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## **EDUCATION**

1981 The University of Texas at Austin  
Ph.D. in Mathematics  
Dissertation - "Degenerate Evolution Equations and Inequalities"  
1976 Brigham Young University  
M.S. in Mathematics  
1974 Brigham Young University  
B.S. in Mathematics

## **PROFESSIONAL EXPERIENCE**

1999- present Professor Brigham Young University  
1998-1999 Visiting Professor Brigham Young University  
1994- 1998 Associate Professor Michigan Technological University  
1993 - 1994 Visiting Associate Professor Brigham Young University  
1989-1993 Associate Professor Michigan Technological University  
1983 - 1989 Assistant Professor Michigan Technological University  
1982 - 1983 Assistant Professor University of Oklahoma - Norman  
1981 - 1982 Visiting Professor Michigan Technological University

## **CLASSES TAUGHT**

Classes taught include Calculus, Differential Equations, Statistics, Real Analysis, Linear Algebra, Vector Analysis, Matrix theory, Partial Differential Equations, Functional Analysis, Advanced Calculus, Complex analysis, and General Topology. I especially enjoy teaching graduate courses in analysis including measure and integration and have written two books which include this material.

## **SERVICE**

Hiring committee  
Calculus committee  
Colloquium Chairman  
Computational Math Committee  
Freshmen and Sophomore Advisor  
Promotions and Tenure Committee  
Applied Math Committee  
Instructional Policy Committee  
Assesment Committee  
Curriculum Committee  
Reviewer for Mathematical Reviews  
Reviewed NSF Grant Proposals

## **TALKS GIVEN**

Winter 2010 At Oakland University  
Summer 2008 at AIMS conference.

April 2000 Talk given at a special session of AMS at Lafayette La.  
Nov. 1995 colloquium talk at Wayne State and Oakland U.  
Sept. 1995 colloquium talk at M.T.U.  
Feb 1994 Brigham Young University, Provo UT  
1989 AMS Meeting, Phoenix AZ  
1988 MAA Meeting at Northern Michigan University  
Oct 1988 MAA Meeting at Michigan Tech. University  
1987 Workshop on Nonlinear P.D.E., Brigham Young University  
July 1985 SIAM Meeting, Pittsburgh PA  
Nov 1984 AMS Meeting, Minneapolis MN  
Aug 1983 Mechanics of Dislocations Symposium, M.T.U.  
Mar 1983 AMS Meeting, Norman OK  
Jan 1982 AMS Meeting, Cincinnati OH

### **RESEARCH IN PROGRESS**

I am currently working on systems of partial differential equations and inclusions that model contact problems with friction and systems of partial differential equations that result from a quasistatic and dynamic models of damage. I am also studying stochastic problems involving integration and differential equations. I am working on a calculus book and a linear algebra book. I am working on another advanced analysis book which is on my web page.

### **REFERENCES**

#### **Konrad J. Heuvers,**

Professor, Dept. of Mathematical Sciences, M.T.U.,  
Houghton MI 49931.  
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#### **Meir Shillor, Professor**

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Oakland University,  
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#### **Peter Bates**

Chair, Dept. of Mathematics Michigan State University  
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#### **Kevin Andrews**

Dept. of Mathematical Sciences,  
Oakland University,  
Rochester, MI 48309  
andrews@oakland.edu

### **PUBLICATIONS**

1. A Degenerate Nonlinear Cauchy Problem, *Applicable Analysis*, 13 (1982), 307-322.
2. Implicit Evolution Equations *Applicable Analysis*, 16 (1983), 91-99.

3. Degenerate Variational Inequalities of Evolution, *Journal of Nonlinear Analysis: Theory Methods and Applications*, 8 (1984), 837-850.
4. The Galerkin Method and Degenerate Evolution Equations, *Journal of Mathematical Analysis and Applications*, 107(1985), 396-413.
5. The Solution of an Evolution Equation Describing Certain Types of Mechanical and Chemical Interaction with J.W. Hilgers and T.H. Courtney, *Applicable Analysis*, 19 (1985), 75-88.
6. Time Dependent Implicit Evolution Equations, *Nonlinear Analysis: Theory Methods and Applications*, 10, No.5(1986),447-463.
7. Initial Boundary Value Problems for some Nonlinear Conservation Laws with D.L. Hicks, *Applicable Analysis*, 24 (1987),1-12.
8. Some Progress on the Hydrocode Convergence Problem with D.L.Hicks *Applied Mathematics and Computation*, 23, No.3 (1987), 211-233.
9. Regularity of Weak Solutions of Some Nonlinear Conservation Laws, *Applicable Analysis*, 26 (1987).
10. Weak Solutions of Initial Boundary Value Problems for a class of Nonlinear Viscoelastic Equations with D.L. Hicks, *Applicable Analysis*, 26 (1987),33-43.
11. Existence and Uniqueness in Non Classical Diffusion with E.C. Aifantis *Quarterly of Applied Mathematics*, 45, No. 3 (1987).
12. Quasilinear Evolution Equations in Non Classical Diffusion with E.C. Aifantis *SIAM Journal of Mathematical Analysis*, 19, issue 1 (1988).
13. Continuum and Discrete Hydrodynamical Models, convergence and Globally Well Posed Problems with D.L.Hicks, *Applied Mathematics and Computation*, 25 (1988) pp. 299-320.
14. Initial Boundary Value Problems for the Equation  $u_{tt} = (\alpha(u_x)u_{xt})_x + \sigma(u_x)_x + f$ , with D.L. Hicks, *Quarterly of Applied Math*, Vol. 46, No. 3 (1988), pp. 393-407.
15. Globally Well Posed Initial Boundary Value Problems for a Discrete Hydrodynamical Model, Part 2: Velocity Boundary Conditions, with D.L. Hicks. *Math. Comput. Modeling*, Vol. 12, No. 8 (1990), pp. 959-966.
16. Initial Boundary Value Problems for the Displacement in an Isothermal Viscous Gas. *Journal of Nonlinear Analysis, Theory, Methods and Applications*, Vol. 15, No. 7 (1990), pp. 601-623.
17. On the Thermodynamic Theory of Fluid Interfaces: Infinite Intervals, Equilibrium Solutions and Minimizers, with E.C. Aifantis. *Journal of Colloid and Interface Science*, Vol. 138, No. 1 (1990), pp. 280-281.
18. Existence, Uniqueness and Long-Time Behavior of Materials with Non- Monotone Equations of State and Higher Order Gradients, with E.C. Aifantis. *Quarterly of Applied Math*, Vol. 48, No. 3 (1990), pp. 473-489.

19. The One-Dimensional Displacement in an Isothermal Viscous Compressible Fluid with a non-monotone Equation of State, with D.L. Hicks. *Rocky Mountain Journal of Math*, Vol. 21, No.2 (1991).
20. Regularity of the Displacement in a One-Dimensional Viscoelastic Material. *Nonlinear Analysis, Theory, Methods and Applications.*, Vol. 17, No. 1 (1991), pp. 95-104.
21. Globally Well-posed Initial Boundary Value Problems for a Discrete Hydrodynamical Model: Stress Boundary Conditions, with D.L. Hicks. *J. Math and Computer Modeling*. Vol. 17, No. 3, pp 107-113 (1993).
22. A One-Dimensional Thermoviscoelastic Contact Problem, with M. Shillor, *Advances in Mathematical Sciences and Applications*. Vol. 4, no.1 (1994), pp. 141-159.
23. Velocity Dependent Boundary Conditions for the Displacement in a One- Dimensional Viscoelastic Material. *Rocky Mountain Journal of Math*. Vol. 24, No. 2, Spring 1994, pp. 579-613.
24. A Dynamic Contact Problem in Viscoelasticity. *Advances in Mathematical Sciences and Applications*. Vol. 4, No. 2 (May 1994) pp. 297-312.
25. A Dynamic Contact problem in one Dimensional Thermoviscoelasticity, with M. Shillor, *Nonlinear World 2* (1995) pp. 355-385.
26. Dynamic Friction Contact Problems for General Normal and Friction Laws. *Nonlinear Analysis Theory Methods and Applications*, (1997) Vol. 28, No. 3, pp. 559-575.
27. Second order Evolution Equations with Dynamic Boundary conditions with Andrews and Shillor *Journal of Math Analysis and Applications* 197, pp. 781-795 (1996).
28. One dimensional models of damage with Fremond, Nedjar, and Shillor, *Advances in Math. Science and . Applications*. no. 2 vol. 8 (1998), pp. 541-570.
29. On the Dynamic behavior of a Themoviscoelastic Body in Frictional Contact with a rigid obstacle. with Kevin Andrews and Meir Shillor. *European Journal of Applied Mathematics* (1997 ), vol.8, pp. 417-436.
30. *Modern Analysis*, CRC press. (1997)
31. Existence and Uniqueness of Solutions for a Dynamic One-Dimensional Damage Model. With Shillor *Journal of Mathematical Analysis and Applications* **229**, 271-294 (1999)
32. Set valued Pseudomonotone mappings and Degenerate Evolution inclusions. With Shillor. *Communications in Contemporary mathematics* Vol. 1, No. 1 87-123 (1999)
33. Models and Simulations of Dynamic Frictional Contact of a Beam. With Renard and Shillor *Computer Methods in Applied Mechanics and Engineering*, 177 (1999) pp. 259-272. special issue Computational Modeling in Contact and Friction, J.A.C. Martins and A. Klarbring (Eds.)
34. Wear of a Themoelastic Beam in Frictional contact. with M. Shillor and R.J.Gu *Journal of Math Analysis and Applications*, 242 (2000), 212-236.

35. Nondegenerate Implicit Evolution Inclusions, *Electronic Journal of Differential Equations*, Vol. 2000(2000), No. 34, 1-20, 12 May 2000.
36. Evolution Inclusions for time dependent families of subgradients *Applicable Analysis* Vol. 76 pp. 185-201 14 June 2000.
37. A dynamic model with friction and adhesion with applications to rocks. With Dumont Y Goeleven D. Rochdi M. and Shillor M. *Journal of Math Analysis and Applications*, 247, 2000 no. 1 87-109.
38. Unilateral Dynamic Contact of two beams, with Park, Shillor, and Zhang *Mathematical and Computer Modelling* 34 pp. 365-384 (2001).
39. Dynamic Bilateral Contact with Discontinuous Friction Coefficient with Shillor *Nonlinear Analysis* 45 pp. 309-327 2001.
40. Rocks interface problem including adhesion. Nonsmooth nonconvex Mechanics. Nonconvex Optim. Appl. 50 Kluwer Acad. Publ. Dordrecht 2001. pp. 69-82 With Dumont, Goeleven, Rochdi, and Shillor.
41. A Beam In Adhesive Contact. With Han W. Shillor. M. Sofonea M. Proceedings of third Contact mechanics International Symposium. (CMIS) Peniche, Portugal June 17-21, 2001.
42. Vibrations of a Beam in contact with two stops. with Shillor *Dynamics of Continuous, Discrete and Impulsive Systems. 8 (2001) no. 1 93-110*
43. One-Dimensional Dynamic Thermoelasticoelastic Contact with Damage, With K.T. Andrews, M. Shillor, M. Rochdi. *J. Math. Anal. Appl.*, 272(2002), 249 - 275.
44. *Basic Analysis*. Rinton Press. November 2001.
45. Elastic beam in adhesive contact W. Han, K. L. Kuttler M. Shillor and M. Sofonea *International Journal of Solids and Structures*. 39 (2002) pp. 1145-1164.
46. Quasi-Static Thermoelasticoelastic Contact Problem with Slip Dependent Friction Coefficient With A. Amassad, M. Rochdi and M. Shillor, *Mathematical and Computer Modelling*, 36, (2002) pp. 839-854.
47. Dynamic Contact with Normal Compliance Wear and Discontinuous Friction Coefficient. With Shillor. *SIMA* Vol. 34 #1 pp. 1-27, (2002).
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50. Analysis and Simulations of Vibrations of a Beam with a Slider with Dumont and Shillor. *Journal of Engineering Mathematics* 47 61-82. (2003)
51. K. L. Kuttler, Meir Shillor, Heat conduction with flux condition on a free patch, *Journal of Applied Math. and Optimization.*, 50(2)(2004), 143-159

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53. Regularity of solutions to a dynamic frictionless contact problems with normal compliance, with Shillor *Nonlinear Analysis* 59 (2004) 1063-1075.
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55. Quasistatic Evolution of Damage in an Elastic Body with Shillor. *Nonlinear Analysis RWA*, 7 (2006) 674-699.
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65. Existence Results for Dynamic Adhesive Contact of a Rod. With Menike R.S.R. and Shillor M. *Journal of math analysis and applications.* 351, March (2009),781-791.
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70. Two rods in dynamic adhesive contact, with Shillor, M. and Nassar A. Sayed. *Annals of the Academy of Romanian Scientists Series on Mathematics and its Applications* 1(1) (2009), 83-111.
71. A dynamic thermoviscoelastic problem: An existence and uniqueness result. With Fernandez J.R. *Nonlinear Analysis* 72 (2010), no. 11, 4124-4135. (This one makes use of my results for time dependent families of subgradients.)
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73. An existence and uniqueness result for a strain-adaptive bone remodeling problem, An existence and uniqueness result for a strain-adaptive bone remodeling problem, *Nonlinear analysis: Real World Applications*, 12(2011) 288-294.
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