:41002
97. With Xingping Sun, "Fundamental sets of continuous functions on spheres", Constructive Approximation 13 (1997), 245–250. MR 98a:41049.
98. With R.Q.Jia and Junjiang Lei, "Approximation from shift-invariant spaces by integral operators". SIAM J. Math. Analysis, 28 (1997), 481–498. MR 98h:41026
99. "Approximation using positive definite functions", in "Approximation Theory VIII", ed. by C.K. Chui and L.L. Schumaker, World Scientific, Singapore, 1996, 145–168. MR 98e:41036.
100. With X. Sun, "Interpolation on spheres by positive definite functions", in "Approximation Theory: In Memory of A.K. Varma", edited by R.N.Mohapatra, Z.Nashed, A.Sharma, and J.Szabados. Marcel Dekker Inc., New York, 1998. 141–156.
101. (With J. Levesley), "In Memorium: William Allan Light". J. Approx. Theory, 123 (2003), 1–12.
102. (With Debao Chen, who did all the work), Lagrange Polynomial Interpolation. Proceedings of the 10th (?) Approximation Theory Conference, 2008. Edited by L. Schumaker and Mike Neamtu.

INVITED LECTURES

1. Fourth Symposium on Linear Programming, RAND Corporation, Santa Monica, California, 1959.
2. Mathematical Association of America, Santa Barbara, Spring 1961. (Hour address)
3. Colloquium, Mathematics Department, Iowa State University, November 14, 1961. Title: "Proximity maps for convex sets".
4. Colloquium, MIT Computer Science Department, 1961. Title: "Rational Approximation".
5. Colloquium, Institute for Fluid Dynamics and Computing Center, University of Maryland, 1962
6. Invited hour talk, Society for Industrial and Applied Mathematics, (SIAM) National Meeting, Boulder, Colorado, August 28, 1963. Title: "Chebyshev approximation".
7. Colloquium, Mathematics Department, UCLA, September, 1963. Title: "Abstract versions of the Chebyshev approximation problem".
8. Symposium on Approximation Theory, Gatlinburg, Tennessee, October, 1963. Title: "Generalized rational approximation".
9. Colloquium, Computer Science Department, Stanford University, April 13, 1963. Title: "Rational Approximation Problems".
10. International Symposium on Approximation of Functions, General Motors Corporation, Warren, Michigan, September 1, 1964. Title: "Generalized Rational Approximation".
11. Symposium on the Applications of Functional Analysis to Numerical Analysis, Oberwolfach, Germany, June 15–20, 1964. Title: "Applications of convexity in numerical mathematics".
12. Colloquium, Mathematics Department, Rice University November 5, 1964. Title: "Approximation by generalized rational functions".
13. Colloquium, Mathematics Department, Syracuse University, February 24, 1965. Title: "Rational approximation".

14. Colloquium, Mathematical Institute, Technical Institute of Aachen, June 23, 1964. Title: "Abstract forms of the Chebyshev approximation problem".
15. Colloquium, Mathematical Institute, University of Münster, June 25, 1964. Title: "Abstract forms of the Chebyshev approximation problem".
16. Colloquium, Mathematical Institute, Technische Hochschule München July 28, 1964. Title: "Abstract forms of the Chebyshev approximation problem".
17. Colloquium, Mathematics Department, University of Texas, September 27, 1965. Title: "Some nonlinear approximation problems in Hilbert space".
18. Colloquium, National Physical Laboratory, Teddington, England June 1966
19. Colloquium, Atomic Energy Research Establishment, Harwell, England July 21, 1966. Title: "Least squares approximation by rational functions".
20. Symposium on Numerical Analysis, Especially Approximations, Oberwolfach, Germany, November 1966
21. Colloquium, Institute for Numerical Analysis, University of Münster, Germany, November 21, 1966. Title: "The unicity problem in approximation theory".
22. Colloquium, Mathematics Department, Drexel Institute of Technology, February 24, 1967. Title: "Unicity problems in approximation theory".
23. Colloquium, Mathematics Institute, University of Karlsruhe, Germany, February 28, 1967. Title: "Unicity problems in approximation theory".
24. Colloquium, Danish Mathematical Society, University of Copenhagen, February 27, 1967. Title: "Unicity problems in approximation theory".
25. Colloquium, Mathematical Institute, University of Cologne, March 2, 1967. Title: "Unicity problems in approximation theory".
26. Colloquium, Mathematics Institute, University of Bonn, March 3, 1967. Title: "Unicity problems in approximation theory".
27. Colloquium, Mathematics Department, Royal Institute of Technology, Stockholm, Sweden, April 3, 1967. Title: "Unicity problems in approximation theory".
28. Colloquium, Mathematics Institute, Uppsala University, April 4, 1967. Title: "Least Squares approximation by rational functions".
29. Colloquium, Mathematics Department, Royal Institute of Technology, Stockholm, April 5, 1967. Title: "Least squares approximation by rational functions".
30. Colloquium, Mathematics Institute, École Polytechnique, Lausanne, Switzerland, June (22), 1967. Title: "Rational least squares approximation".
31. International Conference on Approximation Theory and its Applications, University of Lancaster, England, July 1969
32. Colloquium, Mathematics Department, Texas Christian University, December 3, 1968. Title: "Survey of approximation theory".
33. Colloquium, University of Texas at El Paso, December 9, 1968. Title: "Survey of approximation theory".
34. Colloquium, Mathematics Department, Pennsylvania State University, October 24, 1968
35. Colloquium, Mathematics Department, State University of New York, Stony Brook, April 19, 1968. Title: "Linear operators in approximation theory"
36. Colloquium, Mathematics Department, University of Utah, January 7, 1969. Title: "A Survey of Approximation Theory".
37. Colloquium, Mathematics Department, University of Utah, January 8, 1969. Title: "Minimal Projections".
38. Colloquium, University of Calgary, January 15, 1969
39. Colloquium, University of Alberta, January 16, 1969 Title: "Minimal Projections"
40. Colloquium, Lund University, Sweden, March 5, 1969. Title: "Minimal Projections"
41. Colloquium, Technological University, Delft, Netherlands, March 10 1969
42. Colloquium, Technical University, Eindhoven, Netherlands, March 11, 1969
43. Colloquium, Mathematics Centrum, Amsterdam, March 12, 1969
44. Conference on Numerical Methods in Approximation Theory, Oberwolfach, Germany, June 12, 1969
45. Colloquium, Mathematics Research Center, University of Wisconsin, December 17, 1969. Title: "Projection operators in approximation theory".
46. Colloquium, Mathematics Department, University of Illinois, February 12, 1970 Title: "Projection Operators in Approximation Theory"
47. Colloquium, Mathematics Department, Oakland University, February 24, 1970
48. Colloquium, Mathematics Department, University of Michigan, March 12, 1970.
49. Colloquium, Computer Science Department, University of Toronto, March 25, 1970.
50. Colloquium, Mathematics Department, LSU at New Orleans, April 10, 1970.
51. Colloquium, Computer Science Department, Cornell University, April 16, 1970.
52. Colloquium, Mathematics Department, University of Utah, February 18, 1971. Title: "Extremum Problems Concerning Projections"

53. International Conference on Approximation Theory, Oberwolfach, Germany, June 13-19, 1971. Title: "Extremal Problems Concerning Projections"
54. Colloquium, Mathematics Department, Kent State University April 2, 1971. Title: "Projection operators in approximation theory".
55. Colloquium, Computer Science Department, University of Montreal, April 5, 1971. Title: "Projection Operators for Approximation and Numerical Analysis"
56. Colloquium, Department of Computer Science, McGill University, April 6, 1971. Title: "Spline approximation".
57. Colloquium, Institute of Applied Mathematics, University of Bonn, June 11, 1971. Title: "Minimal Projections"
58. Colloquium, Institute of Applied Mathematics, Ruhr University (Bochum), June 22, 1971. Title: "Minimal Projections".
59. Symposium on Approximation Theory in Honor of Joseph Walsh, University of Maryland, October 1970
60. Hour address, Texas Section, Mathematical Association of America, Wichita Falls, April 17, 1971.
61. Symposium on Approximation Theory, Michigan State University, March 22, 1972.
62. Colloquium, Department of Mathematics, University of Pittsburgh, March 27, 1972.
63. Colloquium, Department of Computer Science, University of Toronto, March 28, 1972.
64. Symposium on Approximation Theory, University of Alberta, Edmonton, May 29, 1972.
65. Colloquium, Mathematics Department, Pennsylvania State University, April 1973.
66. Colloquium, Mathematics Department, East Texas State University, Commerce, Texas, April 24, 1973. Title: "Interpolation".
67. Symposium on Numerical Methods in Approximation Theory, Oberwolfach, Germany, June 9, 1973. Title: "Numerical Determination of Optimal Operators"
68. Colloquium, Mathematics Institute, Bonn University, June 19, 1973.
69. Colloquium, Mathematics Institute, Ruhr University, Bochum, June 20, 1973.
70. Colloquium, Mathematics Department, Stephen F. Austin University, February 1, 1974.
71. Colloquium, Mathematics Department, Texas A and M University February 12, 1974.
72. Colloquium, Thomas J. Watson Research Laboratories, IBM Corporation August 5, 1974. Title: "Recent Progress in Approximation Theory"
73. International Congress of Mathematicians, invited 45-minute lecture, Numerical Analysis Section, Vancouver, August 1974.
74. Colloquium, Mathematics Department, University of Calgary, February 25, 1974. Title: "Optimization of the Lagrange Interpolation Process"
75. Seminar, University of Calgary, February 26, 1974. Title: "Numerical Determination of Projection Constants"
76. Seminar, University of Calgary, February 27, 1974. Title: "An Approximation Operator of de La Vallée Poussin".
77. Colloquium, Mathematics Department, Rice University, November 1974. Title: "Minimal Projections".
78. Chairman, Special session on Approximation Theory, American Mathematical Society Meeting, Houston, November 1974
79. Symposium on Approximation Theory, University of Calgary, August 1975.
80. Colloquium, Mathematics Department, Oklahoma State University, October 23, 1975. Title: "Extremal Problems Involving Projections".
81. Symposium on Approximation Theory, University of Texas at Austin, January 1976.
82. Special session on Approximation Theory, Mathematical Association of America, meeting in College Station, Texas, April 2, 1976.
83. Colloquium, Mathematical Institute, Free University Of Berlin, June 3, 1976.
84. Colloquium, Mathematics Institute, University of Antwerp, June 1976.
85. Conference on Approximation Theory, Bonn University, June 1976
86. Colloquium, Mathematics Institute, University of Florence, July 21, 1976
87. Colloquium, Mathematics Institute, Florence, July 22, 1976
88. Colloquium, Mathematics Institute, Florence, July 23, 1976
89. Colloquium, Mathematics Institute, University of Perugia, July 1976.
90. Symposium on Fourier Analysis, Academy of Science, Budapest, August 1976.
91. Special Session on Approximation Theory, Winter meeting, American Mathematical Society, St. Louis, January 1977.
92. Colloquium, Mathematics Department, University of California at Riverside, April 21, 1977.
93. Conference on Approximation Theory, University of California at Riverside, April 22, 1977.
94. Symposium on Approximation Theory, University of Durham, England July 1977.
95. Conference on Linear Spaces and Approximation Theory, Oberwolfach Germany, August 1977.
96. Colloquium, Mathematics Department, University of Lancaster, England, June 1978.
97. Colloquium, Mathematical Institute, University of Edinburgh, June 26, 1978.
98. Colloquium, Mathematics Department, Texas A & M University, April 28, 1978.
99. Colloquium, Mathematics Department, Stephen F. Austin University, October 1978.
100. Third Conference of Army Mathematicians, El Paso, Texas, February 14-16, 1979.
101. Colloquium, Mathematics Department, University of Arkansas, February 25, 1979.

102. 1979 Dundee Conference on Numerical Analysis, June 26-29, 1979.
103. Conference on Approximation Theory, Northwestern University, Evanston, Illinois, October 25-26, 1979.
104. Colloquium, Kent State University Mathematics Department, May 2, 1980 Title: "Global Approximation, Simultaneous Approximation, Optimal Recovery and Chebyshev Centers"
105. Lecture, Conference on Numerical Analysis, Kent State University, May 3, 1980. Title: "Approximating Functions of Several Variables by Functions of One Variable"
106. Colloquium, Mathematics Department, Pennsylvania State University, May 6, 1980. Title: "Approximating Multivariate Functions by Combinations of Univariate Ones"
107. Lecture, Workshop in Approximation Theory, Technion, Haifa, Israel. June 4, 1980.
108. Lecture, Workshop in Approximation Theory, Technion, Haifa, Israel. June 10, 1980.
109. Lecture, Workshop in Approximation Theory, Technion, Haifa, Israel, June 18, 1980.
110. Two lectures, Research Initiation Workshop, sponsored by Atlanta University and the U.S. Army Office of Research. Atlanta, August 27-29, 1980.
111. Colloquium, Mathematics Department, University of Toronto, April 23, 1981. Title: "Approximating Multivariate Functions by Combinations of Univariate Ones."
112. Lecture in Conference on Nonlinear Analysis and Applications, St. John's, Newfoundland, June 2, 1981.
113. Two lectures, Summer School for Numerical Analysts, University of Lancaster, Lancaster, England, August 3 and 6, 1981.
114. Lecture, International Symposium on Semi-infinite Programming and Applications, Austin, Texas, September 9, 1981.
115. Colloquium lecture, Mathematics Department, Memorial University St. John's, Newfoundland, March 26, 1982.
116. Colloquium lecture, Mathematics Department, Dalhousie University, Halifax, Nova Scotia, March 29, 1982.
117. Lecture, Second Edmonton Conference on Approximation Theory, June 6-11, 1982.
118. Lecture, special mini-symposium on tensor product spaces, National SIAM Conference, Stanford, California, July 1982.
119. Lecture, Special Session on Fixed-Point Theory and Applications, summer meeting of the American Mathematical Society, Toronto, Canada, August 23-27, 1982.
120. Lecture, 13th Annual USL Mathematics Conference, University of Southwestern Louisiana, October 22-24, 1982
121. Lecture, International Conference on Approximation Theory, Texas A & M University, January 10-14, 1983.
122. Colloquium, Mathematics Department, University of Delaware, February 25, 1983.
123. Four lectures, NATO Advanced Study Institute on Approximation Theory, Memorial University, St. John's, Newfoundland, August 22-September 2, 1983.
124. Colloquium lecture, Mathematics Department, Ohio State University Columbus, Ohio, October 21, 1983.
125. Colloquium Lecture, Mathematics Institute, University of St. Andrews St. Andrews, Scotland March 1, 1984. Title: "Approximating Multivariate Functions".
126. Undergraduate lecture, University of St. Andrews, St. Andrews, Scotland, March 2, 1984 Title: "Rational Functions and Continued Fractions"
127. Colloquium Lecture, Brunel University, Mathematics Department, Uxbridge, England, March 14, 1984.
128. Colloquium lecture, Mathematics Department, Lancaster University, Lancaster, England, April 2, 1984.
129. Colloquium lecture, Computing Laboratory, Oxford University, Oxford, England, May 3, 1984.
130. Lecture, International Conference on Constructive Theory of Functions, Varna, Bulgaria, May 27, 1984.
131. Series of ten lectures, Mathematics Department, Jilin University, Changchun, China. July 5-26, 1984.
132. Series of five lectures, Workshop on Numerical Analysis, University of Lancaster, Lancaster, England, July 30 - August 3, 1984.
133. Lecture, Conference on Nonlinear Analysis, Fixed-point Theory, and Approximation Theory, Memorial University, St. John's, Newfoundland, August 6, 1984. Title: "Algorithms for Multivariate Approximation"
134. Colloquium, Mathematics Department, University of Alaska, November 1, 1984.
135. Series of ten lectures, CBMS Regional Conference on Approximation Theory and Numerical Analysis, University of Alaska, June 10-14, 1985.
136. Short lecture, International Conference on Approximation Theory, Texas A & M University, January 1986.
137. Lecturer in AMS Short Course held at the AMS Annual Meeting, New Orleans, January 1986.
138. Short lecture, Conference on Constructive Theory of Functions, University of Alberta, Edmonton, Canada, July 1986.
139. Lecture at International Conference on Approximation Theory, Santiago, Chile, January, 1987.
140. Colloquium Lecture, Naval Post Graduate School, Monterey, California, April 22, 1987.
141. Lecture in special session on Total Positivity, American Mathematical Society Annual Meeting, Atlanta, Georgia, January 1988
142. Lecture at Oberwolfach Conference on Approximation by Functions which are Solutions of Differential Equations. May 9-15, 1988
143. Colloquium, Mathematics Department, University of Würzburg, Germany, May, 1988.
144. Lecture at Israel-US Binational Conference on Approximation Theory, Academy of Sciences, Jerusalem, May 22-29, 1988.

145. Colloquium, Mathematics Department, Memphis State University, November 4, 1988.
146. Colloquium, Mathematics Department, Texas A&M University, December 1, 1988. (Inaugurating the “Chebyshev Lecture Series”)
147. Short lecture, Sixth Texas International Symposium on Approximation Theory, Texas A&M University, January 6, 1989.
148. Colloquium, Department of Mathematics, Rensselaer Polytechnic Institute, May 9, 1989.
149. Lecture, North of England Numerical Analysis Colloquium, Lancaster University, June 2, 1989.
150. Colloquium, Department of Information Science, Tsukuba University, Tsukuba, Japan, June 22, 1989.
151. Colloquium, Mathematics Department, Kyoto University, Kyoto, Japan, June 27, 1989.
152. Colloquium, Faculty of Engineering, Tokyo University, Tokyo, Japan, June 29, 1989.
153. Colloquium, Ricoh Corporation, Software Research Division, Tokyo, Japan, June 30, 1989.
154. Colloquium (The Robert Todd Gregory Memorial Lecture), Mathematics Department, University of Tennessee, Knoxville, Tenn., October 25, 1989.
155. Colloquium, Mathematics and Computer Sciences Department, North Dakota State University, Fargo, May 11, 1990. Title: Interpolation: Past and Present.
156. Invited lecture, Southeast Approximation Theory Conference, Memphis State University, Memphis, March 14-16, 1991.
157. Invited talk, Special Session on Approximation Theory, American Mathematical Society Meeting, Tampa, Florida, March 22-23, 1991.
158. Series of 4 lectures, NATO Advanced Study Institute on Approximation Theory, Spline Functions, and Applications, held in Acquafredda di Maratea, Italy, April 29—May 9, 1991.
159. Colloquium, Department of Applied Mathematics and Theoretical Physics, Cambridge University, May 16, 1991.
160. Invited talk, Special Session on Approximation Theory, American Mathematical Society meeting, Springfield, Missouri, March 20, 1992.
161. Colloquium, Department of Mathematics, U.S. Naval Academy, April 5, 1993.
162. Invited hour lecture, Symposium in Honor of Walter Gautschi, Purdue University, December 2-4, 1993.
163. Colloquium lecture, Southwestern Missouri State University, Springfield, Mo., April 14, 1994.
164. Two lectures at NATO Advanced Study Institute on “Recent Developments in Approximation Theory”, Acquafredda, Maratea, Italy, May 16-26, 1994.
165. Hour lecture, Eighth International Conference on Approximation Theory, College Station, Texas, Jan. 9, 1995.

INVITATIONS THAT COULD NOT BE ACCEPTED

1. Conference on Numerical Approximation, Canterbury, England. 1967
2. Conference on Numerical Analysis, Cornell University, 1968
3. Conference on Constructive Theory of Functions, Varna, Bulgaria. 1970
4. Conference on Numerical Methods in Approximation, Oberwolfach, 1975.
5. Conference on Theory of Approximation, Kalouga, USSR July 1975
6. Conference on Multidimensional Constructive Function Theory, Oberwolfach, Germany, 1976.
7. Conference on Constructive Function Theory, Blagoevgrad, Bulgaria, June 1977.
8. International Conference on Function Spaces and Approximation, Mathematical Institute, Polish Academy of Science, Gdansk, Poland, August 20-28, 1979.
9. International Conference on Functions, Series, and Operators Commemorating the 100th Anniversary of the Births of Leopold Féjer and Frederick Riesz, Budapest 21-30 August, 1980
10. Conference organized by P. Butzer on Functional analysis and Approximation Theory, Oberwolfach, August 1980.
11. Colloquium, University of Oregon, November, 1980
12. Colloquium, University of Washington, November, 1980
13. Oberwolfach Conference on Approximation Theory organized by DeVore and Berens, November 1981.
14. Oberwolfach Conference on Multidimensional Approximation, organized by Zeller and Schempp, February 1982.
15. International Seminar on Spline Theory and Applications, University of Jabalpur, India. 1982.
16. Conference on Parametric Optimization and Approximation, Mathematics Research Institute, Oberwolfach, Germany, 16-22 October 1983.
17. 2nd International Symposium on Orthogonal Polynomials and their Applications, Segovia, Spain, September 1986.
18. Oberwolfach Conference on Numerical Methods of Approximation Theory, organized by Collatz, Meinardus and Nuernberger, September 1986.
19. Conference on Trends in Functional Analysis and Approximation Theory, in Acqua Fredda di Maratea, Italy, September 11-15, 1989.
20. International Workshop on Multivariate Approximation and Interpolation, Duisburg, Germany, August 14-18, 1989.
21. U.S.—U.S.S.R. Conference on Approximation Theory, Tampa, March 19-24, 1990.

22. International Symposium on Computational Mathematics, Ehime University, Matsuyama, Japan, August 30-September 4, 1990.
23. Conference on Functional Analysis, Holomorphy and Approximation Theory, Campinas, Brazil, July 23-27, 1990.
24. International Conference on Approximation Theory, Kecskemet, Hungary, August 5-11, 1990.
25. Special Section on Approximation Theory, International Association for Mathematics and Computers in Simulation, World Congress, Dublin, July 22-26, 1991.
26. Second International Conference on Functional Analysis and Approximation Theory, Acquafredda di Maratea, Italy, Sept. 14- 19, 1992.
27. First International Conference on Numerical Analysis, Plovdiv, Bulgaria, 13-17 August 1992.
27. Second International Colloquium on Numerical Analysis, Plovdiv, Bulgaria, 13-17 August, 1993
(There were many others I didn't keep a record of.)

FELLOWSHIPS, PRIZES, HONORS, GRANTS

1. Research grants from U. S. Air Force , 1962-1964, 1965-1966, 1966-1967, 1967-1968, 1968-1969, 1969-1970, 1970-1971,1971- 1972,1972-1973, 1973-1974, 1974-1975.
2. Invited hour lecture, Society for Industrial and Applied Mathematics (SIAM), Denver, 1963
3. Research grant from U. S. Army Office of Research, 1977-1979.
4. Invited lecturer, International Congress of Mathematicians, (ICM) Vancouver, 1974. (45-minute lecture in section on Numerical Methods.)
5. SIAM Lecturer, 1968-1969.
6. Senior visiting fellowship grant from British Scientific Research Council, June 1977
7. Research grant from British Scientific Research Council, summer, 1978.
8. Research grant from Italian Council on Scientific Research, summer 1976.
9. Grant (\$ 69,000) from NSF for 1963 Summer Institute, UCLA.
10. Grant, NSF, 1975-1976 (for personal research).
11. Grant, NSF, 1979-1980 for International Conference on Approximation Theory. (\$ 11,000) Conference held in Austin, January, 1980. (This conference was in honor of Professor G.G. Lorentz's 70-th birthday.)
12. Grant, to W.A.Light, from the Scientific Research Council of Great Britain, summer, 1981, for my travel and salary.
13. Grant, U.S.Army, 1980-1982, \$ 45,000.
14. University of Texas URI grant, Spring term, 1984.
15. British SERC grant, as in item 11 above, Spring term, 1984.
16. British SERC grant, as in item 11 above, Summer, 1985.
17. British SERC Grant, as in item 11 above, Summer, 1986. note:SERC = Scientific and Engineering Research Council
18. Grant from the International Information Science Foundation (400,000 yen) for lectures in Japan, Summer, 1989.
19. University of Texas, URI grant, summer, 1989.
20. Senior Visiting Research Fellow, June and July 1990, Lancaster University, UK. (SERC Grant as in item 11 above)
21. Senior Visiting Research Fellow, (SERC Grant as in item 11 above), Summer, 1991.
22. National Science Foundation grant (\$ 12,000) for the Seventh Texas Conference on Approximation Theory in Austin, January 3-7, 1992.
23. 65-th Birthday honoree, International Conference on Approximation Theory, College Station, Texas, Jan. 8-12, 1995.

OTHER PROFESSIONAL ACTIVITY

1. Membership, American Mathematical Society
2. Membership, Mathematical Association of America
3. Membership, Society for Industrial and Applied Mathematics
4. Formerly, regular reviewer, Mathematical Reviews (up to 1988)
5. Formerly, regular reviewer, Zentralblatt für Mathematik (up to 1984)
6. Referee for numerous journals, e.g., Transactions of the American Mathematical Society, American Journal of Mathematics, Aequationes Mathematicae, Mathematics of Computation, Proceedings of the American Mathematical Society, Pacific Journal of Mathematics, Nordisktidsskrift for Informationsbehandling, Canadian Journal of Mathematics, American Mathematical Monthly, Constructive Approximation, Illinois Journal of Mathematics, SIAM Journal on Numerical Analysis, Journal of Approximation Theory, Communications in Applied Numerical Methods.
7. Organizing committee, International Conference on Approximation Theory, University of Texas, January 1973.

8. Organizing committee, International Conference on Approximation Theory, University of Texas, January 1976.
9. Organizer, International Conference on Approximation Theory, January 1980. (held at U.T.)
10. Member of International Panel to Select Speakers at the International Congress of Mathematicians, Vancouver, 1974.
11. Consultant, University of Texas at Dallas (on organization of the mathematics department.)
12. Listing, American Men of Science
13. Listing, Who's Who in America.
14. External examiner for Ph.D. degrees: Canada, Australia, Belgium, India, Saudi Arabia.
15. Referee for grant proposals: NSF, Air Force Office of Scientific Research, Army Research Office, Canadian National Research Council, Conference Board of the Mathematical Sciences.
16. "Outside Evaluator" for the graduate program in the Division of Mathematics, Computer Science, and Systems Design, University of Texas at San Antonio, April 6-7, 1982.
17. Chinese University Development Project Specialist, July 1-30, 1984. (I was sent to Jilin University in Changchun to lecture and consult on the development of the Mathematics Department there.)
18. CBMS Regional Conference, principal lecturer, June 1985, Fairbanks, Alaska.
19. Consultant to Auburn University administration on the Department of Algebra, Combinatorics, and Analysis. Four days in March, 1988.
20. Organizing committee, International Conference on Approximation Theory, (held in Austin, January 1992.)

EDITORIAL RESPONSIBILITIES ON JOURNALS

1. Associate Editor, Journal of Approximation Theory (1968-)
2. Associate Editor, SIAM Journal on Numerical Analysis. (1964-1975)
3. Associate Editor, Numerical Functional Analysis and Optimization , (1979-)
4. Associate editor, Journal of Mathematical Analysis and Applications (1991-1997).
5. Associate editor, Applied Analysis and Stochastics, (1991-). Journal ceased publication.
6. Associate Editor, Mathematics of Computation, (1992-1997).
7. Associate Editor, Pan American Mathematical Journal, (1994-).
8. Associate editor, Communications in Applied Analysis, (1994-).
9. Associate Editor, Journal of Interdisciplinary Mathematics, (1997-).
10. Associate Editor, International Journal of Mathematics and Computer Science. (2005-)

PH.D. STUDENTS

1. Barry W. Boehm (UCLA, 1964), "Existence, Characterization and Convergence of Best Rational Tchebycheff Approximations" (Boehm is on the scientific staff of the RAND Corporation.)
2. Daniel Eliot Wulbert (UT 1966), "Continuity of Metric Projections; Approximation Theory in a Normed Linear Lattice" (Wulbert is Professor of Mathematics, University of California, San Diego.)
3. Yasuhiko Ikebe (UT 1966), "A Study of Operators in Approximation Theory" (Ikebe was Professor and Chairman of the Department of Computer Science, Tsukuba, Japan. He then became vice president of the University of Aizu in Tsuruga, Japan.)
4. Johnnie Warren Baker (UT 1968), "Some Uncomplemented Subspaces of $C(X)$ of the Type $C(Y)$ " (Baker is Professor of Mathematics at Kent State University.)
5. Robert William Varga (UT 1968), "On the Beta-Topology on $C(X)$ " (Varga is, I think, Professor of Mathematics at Bucknell University.)
6. Bill Delano Anderson (UT 1970), "Extensions and Projections in Spaces of Continuous Functions" (Anderson works in industry in the Dallas area.)
7. Kenneth Hugh Price (UT 1970), "Projections and Approximation in a Normed Linear Space" (Price is Associate Professor of Mathematics at Stephen F. Austin University.)
8. Theodore Albert Kilgore (UT 1974), "Optimization of the Lagrange Interpolation Process" (Kilgore is Professor of Mathematics at Auburn University.)
9. Joonsook Kang (UT 1989), "Condition Number of an Interpolation Matrix" (Kang is at a University in Korea.)
10. Xingping Sun (UT 1990), "Multivariate Interpolation Using Ridge or Related Functions". (Sun is a Professor at Southwest Missouri State University.)
11. Valdir Menegatto (UT 1992) "Interpolation on Spherical Spaces". Menegatto is on the faculty of a university in Brazil.
12. Kuei-Fang Chang, "Wavelet Analysis on Hilbert Spaces". (UT 1993) Chang is on the faculty of a university in Taiwan.
13. Debao Chen, "Cardinal Spline Wavelets", (UT 1994). Chen is on the faculty of Oklahoma State University in Tulsa.
14. Sung Sik Yun (UT 1995) "The Fundamentality Problem for Translates of Continuous Functions"

15. Nahmwoo Hahm, (UT, 1996) “Degree of Approximation by Neural Networks”.
16. Zuoshun Zhang, (UT 2000) “Proper posterior distributions for some hierarchical models and roundoff effects in the Gibbs Sampler”. (co-supervisor: Edward I. George)
17. Mihaela Dobre Pal, (UT, 2003), “Theory of Principal Component Filter Banks with Applications to Multicomponent Imagery.” Co-supervisor, Christopher Brislawn.

MASTERS DEGREE STUDENTS

1. E. Barbara Taucci (Iowa State University. 1962), “Condition Numbers of Certain Matrices”
2. Larry Bokn (UT, 1965), “Continuity of Parameters in Approximation Problems”
3. Stig Nord (Lund University, 1967), “Approximation Properties of the Spline Fit”
4. Michael Smith (UT, 1974), “A Comparison of Three Quadrature Methods”
5. Myrick Dean Crampton (UT 1986), “Numerical Solutions of the Navier-Stokes Equations”.
6. Sherry Lau (UT 1986), “Approximation of a Bivariate Function by a Separable Function of Rank n ”.
7. Timothy Bruce Killam (UT 1988), “Relative Chebyshev Centers”.
8. Birgit Merz (UT 1988), “Analysis of a Non-Linear Boundary-Value Problem”.
9. Kathleen Helen Rendek, “On Numerical Solutions to a Particular Problem in Optimal Control” (UT 1988)
10. Richard Rodenbusch (in progress)
11. Endang Sumartinah (UT 1988), “The Matrix Equation $AX + XB = C$ and its Applications”.
12. William Paul Nanry (UT 1989), “Select Ordering Techniques used in Conjunction with the Preconditioned Conjugate Gradient Method” (Dr. Kincaid actually supervised; I was the supervisor of record.)
13. Stanley George Kubicek (UT 1989), “Two Tests on the Optimal Nodes in Polynomial Interpolation”.
14. Zhi Zhao “A Study on Solving Algebraic Equations by Calculating Eigenvalues of the Companion Matrix”, May 1990.
15. Changning Zhang, “Numerical Evaluation of Radial Functions” (December 1989)
16. Irina Mukherjee, “A Report on Tension Splines”. (December 1989)
17. Brian Michael McKeon, “The Approximation Properties of Universal Functions”, September 1991.
18. Kam Shing Sun, “Remes’ Second Algorithm for Rational Approximation”, May 1991.
19. Robert Alan Begin, “A Parameter Study of Hardy’s Multiquadric Method for Scattered Bivariate Data Interpolation”, December 1990.
20. Kenneth James Gallia, “A Summary of Jarausch and Macken’s Paper: Solving Large Nonlinear Systems of Equations by an Adaptive Condensation Process”, August 1991.
21. Julio Lopez, “Box Splines”, November 1991.
22. Thao Paul Brown, “Performance Analysis of Shared-Memory Multiprocessor Computer Systems”, October 1992.
23. Chiou-Yueh Gun, “Least Absolute Deviations”, August 1993.
24. Hsueh-Ru Tsai, “Fitting a Straight Line to Data”, May, 1994.
25. Yu-Heng Fu, “Spline Functions”, August, 1994.
26. Michelle West, Summer, 1995. “The Numerical Inversion of Laplace Transforms”.
27. Yu-Pang Tang, Spring, 1995. “Stability of Asynchronous Service Queues”
28. Yung-Ming Chang, “Interpolation by Shepard’s Method”, August 1996
29. Yung-Yao Shen, “The Approximation Property for a Pair of Banach Spaces”, August 1996
30. Mutsumi Nakamura, “On the Universal Approximation Property Neural Networks”, August 1996
31. Zong-Tsang Lin, “On the Attracting Set of the Duffing Equation”, November 1996.
32. Mario Leonardo Garcia, “Terrain Modeling with Natural Neighbor Interpolation”, December 1996.
33. Ji Soo Ham, July, 1997.
34. Il Won Chun, December 1997. “Algorithms for Solving Tridiagonal Systems in Parallel”.
35. Sudhakar Achath, “Applications of the Fourier Transform” May 1998.

POST-DOCTORAL STUDENTS

1. Dr. Frans Schurer (Eindhoven) NATO Fellow (academic year 1967–1968)
2. Dr. Marie-Jeanne Munteanu (Belgium) (academic year 1970–1971)
3. Dr. Carlo Franchetti (Florence) NATO Fellow (academic year 1974–1975)

PH.D. COMMITTEE SERVICE

Wayne Joubert, John Semple, Li Sun, Zhimiu Huang, Thomas Oppe, Gordon Clark, Mark Bachman, Bi Vona, Kui-yu Chang (Electrical Engineering), Miguel A. Lerma (Mathematics), Darrin B. Visarraga (Mathematics), Jeffrey T. Barton, (Mathematics), Carlos A. Duarte (Engineering Mechanics), Jen-Yuan Chen (Mathematics), Randall

D. Paul (Mathematics), Louise Cheung (Pharmacy), Hsien-Chung Wu (Industrial Engineering), Ajit Dingankar (Electrical Engineering), Randall David Paul, (many others—no records kept.)

December 31, 2012