

Biographical Data

Name: William Rundell
Place of Birth: Glasgow, Scotland.
Citizenship: U.K. and U.S.
Marital Status: Married to Linda Rundell, three children.

Education:
Allen Glen's High School of Science, Glasgow, 1961 - 1967.
B.Sc. (Hons) Mathematics & Natural Philosophy, Glasgow University 1971.
Ph.D, Glasgow University 1974.

In the Profession:
1990-present, Professor of Computer Science, T.A.M.U.
1987-present, Professor of Mathematics, T.A.M.U.,
2002-2006, Director, Division of Mathematical Sciences, NSF.
1980-1987, Associate Professor, Texas A&M University,
1974-1980, Assistant Professor, Texas A&M University,
1973-1974, Teaching Assistant, Indiana University,
1971-1973, Postgraduate Fellowship, Glasgow University,

Society Memberships:
American Mathematical Society
Society for Industrial and Applied Mathematics
Fellow, Institute of Physics (UK).

Administrative Positions Held.

2002 - 2006. Director, Division of Mathematical Sciences, National Science Foundation.

This position directed the activities of the broadly-defined mathematical sciences and entailed membership of the senior leadership group for the directorate of Mathematical and Physical Sciences. The division had 25 program officers and an annual budget of over \$200M. This figure represents approximately eighty percent of the available federal research funding for the discipline and a major part of the position entails interactions with the broader academic mathematical sciences community.

1991 - 2002. Head, Department of Mathematics, Texas A&M University.

The Department had a total faculty size of 120, over 100 graduate students and 350 undergraduate majors. There were 20 administrative and technical staff. Total S&E budget was over \$10M and research expenditures were approximately \$3M per year with the majority of these funds coming from NSF.

1983 - 1985. Directed the Texas A&M University Honors Program.

The enrollment was 2,000 students; responsible for initiating the current system of a degree with University Honors based on a curriculum as opposed to only a grade point requirement.

Teaching and Other Awards

Texas A&M University, College of Science Student Council *Teaching Excellence Award* (1979).

Texas A&M University, The Association of Former Students *Distinguished Teaching Award* (1982). This award included a prize for \$4000.

Texas A&M University *Honors Program Scholar Award* (1985). This award was for teaching and service in the Honors Program, and consisted of a grant of \$5000.

National Science Foundation "Director's Award for Meritorious Service," 2005.

Selected Service Activities

Director, Division of Mathematical Sciences, National Science Foundation, September 2002 - 2006.

Head, Department of Mathematics, Texas A&M University, 1992 - 2002.

Directed the University Honors Program (1983–1985).

Elected charter member of the Texas A&M Faculty Senate (1983–1986).

Member, University Core Curriculum Development Committee (1983–1985).

Chair of the Texas A&M University Senate Academic Affairs Committee (1985–1986).

Organiser, Texas Partial Differential Equations Meeting, College Station; 1980, 1985.

Chair, Joint AMS, SIAM, IMS Conference Series, *Inverse Problems in Partial Differential Equations*, held in Arcata, California, July 1989. Conference was funded by NSF and ARO

Organiser, International Conference on *Inverse Problems: Computational Algorithms*, March 1991, in College Station, Texas. Conference was funded by AFOSR, NSF, ONR, and Texas A&M University.

Conference Organising Committees: recent activities include; *Lapland Conference on Inverse Problems*, Saariselka, Finland (conference was funded by the Finnish Academy and NSF), *Inverse Problems in Waves and Scattering*, September 1996, Aix-les-Bains, France.

Co-Chair SIAM/GAMM international conference series on *Inverse Problems and their application*: St Wolfgang, Austria 1994, Yosemite, Ca, 1995, Oberwolfach, Germany 1996. There is a book series connected with these conferences.

Chair, AMS, SIAM AND IMS. Joint Conference Series, *Methods for Mathematical Inverse Problems*, held in MT Holyoke, Mass., July 1998.

Computational and Applied Inverse Problems, Lake Arrowhead, May 2003. Co-chair with J. McLaughlin; funding from IPAM, SIAM, EMS.

Mathematisches Forschungsinstitut Oberwolfach; *Inverse Scattering and Impedance Tomography*, April 2003, March 2007 (with M. Hanke and A. Kirsch).

Member or Chair of many search committees including: head searches in the departments of Chemistry, Statistics and Physics; endowed chair in education. Dean searches: Colleges of Science, Engineering

Mathematics department program reviews: University of Oklahoma, 1997; University of Alberta, 1999.

Numerous NSF panels and members of site visit teams for both research and infrastructure.

NSF Committee of Visitors, DMS, 2001.

Member, Scientific Advisory Board, Radon Institute, Linz, (2002 -).

Thesis advisor to *University Undergraduate Fellows Thesis Prize* winner. TAMU 1983.

Ph. D. Students: Lester Caudill, Ph.D. Mathematics, Texas A&M University, 1992 (Now: Professor, University of Richmond.) [Made a decision not to take on students while on full-time administration, although I mentored several now-successful postdocs during this period.]

Editorial Boards:

Mathematical Population Studies, (1992-1996).

Inverse Problems, (1993 - 2008).

Inverse Problems in Imaging, (2006 - 2009).

Articles on scientific public policy

1. *A Wealth of Potential but an Uncertain Future: Today's Mathematics Departments*," Notices, American Mathematics Society, April 1997.
2. *NSF Fiscal Year 2004 Budget Request*, Notices, American Mathematics Society, August 2004.
3. *The Mathematical Science Institutes*," Notices, American Mathematics Society, October 2005.
4. *"Interview with William Rundell"*, Notices, American Mathematics Society, February 2007.

Numerous talks on science and mathematics policy to professional societies, agencies and organisations, both within the US and internationally; 2002 - present.

External Grants

Research in Inverse Problems

NSF/AFOSR "Inverse problems for elliptic and parabolic equations," DMS-8701338, July 1987 to January 1990, \$48,000. Michael Pilant, co-PI.

Office of Naval Research: "Undetermined coefficient problems for quasilinear parabolic equations" ONR. N00014-89-J1008, January 1989 to January 1992, \$176,000.

National Science Foundation: "Various problems concerning the determination of coefficients in differential equations" DMS-8901763, June 1989 to June 1992, \$90,800. Michael Pilant, co-PI.

Department of Energy, "Partnerships in Computational Science," 1992-1994 (large multi-disciplinary grant with many co-Principal Investigators).

National Science Foundation: "Multidimensional Reconstruction Methods for Inverse Problems," DMS-9202352, \$162,531, June 1992 to June 1995,

National Science Foundation: "Reconstruction Methods for Inverse Problems in Multiple Dimensions," DMS-9501030, \$52,437, June 1995 to June 1998.

National Science Foundation: "New Mathematics in Innovative methods for the Valuation of Options," DMS-9706985, (Richard Ewing and Junping Wang co-PIs). June 1997 to June 2000, \$75,000.

National Science Foundation: "Various Inverse Problems in Partial Differential Equations and Methods for their Solution", DMS-9906985, June 1999 to June 2002, \$72,900.

National Science Foundation: "Reconstruction algorithms for inverse obstacle problems", DMS-0715060, July 2007 to July 2010, \$260,500.

Infrastructure Grants: National Science Foundation

National Science Foundation: "U.S.-Tunisia Co-operative Research", PI, INT 0002195, July 2000, \$30,000.

VIGRE Lead PI, NSF VIGRE grant, 2000-2005, \$2,252,000 "Department-wide Infrastructure: Widening the Pipeline for Mathematical Sciences",

Equipment Grants: National Science Foundation

“Mathematical Sciences Research Equipment, (SCREMS”): DMS–8604640, \$49,500 + \$25,000 matching; *Co-PI*; DMS–8804590, \$45,000 + \$45,000 matching, DMS–9103519, \$48,695 + \$45,000 matching, DMS–9707930, \$65,000 + \$65,000 matching, all *Principal Investigator*:

“Major Research Instrumentation,” Lead *Principal Investigator*, 2002; \$405,000 plus \$200,000 university match.

Conference Funding Grants

“Conference on Inverse Problems” NSF DMS–9015637 with AFOSR, (\$16,000), ONR \$5,000. \$9,000 University matching.

Chair, A.M.S., S.I.A.M. AND I.M.S. Joint Summer Conference series in *Inverse Problems in Partial Differential Equations: solution methods*, Mount Holyoke, Mass. 1998. \$25,000 through AMS.

Note: On assuming the NSF position in 2002 all active projects were turned over to other investigators.

Extended Research Visits

July 1985, Summer Workshop on Inverse Problems, Cornell University.

May-June 1992, Gastprofessor, Johannes Kepler University, Linz, Austria.

June 1993, Universität Erlangen, Germany

June-July 1993, 1995, 1997, 1999, 2002, 2004, 2007 Gastprofessor, Universität Göttingen, Germany.

June 1994, Invited lecturer University of Oulu, Finland.

Institute for Mathematics and its Applications: February 1995; April 2002.

Mathematical Sciences Research Institute: August 2001, November 2001.

Talks and Colloquia

March 1976, *Special Session on Pseudoparabolic Equations*, AMS, in Urbana, Illinois.

March 1977, Texas P.D.E. Meeting, Austin Texas.

April 1980, Texas P.D.E. Meeting, Austin Texas.

November 1981, *Special Session on Inverse Problems*, AMS, Austin Texas.

July 1983, Hour talk, conference on *Inverse Problems and Computation*, Cornell, University.

January 1984, *Special Session on Inverse Problems*, AMS, Louisville, Kentucky.

January 1985, Colloquium, Brigham Young University.

June 1985, Conference on *Cryptography*, M.I.T.

May 1986, Hour talk, Mathematisches Forschungsinstitut, Oberwolfach.

October 1986, Colloquium, University of Maryland.

October 1986, Colloquium, University of Delaware.

November 1986, Colloquium, Rensselaer Polytechnic University.

February 1986, Colloquium, College of William and Mary.

March 1987, Conference on *Nonlinear Partial Differential Equations*, Provo, Utah.

April 1987, S.I.A.M. sectional meeting, Austin, Texas.

May 1987, Conference on *Nonlinear Diffusive Waves*, Snowbird, Utah.

October 1987, Colloquium, University of Houston.

February 1988, Colloquium, Iowa State University.
July 1988, Tenth Dundee Conference on Differential Equations, Dundee, Scotland.
December 1989, Conference on *Inverse problems*, Montpellier, France.
February 1990, Colloquium, University of Houston.
March 1990, *Special Session on Inverse Problems*, AMS, Manhattan, Kansas.
April 1990, *Special Session on Invariant Embedding and Inverse Problems*, A.M.S. and S.I.A.M. Albuquerque, New Mexico.
October 1990, Colloquium, Brigham Young University.
November 1990, *Special Session on Differential Equations*, AMS, Denton, Texas.
June 1991, *Special Session on Inverse Problems*, AMS, Portland, Oregon.
June 1991, *Minisymposium on Inverse Problems*, International Congress of Industrial and Applied Mathematics, Washington D.C.
February 1992, Colloquium, Field Institute, Waterloo, Canada.
February 1992, Colloquium, University of Toronto, Toronto, Canada.
May 1992, Invited Lecture Series, Johannes Kepler University, Linz.
June 1992, Hour talk, *Lapland Conference on Inverse Problems*. Saariselka, Finland.
June 1992, Plenary Talk, *Twelfth Dundee Conference on Differential Equations*, Dundee, Scotland.
July 1992, Hour talk, A.M.S., S.I.A.M. AND I.M.S. Joint Summer Conference series in *Control in Partial Differential Equations*, Mount Holyoke, Mass.
July 1992, *Special Session on Inverse Problems*, S.P.I.E National Meeting, San Diego, Ca.
April 1993, Colloquium, University of Southern Louisiana, Louisiana.
June 1993, Guest lecturer, Universität Erlangen-Nürnberg.
June 1993, Colloquium, Johannes Kepler Universität, Linz.
July 1993, Guest lecturer, Universität Göttingen.
August 1993, Hour talk, IIASA workshop: *Modelling of Environmental Dynamics*, Sopron, Hungary.
October 1993, *Special Session on Partial Differential Equations*, AMS, College Station, Texas.
December 1993, Hour talk, workshop on *Methoden und Verfahren der Mathematischen Physik*, Mathematisches Forschungsinstitut, Oberwolfach.
January 1994, *Special Session on Nonlinear Partial Differential Equations*, AMS, Cincinnati, Ohio.
March 1994, *Special Session on Inverse Spectral Problems*, AMS, Lexington, Kentucky.
April 1994, Invited hour talk, *Eighteenth Annual Lecture Series in the Mathematical Sciences*, University of Arkansas, Fayetteville, Arkansas.
June 1994, Invited lecturer (10 hour talks), *Inverse problems*, University of Oulu, Finland.
June 1994, Colloquium, University of Lund, Sweden.
February 1995, Hour talk, Institute for Mathematics and its Applications, Minneapolis, Minnesota.
March 1995, *Special Session on Inverse Problems*, AMS, Orlando, Florida.
April 1995, Charles Edison Lecture, University of Notre Dame.
April 1995, Colloquium, University of Notre Dame.
June 1995, Colloquium, Universität Göttingen.
July 1995, Colloquium, Universität Erlangen-Nürnberg.
October 1995, Colloquium, Trinity University.

February 1996, Workshop on *Inverse Problems in Medical Imaging and Non-destructive Testing*, Mathematisches Forschungsinstitut, Oberwolfach.

February 1996, Colloquium, Universität Göttingen.

May 1996, Colloquium, University of Delaware.

June 1996, Invited Hour talk, *International Conference on Inverse Problems in Engineering*, LeCroisic, France.

June 1996, *Thirteenth Dundee Conference on Differential Equations*, Dundee, Scotland.

July 1996, *Special Session on Inverse Problems*, SIAM, Annual meeting, Kansas City, Missouri.

September 1996, Aix-les-Bains, France. "Inverse Problems in Waves and Scattering,"

May 1997, *Special Session on Inverse Problems*, AMS, Corvallis, Oregon.

October 1997, Hour Talk, "Conference on Partial Differential Equations," Lafayette, Louisiana.

December 1997, Colloquium, Universität Erlangen-Nürnberg.

December 1997, Colloquium, Universität Karlsruhe.

January 1998, AMS, *Special Session on Inverse Problems*, Baltimore.

February 1998, Colloquium, Iowa State University.

April 1998, Plenary Speaker, Colloque sur les problèmes inverses, le contrôle et l'optimisation de formes, Carthage, Tunisia.

June 1998, SIAM, Conference on Waves, Golden, Colorado.

September 1998, Workshop on *Inverse Scattering*, Mathematisches Forschungsinstitut, Oberwolfach.

October 1998, Invited Hour talk, *Conference on Inverse Problems*, Vietri sul Mare, Italy.

November 1998, Colloquium, University of Maryland.

February 1999, Colloquium, University of Delaware.

May 1999, Colloquium, Chinese University of Hong Kong.

May 1999, Plenary Speaker, Conference on Differential equations, Hong Kong.

June 1999, Colloquium, Universität Göttingen.

March 2000, Twenty Third, Texas P.D.E. Meeting, Austin Texas.

April 2000, GAMM Annual Meeting, *Special Session on Inverse Problems*,

June 2000, Colloquium, Universität Mainz.

June 2000, Plenary Speaker, Conference on Inverse problems and Nonlinearity, Montpellier, France

July 2000; Plenary Speaker, SFB Conference: *Inverse Problems and Numerical Computing*, Strobl, Austria,

July 2000, Colloquium, Universität München.

September 2000, SIAM Conference on Computational Science and Engineering, *Special Session on Inverse Problems*,

October 2000, Colloquium, Brigham Young University.

January 2001, AMS, *Special Session on Inverse Problems*, New Orleans.

March 2001, Lecture Series, *Ecole Nationale d'Ingenieurs de Tunis*, Tunisia.

May 2001, Plenary Speaker SMAI Annual Meeting, Correze, France.

June 2001, Invited Hour talk, *Applied and Computational Inverse Problems*, Montecatini, Italy.

October 2001, Colloquium, Joint Seminar Series, Colorado School of Mines, Univ. of Colorado, Univ. of Denver.

November 2001 Invited hour talk, *Special Program in Inverse Problems*, MSRI.

April 2002, Principal Speaker, *Inverse Problems and Shape Optimization*, Carthage.

April 2002, Colloquium, Université de Compeigne, France.
 May 2002, Principal Speaker, *Conference on Differential Equations*, Pullman, Washington State.
 June 2002; Invited speaker, Cortona workshop on Inverse Problems,
 June 2002, Colloquium, Universität Göttingen.
 August 2002; SFB-Conference on '*Computational Methods for Inverse problems*, Strobl, Austria.
 October 2002; Lecture Series (10 lectures); "Inverse Eigenvalue Problems", Florence, Italy.
 November 2002; Principal Speaker, "Workshop on *Inverse Obstacle Problems*," Instituto Superior Técnico Lisbon, Portugal.
 March, 2003; BIRS Workshop: "Geometrical Methods in Inverse Problems", Banff, Canada.
 July 2003, *Special Session on Inverse Problems*, International Congress for Industrial and Applied Mathematics, Sydney.
 August 2003; Invited speaker, "Analytic and Geometric Methods in Inverse Problems", Helsinki.
 December 2003; Hour talk, "Inverse Problems: Computational Methods and Emerging Applications", IPAM, Los Angeles.
 February 2004, Colloquium, University of Bergen.
 April 2004; Invited Lecture, Radon Institute, Linz, Austria.
 May 2004; Invited speaker, "Perspectives in Inverse Problems," Helsinki, Finland.
 June 2004; Hour talk, "Geomathematics workshop", Mathematisches Forschungsinstitut, Oberwolfach,
 June 2004, Colloquium, Universität Göttingen.
 December 2004; Invited speaker, conference on Geomathematics, Kaiserslautern, Germany.
 January 2005, *Special Session on Inverse Problems*, AMS, Atlanta, Georgia.
 July 2005, Colloquium, Tongji University, Shanghai.
 July 2005; Principal speaker, conference on "Hot Topics in Current Applied and Industrial Mathematics," Guiyang, China.
 October 2005, Colloquium, Oregon State University, Corvallis, Washington.
 November 2005, Colloquium, Jiaotong University, Xi'an, China.
 January 2006, Special Session: *Wave Propagation and Inverse Problems*, AMS, San Antonio, Texas.
 June 2006, Colloquium, Chinese Academy of Sciences, Beijing.
 August, 2006. BIRS Workshop: "Geometrical Methods in Inverse Problems", Banff, Canada.
 January 2007; Principal Speaker, workshop on "Shape Reconstruction and Integral Equations", Göttingen, Germany.
 May 2007, Colloquium, Universität Mainz.
 December 2007; Invited Speaker, Conference on Numerical Methods and Modelling, Tunis, Tunisia.
 February 2008, Colloquium, Rice University.

Publications in Refereed Journals

- [1] Solutions of boundary value problems for pseudoparabolic equations, *Proc. Roy. Soc. Edinburgh*, 74A, 24, (1975), 311–326.
- [2] (With M. Stecher) A method of ascent for parabolic and pseudoparabolic partial differential equations, *SIAM J. Math. Anal.*, 7, (1976), 898–912.

- [3] (With M. Stecher) Maximum principles for pseudoparabolic partial differential equations, *J. Math. Anal. Appl.*, **57**, (1977), 110–118.
- [4] (With M. Stecher) Remarks concerning the supports of solutions to pseudoparabolic partial differential equations, *Proc. Amer. Math. Soc.*, **63**, (1977), 77–81.
- [5] (With M. Stecher) A Runge approximation and unique continuation theorem for pseudoparabolic equations, *SIAM J. Math. Anal.*, **9**, (1978), 1120–1125.
- [6] The construction of solutions to pseudoparabolic equations in noncylindrical domains, *J. Diff. Eqn.*, **27**, (1978), 394–404.
- [7] The Stefan problem for a pseudo-heat equation, *Indiana Univ. Math. J.*, **27**, (1978), 739–750.
- [8] (With M. Stecher) The nonpositivity of solutions to pseudoparabolic equations, *Proc. Amer. Math. Soc.*, **75**, (2), (1979), 251–254.
- [9] The uniqueness class for the Cauchy problem for pseudoparabolic equations, *Proc. Amer. Math. Soc.*, **76**, (2), (1979), 253–257.
- [10] The determination of an unknown non-homogeneous term in linear partial differential equations from overspecified data, *Applicable Analysis* **10**, (1980), 231–242.
- [11] (With C. Cosner). The uniqueness class for a pseudoparabolic equation with unbounded coefficients, *Comm. Partial Differential Equations*, **8**, (1), (1983), 1–20.
- [12] An inverse problem for a parabolic partial differential equation, *Rocky Mountain J.* **13**, (4), (1983), 679–688.
- [13] The determination of a coefficient in a parabolic partial differential equation from overspecified boundary data, *Applicable Analysis*, **18**, (1984), 309–324.
- [14] (With C. Cosner). Extensions of solutions to second order partial differential equations by the method of quasireversibility, *Houston J. Math.* **10**, (3), (1984), 357–370.
- [15] (With P. Du Chateau) Unicity in an inverse problem for an unknown reaction term in a reaction diffusion equation, *J. Diff. Eqn.* **59**, (2), (1985), 155–165.
- [16] (With M. S. Pilant) An inverse problem for a nonlinear parabolic equation *Comm. Partial Differential Equations*, **11**, (4), (1986), 445–457.
- [17] (With M. S. Pilant) Undetermined coefficient problems for nonlinear elliptic and parabolic equations, in *Inverse Problems*, *Inter. Ser. Numer. Math.* **77**, (1986), 139–154.
- [18] The determination of a parabolic equation from initial and final data, *Proc. Amer. Math. Soc.* **99**, (4), (1987), 637–642.
- [19] (With J. R. Cannon) The determination of a coefficient in an elliptic partial differential equation from overspecified boundary data, *J. Math. Anal. Appl.* **126**, (1987), 329–340.
- [20] (With J. R. McLaughlin) A Uniqueness Theorem for an Inverse Sturm–Liouville Problem, *J. Math. Phys.* **28**, (7), (1987), 1471–1472.
- [21] (With M. S. Pilant) An inverse problem for a nonlinear elliptic equation, *SIAM J. Math. Anal.* **18**, (6), (1987), 1801–1809.

- [22] (With M. S. Pilant) Iteration schemes for unknown coefficient problems in parabolic equations, *Numer. Methods for P.D.E.* **3**, (1987), 313–325.
- [23] Some inverse problems for elliptic equations, *Applicable Analysis*, **28**, (1) (1988), 67–78.
- [24] (With M. S. Pilant) Fixed point methods for a nonlinear parabolic inverse coefficient problem, *Comm. Partial Differential Equations*, **13**, (4), (1988), 469–493.
- [25] (With M. S. Pilant) A uniqueness theorem for determining conductivity from overspecified boundary data, *Journal of Math. Anal. Appl.*, **136**, pp. 20–28, (1988).
- [26] (With G. R. Blakley) Cryptosystems based on an analog of heat flow, in *Advances in Cryptography*, Springer Verlag, (1988), 306–327.
- [27] (With K. O’Brien O’Keeffe) An information-theoretic Approach to the written transmission of Old English, *Computers and the Humanities*, **23**, (1989) 459–467.
- [28] (With M. S. Pilant) An iteration method for the determination of an unknown boundary condition in a parabolic initial-boundary value problem, *Proc. Edin. Math. Soc.*, **32**, (1989), 59–71.
- [29] Determining the birth function in an age structured population, *Mathematical Population Studies*, **1**, 4, (1989), 377–395.
- [30] (With M. S. Pilant) Multiple undetermined coefficient problems for quasi-linear parabolic equations, *Numerical Methods in P.D.E.*, **5**, (1989), 297–311.
- [31] (With H. M. Yin) A Parabolic Inverse Problem with an Unknown Boundary Condition, *Journal of Differential Equations*, **86**, (1990), 234–242.
- [32] (With M. S. Pilant) A method for identifying nonlinear terms in parabolic initial-boundary value problems, *Advances in Water Resources*, **14**, (1991), 83–88.
- [33] (With M. S. Pilant) Determining the initial age distribution for an age-structured population, *Mathematical Population Studies*, **3**, (1991), 3–20.
- [34] (With M. S. Pilant) Recovery of an unknown specific heat by means of overposed data, *Numerical Methods in P.D.E.*, **6**, (1990), 1–16.
- [35] (With M. S. Pilant) Determining a coefficient in a first order hyperbolic equation, *SIAM J. Appl. Math.*, **51**, (2), (1991), 494–506.
- [36] (With J. R. Cannon) Recovering a time dependent coefficient in a parabolic differential equation, *J. Math. Anal. Appl.*, **160**, (1991), 572–582.
- [37] (With P. Sacks) Reconstruction techniques for classical inverse Sturm-Liouville problems, *Mathematics of Computation*, **58**, (197), (1992), 161–183.
- [38] (With B. Lowe and M. S. Pilant) The recovery of potentials from finite spectral data, *SIAM J. Math. Anal.*, **23**, (1992), 482–504.
- [39] (With P. Sacks) The reconstruction of Sturm-Liouville operators, *Inverse Problems*, **8**, (1992), 457–482.
- [40] Determining the death rate for an age-structured population, *SIAM J. Appl. Math.*, **53**, (1993), 1731–1746.
- [41] (With B. Lowe) The determination of multiple coefficients in a second order differential equation from input sources, *Inverse Problems*, **9**, (1993), 469–482.

- [42] (With B. Lowe) An inverse problem for a Sturm-Liouville operator, *J. Math. Anal. Appl.*, **181**, (1994), 188–199.
- [43] (With H.W. Engl and O. Scherzer) A regularization scheme for an inverse problem in age-structured populations, *J. Math. Anal. Appl.*, **182**, (1994) 658-679.
- [44] (With B. Lowe) The determination of a coefficient in a parabolic equation from input sources, *IMA J. Appl. Math.*, **52**, (1994), 31–50.
- [45] (With R. Kress) A Quasi-Newton Method in Inverse Obstacle Scattering, *Inverse Problems*, **10**, (1994), 1145–1157.
- [46] (With P. Sacks) On the determination of potentials without bound state data, *J. Comp. and Appld Math.*, **55**, (1995), 325–347.
- [47] (With B. Lowe) Unique recovery of a coefficient in an elliptic equation from input sources, *Inverse Problems*, **11**, (1995), 211-215.
- [48] (With B. Lowe) The determination of a coefficient in an elliptic equation from average flux data, *J. Comp. Appld. Math.*, **70**, (1996), no. 1, 173–187.
- [49] (With F. Hettlich), Iterative Methods for the Reconstruction of an Inverse Potential Problem, *Inverse Problems*, **12**, (1996), 251–266.
- [50] (With F. Hettlich), Iterative Methods for the Recovery of the support of a source term in an elliptic differential equation, *Inverse Problems*, **13**, (1997), 959–976.
- [51] (With F. Hettlich), The determination of a discontinuity in a conductivity from a single boundary measurement, *Inverse Problems*, **14**, (1998), 67–82.
- [52] (With R. Kress) Inverse Obstacle Scattering Using Reduced Data, *SIAM J. Appld. Math*, **59**, (1999), 442–454.
- [53] (With F. Hettlich), A Second Degree Method for Nonlinear Inverse Problems, *SIAM J. Numer. Anal*, **37**, (2000), no. 2, 587–620.
- [54] (With R. Kress) Inverse scattering for shape and impedance, *Inverse Problems*, **17**, (2001), no. 4, 1075–1085
- [55] (With F. Hettlich), Identification of a discontinuous source in the heat equation. *Inverse Problems*, **17**, (2001), no. 5, 1465–1482.
- [56] (With P. Sacks) Reconstruction of a Radially Symmetric Potential From Two Spectral Sequences, *J. Math., Anal., Appl.*, **264**, (2001) 354–382.
- [57] (With M. McCarthy) Eigenparameter dependent inverse Sturm-Liouville problems, *Numer. Funct. Anal. Optim.* **24**, (2003), no. 1-2, 85–105
- [58] (With P. Sacks) A numerical technique for the inverse resonance problem, *J. Comp. Appld. Math.*, **170**, (2004), 337–347.
- [59] (With R. Kress) Nonlinear integral equations and the iterative solution of an inverse boundary value problem, *Inverse Problems*, **21**, (2005), 1207–1223.
- [60] The reconstruction of inverse boundary value problems using higher order poles as test solutions. *submitted for publication.*
- [61] The recovery of shape and impedance for obstacle problems. *submitted for publication.*

Refereed Conference Proceedings

- [1] (With M. S. Pilant) Undetermined coefficient problems for quasilinear parabolic equations, in *Inverse Problems in Partial Differential Equations*, Proceedings of the 1989 Summer Research Conference, Arcata, Ca. 1989, SIAM (1990), 165–185.
- [2] (With M. S. Pilant) Age-structured population dynamics, in *Inverse Methods in Action*, P. Sabatier, editor, Springer Verlag (1990), 122–129.
- [3] (With P. Sacks) On the numerical determination of potentials, in *Inverse Problems in Scattering and Imaging, Proc. SPIE* 1992.
- [4] (With B. D. Lowe) Determining coefficients using multiple input sources, in *Inverse Scattering and Potential Problems in Mathematical Physics*, R. Kleinman, R. Kress and E. Martensen editors, Peter Lang, Frankfurt am Main 1995.
- [5] (With B. D. Lowe) Coefficient recovery in a parabolic equation from input sources, in *Inverse Problems in Diffusion Processes*, Proceedings of the 1994 GAMM/SIAM Conference, St. Wolfgang, Austria 1994. SIAM (1995), 120–129.
- [6] (With B. D. Lowe) A numerical algorithm for determining a coefficient in an elliptic equation, *Proceedings A.S.M.E. Vibration, Control, Analysis and Identification*, **3C**, 1995, 1067–1071.
- [7] (With R. Kress) Inverse obstacle scattering with modulus of the far field pattern as data, *Inverse problems in nondestructive testing and medical imaging*, Springer-Verlag, Wien, 1997.

Books

- [1] *ODE Solver: Numerical Procedures for Ordinary Differential Equations*, T. Kiffe and W. Rundell, Wadsworth, (1990).
- [2] *An Introduction to Inverse Scattering and Inverse Spectral Problems*, Kosrow Chadan, David Colton, Lassi Päivärinta and William Rundell, SIAM, Philadelphia, 1997.

Proceedings Volumes

- [1] *Inverse Problems in Partial Differential Equations*, Proceedings of the 1989 Summer Research Conference, Arcata, Ca. 1989, William Rundell, David Colton, Richard Ewing, editors, SIAM (1990).
- [2] *Inverse Problems in Diffusion Processes*, Proceedings GAMM/SIAM Symposium, St. Wolfgang, Austria, 1994, Heinz Engl and William Rundell, editors, SIAM (1995).
- [3] *Inverse Problems in Geophysics*, Proceedings GAMM/SIAM Symposium, Yosemite, Ca 1995, Heinz Engl, Alfred Louis and William Rundell, editors, SIAM (1997).
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