

Biographical Data

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

Office Address:
Department of Mathematics
Texas A&M University
College Station, Texas 77843-3368.
(979) 845-3261, rundell@math.tamu.edu
<http://www.math.tamu.edu/william.rundell/>

In the Profession:
1971-1973, Postgraduate Fellowship, Glasgow University,
1973-1974, Teaching Assistant, Indiana University,
1974-1980, Assistant Professor, Texas A&M University,
1980-1987, Associate Professor, Texas A&M University,
1987-present, Professor of Mathematics, T.A.M.U.,
1990-present, Professor of Computer Science, T.A.M.U.
May-June 1992, Gastprofessor, Johannes Kepler University, Linz, Austria.
June-July 1993, 1995, 1997, 1999, 2002, 2004 Gastprofessor,
Universität Göttingen, Germany
1992-2002, Head, Dept. Mathematics, T.A.M.U.
2002-2006, Director, Divison of Mathematical Sciences
National Science Foundation
July 2009, Visiting Professorship, University of Nice, France.
June-July 2014, Distinguished Visiting Professorship, Fudan University, Shanghai

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

Society Memberships:
Elected Fellow, Institute of Physics (UK).

Selected Service Activities

Director, Division of Mathematical Sciences, National Science Foundation, September 2002 - 2006. 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 FY2007 annual budget of \$210M. This figure represented approximately eighty percent of the available federal research funding for the discipline and a major part of the position entailed interactions with the academic mathematical sciences community. During my tenure the funding for DMS increased by 30%; the current budget is only 10% above the 2006 figure.

Head, Department of Mathematics, Texas A&M University, 1992 – 2002. The Department had a total faculty size of 120, over 100 graduate students and approximately 400 undergraduate majors. There were 20 administrative and technical staff. Research expenditures were approximately \$2.5M per year with the majority of these funds coming from NSF.

Directed the University Honors Program (1983–1985). 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.

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; *Laplant 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.

Organiser Mathematisches Forschungsinstitut Oberwolfach; workshops on theme of *Inverse Scattering and Impedance Tomography*. April 2003, March 2007, February 2012, September 2016.

Chair, Organising Committee, Applied Inverse Problems - AIP2011, May 2011, held at Texas A&M University. 350 Participants, funding from TAMU: IAMCS, KAUST, Math, VPR, Institute Physics (about \$160K total)

Member or Chair of many search committees both within and external to the College of Science. These include: Head searches in the departments of Chemistry, Statistics and Physics and Dean search, College of Science. Some of these I served on more than once.

Mathematics department program reviews: University of Oklahoma, 1997; University of Alberta, 1999; Colorado School of Mines, 2012; University of Kentucky, 2013;

Numerous NSF panels including GIG, VIGRE, Committee of Visitors (2001).

NSF site visits; VIGRE, Institutes.

Member, Scientific Advisory Board, Radon Institute, Linz, (2002 - 2008).

Editorial Boards:

Mathematical Population Studies, (1992-1996).

Inverse Problems, (1993 – current).

Inverse Problems in Imaging, (2006 – current).

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.

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.

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

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.

Ph. D. Students

- o Lester Caudill, Ph.D. Mathematics, Texas A&M University, 1992
- o Lihua Zuo, Ph.D. Mathematics, Texas A&M University, 2012
- o Zhidong Zhang, Ph.D. Mathematics, Texas A&M University, 2016

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.

Note: On assuming the NSF position in 2002 all active projects were turned over to other investigators. Salary funding for the NSF position was through an award to Texas A&M.

National Science Foundation: "Reconstruction algorithms for inverse obstacle problems", DMS-0715060, July 2007 to July 2012, \$260,500.

National Science Foundation: DMS-1319052, "Uniqueness and Reconstructions Methods for Inverse Problems". July 2013-July 2016, \$280,000.

National Science Foundation: DMS-1620138, "Analysis and Computation of Inverse Problems in Differential Equations," July 2016-July 2019, \$300,000.

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 (totalling to over \$3M with later supplements): "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.

Other Grants:

National Science Foundation "US-China Collaborations in inverse problems", DMS-0900889, July 2009 to July 2012, \$35,600.

National Science Foundation "Graduate Student and Postdoctoral support for workshop and AIP conference" DMS-1100848, April 2011 to July 2011, \$34,500

Department of Homeland Security: 2010-2013. Joint award (5 PIs) to initiate a graduate program in detection of nuclear materials (I am responsible for the inverse problems course material). Approx: 50K per year for 3 years.

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 Gastprofessor, Universität Göttingen, Germany.
June 1994, Invited lecturer, (month) University of Oulu, Finland.
Institute for Mathematics and its Applications: February 1995; April 2002.
Mathematical Sciences Research Institute: August 2001, November 2001.
Professeur Invité, University Nice, July 2008, February 2009
Visiting Scholar RICAM Linz Austria, March-July 2009.
Visiting Distinguished Professor, Fudan University, June-July 2014.

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, Manhatten, 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

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

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.

Invited speaker, Cortona workshop on Inverse Problems, June 2002,

June 2002, Colloquium, Universität Göttingen.

SFB-Conference on *Computational Methods for Inverse problems*, Strobl, Austria, August 2002.

Lecture Series (10 lectures); "Inverse Eigenvalue Problems", Florence, Italy, October 2002.

Principal Speaker, "Workshop on *Inverse Obstacle Problems*," Instituto Superior Técnico Lisbon, Portugal, November 2002

BIRS Workshop: "Geometrical Methods in Inverse Problems", Banff, Canada, March, 2003.

July 2003, *Special Session on Inverse Problems*, International Congress for Industrial and Applied Mathematics, Sydney.

Invited speaker, "Analytic and Geometric Methods in Inverse Problems", Helsinki, August 2003.

Hour talk, "Inverse Problems: Computational Methods and Emerging Applications", IPAM, Los Angeles, December 2003.

February 2004, Colloquium, University of Bergen.

Invited Lecture, Radon Institute, Linz, April 2004.

Invited speaker, "Perspectives in Inverse Problems," Helsinki, May 2004.

Hour talk, "Geomathematics workshop", Mathematisches Forschungsinstitut, Oberwolfach, June 2004.

June 2004, Colloquium, Universität Göttingen.

Invited speaker, conference on Geomathematics, December 2004, Kaiserslautern, Germany.

January 2005, *Special Session on Inverse Problems*, AMS, Atlanta, Georgia.

July 2005, Colloquium, Tongji University, Shanghai.

Principal speaker, conference on "Hot Topics in Current Applied and Industrial Mathematics," Guiyang, China July 2005.

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.

BIRS Workshop: "Geometrical Methods in Inverse Problems", Banff, Canada, August, 2006.

Principal Speaker, workshop on "Shape Reconstruction and Integral Equations", Göttingen, January 2007.

Plenary Speaker, Conference on *Numerical Methods and Modelling*, Tunis, Tunisia, December 2007.

Plenary Speaker, Conference on *Inverse Scattering*, Sestri Levante, Italy. June 2008.

Plenary Speaker, Workshop on Inverse Problems, Fudan University, Shanghai. June 2008.

BIRS Workshop: *Advances in Inverse Problems*, Banff, Canada. November, 2008.

June 2007, Colloquium, Universität Göttingen.

May 2007, Colloquium, Universität Mainz.

February 2008, Colloquium, Rice University.

March 2008, Invited Speaker, Conference on Funding of Mathematics, Sapporo, Japan.

June 2008, Colloquium, University of Tokyo.

July 2008, Colloquium, Fudan University, Shanghai.

July 2008, Colloquium, University of Nice, France.

February 2009, Lecture series; (part of a month appointment), University of Nice, France.

May 2009, Colloquium, Universität Göttingen.

October 2009, Colloquium, University of Texas, Austin.

October 2011, Plenary Speaker, Invited Workshop on Inverse Spectral Problems, IMCS, Edinburgh, Scotland.

January 2012. Winter Enrichment Program, KAUST. Gave 4 graduate lectures.

April 2013, Plenary Speaker, *Inverse Problems: Scattering, Tomography and Parameter Identification*, Bad Herrenalb, Germany.

May 2013, Plenary Speaker, *International workshop on Multiscale Modeling, Simulation and Inversion*, Jeddah, Saudi Arabia.

July, 2013, Plenary Talk, *International Conference on Novel Directions in Inverse Scattering*, Newark, Delaware.

September 2013, Plenary Talk *Inverse Problems and Regularization Theory*, Fudan Univ, Shanghai.

March 2014, Plenary speaker, *Conference on Diffusion in Heterogeneous Media and Related Topics*, Tokyo, Japan.

March 2014, Plenary speaker, *International Workshop on Theoretical and Computational Analyses for Inverse Problems*, Guangzhou, China.

December 2014, Plenary speaker, *Conference on Inverse Problems and Optimal Control*, Chinese University, Hong Kong.

June 2015, Colloquium, University College London.

August 2015, Plenary speaker, *International Conference on Inverse Problems, Imaging, and Applications*, August 2015, Colloquium Zhejiang University, Hangzhou, China.

August, 2015, ICIAM meeting Beijing: gave three talks at different minisymposia.

September 2015, Lecture series, Summer School on Inverse Problems; University of Münster. Gave 6 lectures to approximately 70 graduate students and postdocs.

September 2016, Graduate Lecture Series, (four one hour lectures). Universität Göttingen, Germany.

October, 2017, IMPA, Rio de Janeiro. Plenary Speaker, Workshop: *New Trends in Parameter Identification for Mathematical Models*.

December, 2017, Plenary Speaker. *Recent Advances in Computational and Applied Mathematics*, Wuhan, China.

April 2018, Karl Popper Lecture, Alpen-Adria-Universität, Austria.

September 2018, Planary Speaker, *International Conference on Inverse Problems*, Shanghai, China.

April 2019, Colloquium, Alpen-Adria-Universität, Klagenfurt, Austria.

July 2019, *Applied Inverse Problems Conference*, Grenoble, France. Two minisymposium talks.

October 2019, *Chemnitz Symposium*, Frankfurt, Germany, Minisymposium talk.

October 2019, *Austrian Mathematics Society*, Dornbirn, Austria. Minisymposium talk.

November 2019, Colloquium, University of Vienna, Austria.

November 2019, Plenary speaker *First Alpen-Adria conference on inverse problems*, Klagenfurt, Austria.

June 2020, Plenary speaker (changed to zoom) *Conference on Recent Progress in Nonlocal Modeling, Analysis, and Computation*, at Southern University of Science and Technology, China.

October 2020, Colloquium, University of Santa Catarina, Brazil (via zoom).

December 2020, Hour talk, Oberwolfach (attended in person)

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] W. Rundell: Recovering an obstacle and its impedance from Cauchy data, *Inverse Problems*, **24**, (2008), 045003 (22pp).
- [61] W. Rundell: Recovering an obstacle and a nonlinear conductivity from Cauchy data, *Inverse Problems*, **24**, (2008), 045003 (14pp).
- [62] W. Rundell: Recovering an obstacle using integral equations *Inverse Problems and Imaging*, **3**, (2009), 319–332.
- [63] With M. Hanke: On rational approximation methods for inverse source problems and inverse obstacle problems, *Inverse Problems and Imaging*, **5**, (2011), 1–17.

- [64] With L Zuo and X Xu: Reconstructing a nonlinear boundary condition in a fractional diffusion equation. *Applicable Analysis*, (2012), 1–16, doi:10.1080/00036811.2012.686605
- [65] With B. Jin: An inverse Sturm-Liouville problem with a fractional derivative, *Journal of Computational Physics*, **231**, (2012) 4954–4966.
- [66] With B. Jin: An inverse problem for one-dimensional time-fractional diffusion problem, *Inverse Problems*, **28**, (2012) 075010 (19 pp).
- [67] With R. Kress: Reconstruction of extended sources for the Helmholtz equation, *Inverse Problems*, **29**, (2013) doi:10.1088/0266-5611/29/3/035005 (15 pp.)
- [68] With Y. Luchko, M. Yamamoto, L Zuo: Uniqueness and reconstruction of an unknown semilinear term in a fractional reaction-diffusion equation, **Inverse Problems** (16 pp.) **29**, doi:10.1088/0266-5611/29/6/065019
- [69] With P. Sacks: An Inverse Eigenvalue Problem for a Vibrating String with Two Dirichlet Spectra, *SIAM J. Appl. Math.*, **73**, (2), (2013) 1020–1037.
- [70] With R. Kress: A nonlinear integral equation and an iterative algorithm for an inverse source problem *J. Integral Equations*, **27**, (2) (2015), 179–197.
- [71] With B. Jin: A Tutorial on Inverse Problems for Anomalous Diffusion Processes, *Inverse Problems*, **31**, (2015), (40 pages)
- [72] W. Rundell: Recovering the Density of a String from Only Lowest Frequency Data, *SIAM J. Appl. Math.*, **75**, (2015), 2232–2245, doi: 10.1137/140992059.
- [73] With G. Bao, S. Lu and B. Xu: A recursive algorithm for multifrequency acoustic inverse source problems, *SIAM J. Numer. Anal.* **53**, (2015), 1608–1628, doi: 10.1137/140993648,
- [74] With P. Sacks: An Inverse eigenvalue problem for a simple star graph. *J. Spectral Theory*, **5**, (2015), 363–380, doi: 10.4171/jst/101.
- [75] With B. Jin, R. Lazarov, J. Pasciak: A finite element method for the fractional Sturm-Liouville problem, *Math. Comp.* **84**, (2015), 2665–2700, doi: 10.1090/mcom/2960.
- [76] With Y. Liu, M. Yamamoto: Strong maximum principle for fractional diffusion equations and an application to an inverse source problem. *Fract. Calc. Appl. Anal.*, **19**, (2016), no. 4, 888–906.
- [77] With Z. Zhang: Fractional Diffusion: Recovering the Distributed Fractional Derivative from Overposed data. *Inverse Problems*, **33**, no. 3, (2017), (27 pages) doi:10.1088/1361-6420/aa573e.
- [78] With R. Kress: Inverse scattering for shape and impedance revisited. *J. Integral Equations Appl.*, **30**, (2), (2018) 293–311.
- [79] With Z. Zhang: Recovering an unknown source in a fractional diffusion problem. *J. Comput. Phys.* **368**, (2018), 299–314.
- [80] With B. Kaltenbacher: Regularization of a backwards parabolic equation by fractional operators, *Inverse Problems and Imaging*, **13**, (2019), no. 2, 401–430.
- [81] With B. Kaltenbacher: On an inverse potential problem for a fractional reaction-diffusion equation, *Inverse Problems*, **35**, (2019), no. 6, 31 pages, 065004.
- [82] With B. Kaltenbacher: On the identification of a nonlinear term in a reaction-diffusion equation, *Inverse Problems*, **35**, (2019), 41 pages, doi:10.1088/1361-6420.

- [83] With B. Kaltenbacher: Recovery of multiple coefficients in a reaction-diffusion equation, *J. Math. Anal. Appl.*, (2019), doi:10.1016/123475.
- [84] With B. Kaltenbacher: Recovery of multiple coefficients in a reaction-diffusion equation, *J. Math. Anal. Appl.*, (2019), doi:10.1016/123475.
- [85] With Z. Zhang: On the identification of a source term in the heat equation from sparse data, *SIAM J. Math. Anal.* **52**, (2) (2020), 1526–1548, doi:10.1137/19M1279915.
- [86] With B. Kaltenbacher: On the simultaneous recovery of the conductivity and the nonlinear reaction term in a parabolic equation, *Inverse Problems and Imaging*, **14**, (2020), no. 5, 939–966, doi:10.3934/ipi.2020043.
- [87] With B. Kaltenbacher: Some inverse problems for wave equations with fractional derivative attenuation, *Inverse Problems*, **37**, (2021), 045002
- [88] With B. Kaltenbacher: On the identification of the nonlinearity parameter in the Westervelt equation from boundary measurements, *Inverse Problems and Imaging*, (2021), doi:10.3934/ipi.2021020
- [89] With B. Kaltenbacher: On uniqueness and reconstruction of a nonlinear diffusion term in a parabolic equation *J. Math. Anal. Appl.* **500**, (2021), no. 2, 125145
- [90] With M. Yamamoto: Uniqueness for an inverse coefficient problem for a one-dimensional time-fractional diffusion equation, (submitted).
- [91] With B. Kaltenbacher: On an inverse problem of nonlinear imaging with fractional damping, (submitted).

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 Päiväranta 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).
- [4] *Inverse Problems in Medical Imaging and Non Destructive Evaluation*, Proceedings Oberwolfach Symposium, 1996, Heinz Engl, Alfred Louis and William Rundell, editors, Springer (1997).
- [5] *Surveys on solution methods for inverse problems*. David Colton, Heinz W. Engl, Alfred K. Louis, Joyce R. McLaughlin and William Rundell, editors, Springer-Verlag, Vienna, 2000.