

Gary F. Dargush

Office:

University at Buffalo, State University of New York
Civil, Structural and Environmental Engineering
135 Ketter Hall
Buffalo, NY 14260
(716) 645-2114 x2405
gdargush@eng.buffalo.edu

Home:

250 Brantwood Road
Snyder, New York 14226
(716) 837-1477

Education:

University at Buffalo
Ph.D., September 1987
Dissertation: Boundary Element Methods for the Analogous Problems of Thermomechanics and Soil Consolidation
M.S.C.E., January 1977
Thesis: Optimization of Cold-Formed Structural Members by Geometric Programming
Rensselaer Polytechnic Institute
B.S.C.E., June 1974

Professional Experience (Academia):

University at Buffalo, Department of Civil, Structural and Environmental Engineering
Professor (8/2002-Present), Director of Graduate Studies (5/2003-Present)
Associate Professor (8/1998-7/2002)
Assistant Professor (8/1996-7/1998)
Research Associate Professor (9/1990-8/1996)
Research Assistant Professor (6/1987-8/1990)
Research Assistant (1/1985-10/1985, 5/1986-5/1987)

Research Summary

Developed a mechanics-based approach for passively damped structural systems. This approach provides an important theme for the book written with T.T. Soong entitled *Passive Energy Dissipation Systems in Structural Engineering* published by Wiley in 1997. The book includes both a synthesis and critique of existing work on a wide range of PED systems. Although emphasis is placed on a mechanics-based presentation of fundamentals, numerous design and implementation issues are also addressed. Current related work, funded by MCEER, focuses on the development of an evolutionary framework for the computational aseismic design of passively-damped structural systems.

Developed innovative approaches for computational fluid dynamics and for the associated problems of fluid-structure interaction under grants from NSF and NASA. These new boundary element formulations have been successfully applied to low and medium Reynolds number flows. Advanced concepts are presently under development with M.M. Grigoriev for higher speed regimes, including unsteady formulations.

Developed a theory of boundary eigensolutions with A.R. Hadjesfandiari. This theory provides an alternative view to characterize the solution of linear elliptic boundary value problems and creates a fundamental link between variational and integral equation methods. As a consequence, several new computational mechanics formulations have also been developed that are particularly attractive for the systematic solution of non-smooth problems involving cracks, notches and bimaterial interfaces. Boundary element methods for multiscale analysis of engineering composite materials and structures are presently under development.

Professional Experience (Academia):

University at Buffalo, Department of Civil, Structural and Environmental Engineering

Research Summary (continued)

Developed and implemented a general boundary element formulation for linear and nonlinear thermomechanical analysis for United Technologies/Pratt & Whitney with P.K. Banerjee and D.P. Henry. The resulting program is currently used within the engine design process at P&W.

Developed advanced boundary element methods for manufacturing mechanics, including die casting and metal cutting. General Motors Corporation employs the resulting computer code routinely for transmission mold design.

Developed a finite element formulation for poroplastic response of soils undergoing large deformation. Similar finite element methodology was also established for the thermomechanical analysis of manufacturing processes, including thermoforming.

Developed an efficient substructure-based boundary element methodology for time dependent thermoelasticity. This work was supported in part by Daimler-Benz, General Motors and United Technologies.

Teaching Summary

Newly Developed or Substantially Revised Graduate Courses:

Advanced Mechanics of Solids (CIE511)

Fall 2001; Enrollment: 12

Advanced Mathematics in Civil Engineering (CIE516)

Fall 1996-2001; Enrollment: 15, 35, 41, 35, 27, 33

EngiNet Distance Learning Fall 2001

Advanced Finite Element Analysis (CIE617)

Spring 1997-2001; Enrollment: 10, 13, 24, 24, 20

EngiNet Distance Learning Spring 2001

Boundary Element Methods (CIE645)

Spring 1990; Enrollment: 3

Newly Developed or Substantially Revised Undergraduate Courses:

Mechanics of Solids (EAS209)

Spring 2001, 2002; Enrollment: 139, 156

Dynamics (EAS208)

Spring 1997-2000; Enrollment: 85, 125, 129, 121

Courses Taught:

Applied Mechanics I (EAS205); Spring 1993; Enrollment: 126

Applied Mathematics in Civil Engineering (CIE312); Spring 1977; Enrollment: 20

Modern Methods in Engineering Computation (EAS451); Summer 1976; Enrollment: 25

Lectures Provided:

Probabilistic Analysis (CIE508)

Advanced Solid Mechanics (CIE511)

Finite Element Analysis (CIE526)

Passive and Active Structural Control (CIE626)

Structural Analysis and Design (ARC460)

Professional Experience (Academia):

University at Buffalo, Department of Civil, Structural and Environmental Engineering

Graduate Student Advisement

Ph. D. Dissertations (advisor):

- Li Lin, "Dynamics of Cyclic Symmetric Structures with Application to Turbomachinery Components," February 2003.
 Current Position: Senior Engineer, General Defense, Santa Clara, CA
- Ramesh Sant, "Evolutionary Structural Optimization for Aseismic Design," May 2002.
 Current Position: Structural Engineer, DMJM Harris, New York, NY
- Mikhail M. Grigoriev, "Polyregion Boundary Element Methods for Unsteady Convective Transport," August 2000.
 Current Position: Research Associate, CSEE, UB/SUNY
- Alireza Hadjesfandiari, "Theoretical and Computational Concepts in Engineering Mechanics," December 1998.
 Current Position: Research Associate, CSEE, UB/SUNY

Ph. D. Dissertations (technical advisor):

- Martin J. Stephenson (M.E. Ryan, advisor), "An Experimental and Theoretical Study of Sheet Sag in the Thermoforming Process," August 1997.
 Current Position: Senior Research Engineer, Aristech Acrylics, Florence, KY
- Jianming Chen (P.K. Banerjee, advisor), "Fundamental Solutions and Boundary Element Formulations for Dynamic Problems of Poroelasticity and Thermoelasticity," September 1992.
 Current Position: Research Engineer, EMC Corp., Westboro, MA
- Manoj B. Chopra (P.K. Banerjee, advisor), "Linear and Nonlinear Analyses of Axisymmetric Problems in Thermomechanics and Soil Consolidation," February 1992.
 Current Position: Associate Professor, Central Florida University, Orlando, FL

Ph. D. Dissertations (advisor, in-progress):

- Chao-Hua Wang, "Thermomechanics of Sliding Contact by Boundary Element Methods," Expected 2003.
- Yunli Wang, "Evolutionary Aseismic Design of Structures with Semi-Active Control Devices," Expected 2004.
- Hanshin Cho, "Cyclic Plasticity: Theory and Applications to Seismic Response Analysis," Expected 2004.
- Qihua Yu, "Lattice Models for Computational Mechanics of Quasi-brittle Composites," Expected 2004.
- Yufeng Hu, "Complex Adaptive Systems Approach for Seismic Resilient Design," Expected 2005
- Aslam Iqbal Syed, "Multi-scale Computational Mechanics of Fiber-Reinforced Composites," Expected 2005.

M.S. Theses (advisor):

- Claudia Marin Marin, "Approximate Limit Load Evaluation Using Linear Elastic Analysis with Modulus Variation," December 2002.
- Xiangjie Zhao, "Evolutionary Aseismic Design of Structures with Supplemental Viscous Dampers," June 2002.
- Sreeparna Sengupta, "A Comparative Analysis of Bi-Material Interfaces Using Boundary Element and Finite Element Analysis," June 2002.
- Xujie Yang, "Thermomechanical Analysis of Sliding Rings by BEM," February 2001.

Professional Experience (Academia):

University at Buffalo, Department of Civil, Structural and Environmental Engineering

Graduate Student Advisement (continued)

M.S. Theses (advisor):

- Rajesh Radhakrishnan, "Coupled Thermomechanical Analysis of Viscoelastic Dampers," May 2000.
- Mikhail Grigoriev, "Poly-region Boundary Element Methods for Viscous Fluid Flows," May 1999.
- Sin-Fan Tang, "Seismic Response of Tied Back Retaining Wall," August 1997.
- Surya Banduvula, "Boundary Element Applications to Non-Destructive Evaluation of Concrete," May 1997.

M.S. Theses (advisor, in-progress):

- Li-Yuan Lin, "Evolutional Aseismic Design of Structure with Viscoelastic Damper," Expected 2003.
- Jose Lockhart, "Viscous Magnetic Dampers for Passive Seismic Motion Control," Expected 2003.
- Swapna Phadnis, "Optimal Seismic Design of Structural Systems with Metallic Dampers," Expected 2004.

Ph. D. Dissertations (active committee member):

- Swaminathan Sureshkumar (P.K. Banerjee, advisor), "Advanced Non-linear Finite Element Analyses of Manufacturing Processes and Construction," October 1997.
- Debashis Basu (P.K. Banerjee, advisor), "Numerical Simulation of Structural Acoustics Using Coupled Finite Element and Boundary Element Techniques," September 1997.
- Chengyong Yan (C. Basaran, advisor), "A Damage Mechanics Based General Purpose Interface/Contact Element," August 1997.
- Himanshu Gupta (T.T. Soong, advisor), "Active Aerodynamic Control of Structures," May 1997.
- Keith A. Honkala (P.K. Banerjee, advisor), "Boundary Element Methods for Two-Dimensional Coupled Thermoviscous Flow," February 1992.
- Yifei Shi (P.K. Banerjee, advisor), "Fundamental Solutions and Boundary Element Formulations for Convective Fluid Flow," January 1992.
- Abu Syed Md. Israil (P.K. Banerjee, advisor), "Time-Domain Elastic and Inelastic Dynamic Analysis 2D Solids by Boundary Element Method," December 1990.
- Anindya Deb (P.K. Banerjee, advisor), "Advanced Development of the BEM for Linear and Nonlinear Analyses of Anisotropic Solids," December 1990.
- Saifuddin M. Mamoon (P.K. Banerjee, advisor), "Dynamic and Seismic Behavior of Deep Foundations," August 1990.

Ph. D. Dissertations (committee member):

- Yasuo Kitane (A. Aref, advisor), "Hybrid FRP-Concrete Bridge Deck and Superstructure Systems," February 2003.
- Wei Liu (G.C. Lee, advisor), "Optimization Strategy for Damper Configurations of Buildings Based on Performance Indices," February 2003.
- Mettupalayam V. Sivaselvan (A.M. Reinhorn, advisor), "Nonlinear Structural Analysis Towards Collapse Simulation – A Dynamical Systems Approach," February 2003.
- Florentino Leyte (S. Ahmad, advisor), "Analysis of Dynamically Loaded Foundations in Anisotropic Soils," May 2002.
- Yihong He (A. Aref, advisor), "Simplified Analysis and Optimum Design of Fiber Reinforced Polymer Web-Core Sandwich Bridge Deck Systems," May 2002.
- Daan Liang (M.P. Gaus, advisor), "Improved Reliability and Economic Modeling for New and Retrofitted Low-Rise Structures Subjected to Extreme Wind Hazards," September 2001.

Professional Experience (Academia):

University at Buffalo, Department of Civil, Structural and Environmental Engineering

Graduate Student Advisement (continued)

Ph. D. Dissertations (committee member):

Shih-Yu Chu (T.T. Soong, advisor), "Integration Issues in Implementation of Active Structural Control Systems," July 2001.

Bingyan Zhao (M.P. Gaus, advisor), "Methodologies for Automating the Collection and Processing of GPS-GIS Information for Transportation Systems," May 2001.

Kyung-Ho Park (P.K. Banerjee, advisor), "Development of BEM for Transient Coupled Problems," February 2001.

Ma-Tien Yang (P.K. Banerjee, advisor), "Development of a New Class of BEM Formulations for Steady State and Transient Analysis," August 2000.

David I. Schwartz (S.S. Chen, advisor), "Deterministic Interval Uncertainty Methods for Structural Analysis," September 1999.

Guoqing Lin (J.F. Atkinson, advisor), "Effects of Rotation on Turbulence in Free Surface Jets," September 1998.

Presently serving on committee for nine additional Ph. D. candidates (Z. Chen, N. Sigaher, K. Lee, D. Kusumastuti, D. Garcia Lopez, J. Chatterjee, E. Pavlou, I.-S. Ahn, W. Barham)

Ph. D. Dissertations (outside reader):

Andrew C. Bauer (A. Patra, advisor), "Efficient Solution Procedures for Adaptive Finite Element Methods – Applications to Elliptic Problems," September 2002.

Ta-Ming Shih (C-S. Liu, advisor), "Analysis of Nonlinear Normal Modes by Extended Normal Form Method," Department of Mechanical and Aerospace Engineering, May 2000.

Honglu Wang (J.D. Felsky, advisor), "Thermomechanical Analysis of the Rotating Impeller Lobes of a Roots-Type Multi-Recompression Heater," Department of Mechanical and Aerospace Engineering, September 1999.

Catalin I. Serpe (A. Soom, advisor), "The Role of Contact Compliance in the Deformation, Wear and Elastic Stability of Metallic Sliding Rings," Department of Mechanical and Aerospace Engineering, September 1999.

T.A. Yomi Obidi (J.D. Felsky, advisor), "Optimization of the Thermal Stress Relief of a Welded Solid Piece," Department of Mechanical and Aerospace Engineering, February 1999.

Professional Experience (Industry):

Harrison Radiator Division, General Motors Corporation

Senior Project Engineer (8/82-1/85, 10/85-5/86); Project Engineer (1/80-8/82)

Group leader for structural analysis.

Established the foundation for the structural analysis activity at Harrison by implementing the necessary analysis packages, training engineers in finite element analysis, and conducting seminars on structural analysis and design.

Performed finite element structural analysis and provided design recommendations for automotive radiators, heaters, and air conditioning compressors.

Conducted thermal and structural design/analysis investigations of high temperature heat exchangers including industrial gas turbine recuperators, fuel cell heat exchangers, and waste heat recuperators.

Directed experimental investigations of structural behavior including the utilization of holographic interferometry.

Supervised several General Motors Institute 5th Year Theses.

Ford Motor Company

Research Engineer B (10/78-1/80); Research Engineer C (9/77-10/78)

Performed large-scale finite element dynamic analysis of complex automotive body systems utilizing substructuring techniques. Analyzed buckling characteristics of sheet metal components. Responsible for Lincoln Mark VI body structural analysis.

Trained engineers in use of computer graphics and NASTRAN for finite element analysis.

Professional Affiliations and Service:

American Society of Civil Engineers - Member

Vice-President (2001-2002), Buffalo Section

Secretary (2000-2001), Buffalo Section

Treasurer (1999-2000), Buffalo Section

Director, Buffalo Section (1998-2002)

Member, Computational Mechanics Committee, Journal of Engineering Mechanics (1996-2000)

Faculty Advisor, University at Buffalo Student Chapter (1996-1998)

American Society of Mechanical Engineers - Member

United States Association for Computational Mechanics - Member

International Association for Structural Control - Member

Technical Referee

Journal of Engineering Mechanics, ASCE

Journal of Structural Engineering, ASCE

International Journal of Solids and Structures

International Journal of Numerical Methods in Engineering

Journal of Tribology, ASME

Engineering Analysis with Boundary Elements

Communications in Numerical Methods in Engineering

Professional Affiliations and Service:

National Science Foundation - Panelist, Mechanics and Materials Program, June 1997

ASCE/ASME/SES Engineering Mechanics Conference (McNU97), Session co-organizer and co-chair,

Development of BEM for Nonlinear Problems, Northwestern University, Evanston, IL, June 1997

ASCE 12th Engineering Mechanics Conference, Session co-chair, Boundary Element Methods for Dynamic Analysis, La Jolla, CA, May 1998

ASCE 13th Engineering Mechanics Conference, Theme session co-organizer, Boundary Element Methods, Baltimore, MD, June 1999

Sixth U.S. National Congress on Computational Mechanics, Session chair, Boundary Element Methods, Dearborn, MI, August 2001

Seventh U.S. National Conference on Earthquake Engineering, Session chair AT-2 and AT-3, Advanced Technologies, Boston, MA, July 2002

KEERC-MCEER Joint Seminar on Contributions to Earthquake Engineering, Session chair, Buffalo, NY, August 2002

International Conference on Advances and New Challenges in Earthquake Engineering Research, Session co-chair, Structural Analysis and Design, Hong Kong, August 2002

University and Community Service:

Graduate Studies Committee, CSEE, University at Buffalo, Director (2003-Present), Member (1997-1998), Student Member (1975-1977)

Undergraduate Studies Committee, CSEE, University at Buffalo, Member (1998-Present)

Faculty Senate Academic Planning Committee, University at Buffalo (2001-Present)

MCEER Director Search Committee, University at Buffalo (2003)

CSEE Faculty Search Committees, University at Buffalo (1999,2000,2003)

SEAS Faculty Personnel Committee, University at Buffalo (1999-2002)

SEAS Engineering Library Committee, University at Buffalo (1996-Present)

Buffalo-area Engineering Awareness for Minorities – Harrison Project Development Team (1984-1986)

Future Cities Educational Program - Buffalo Region Organizing Committee (1999-Present); Engineering Mentor, Casey Middle School, Amherst, NY (1996-1998), Highgate Heights, Buffalo, NY (1999)

NCAA Varsity Basketball - RPI (1971-1974)

NCAA Freshman Basketball - RPI (1970-1971)

Grants:

Computational Aseismic Design and Retrofit; PI; Multidisciplinary Center for Earthquake Engineering Research, National Science Foundation, 2000-2003, \$134,000.

Thermomechanical Modeling of Engineering Surfaces in Sliding Contact; co-PI with A. Soom (PI); National Science Foundation, 2000-2003, \$150,000;

The Application of a Finite Element-Based Large Increment Method for Nonlinear Structural Problems; co-PI with A. Aref (PI); National Science Foundation, 2000-2003, \$180,000.

Fragility of Passively-damped Structural Systems; PI; Multidisciplinary Center for Earthquake Engineering Research, National Science Foundation, 1998-2000, \$176,000.

Active Aerodynamic Control of Civil Structural Systems; PI; National Science Foundation, 1997-2002, \$210,000.

Grants: (continued)

Compressor Startup Simulation; co-PI with A. Soom (PI); Delphi Harrison Thermal Systems, General Motors Corp., 1999-2000, \$25,000.

Clutch Friction and Deformation; co-PI with A. Soom (PI); Delphi Harrison Thermal Systems, General Motors Corp., 1997-1999, \$167,000.

Dynamic Analysis of Turbomachinery Impellers; PI; Praxair, Inc., 1996-1998, \$38,000.

Computational Thermomechanical Design of Annealing Processes; PI; Strippit, Inc. and The Center for Industrial Effectiveness (TCIE), 1997-1998, \$21,000.

Boundary Element Investigation of Turbomachinery Stress and Fracture; PI; Praxair, Inc., 1995-1996, \$26,000.

Periodic and Transient Analysis of Fluid-Structure Systems in the Presence of Mean Flow; co-PI with P.K. Banerjee (PI); Office of Naval Research, 1992-1994, \$163,000.

Nonlinear Analysis of Composite Structures; co-PI with P.K. Banerjee (PI), A.L. Russo (co-PI) et al.; NASA Contract NAS3-26491, CUBRC, 1992-1994, \$270,000.

Development of BEM for Thermal Distortion in Casting Molds; co-PI with P.K. Banerjee (PI), D.P. Henry; General Motors Corporation, 1990-1991, \$200,000.

Development of BEM for Ceramic Composites; co-PI with P.K. Banerjee (PI), D.P. Henry (co-PI); NASA Grant NAG3-888, CUBRC, 1988-1992, \$312,000.

Development of Boundary Element Methods for Heat Transfer Analysis of Casting Molds; co-PI with P.K. Banerjee (PI); General Motors Corporation, 1987-1993, \$470,000.

Development of an Integrated BEM for Hot Fluid Structure Interaction; co-PI with P.K. Banerjee (PI); NASA Grant NAG3-712, CUBRC, 1986-1992, \$445,000.

Consulting Activities:

Development of BEM for Metal Cutting Applications; jointly with P.K. Banerjee; General Motors Corporation, 1992-1993, \$50,000.

Development of a Substructured BEM for Time Dependent Thermoelasticity; jointly with P.K. Banerjee; Daimler-Benz, 1991, \$75,000.

Graduate Students Supported on Grants (1996-Present):

Yufeng Hu, National Science Foundation, 2003-Present.
Yunli Wang, National Science Foundation, 2000-Present.
Chao-Hua Wang, National Science Foundation, 2000-Present.
Claudia Marin Marin, National Science Foundation, 2002.
Li-Yuan Lin, New York State, 2002.
Qihua Yu, National Science Foundation, 1999-2002.
Hanshin Cho, National Science Foundation, 1999-2001.
Mikhail Grigoriev, National Science Foundation, 1998-2000.
Ping Gu, National Science Foundation, 1998-2000.
Li Lin, Praxair and National Science Foundation, 1996-2000.
Ramesh Sant, National Science Foundation, 1998-2000.
Rajesh Radhakrishnan, National Science Foundation, 1999-2000.
Alireza Hadjesfandiari, Delphi Harrison Thermal Systems, 1997.
Rajesh Dasari, National Science Foundation, 1998.
Prasad Taluk, Strippit, 1997-1998.
Surya Banduvula, Praxair and Delphi Harrison Thermal Systems, 1996-1997.

Publications: Refereed Books

Soong, T.T. and Dargush, G.F., *Passive Energy Dissipation Systems in Structural Engineering*, John Wiley & Sons, Chichester, UK, 1997 (Chinese translation, 2003).

Publications: Refereed Monographs

Constantinou, M.C., Soong, T.T. and Dargush, G.F., *Passive Energy Dissipation for Seismic/Wind Design and Retrofit*, Multidisciplinary Center for Earthquake Engineering Research (MCEER) Monograph Series, University at Buffalo, Buffalo, NY, 1998.

Publications: Refereed Journal Papers

Grigoriev, M.M. and Dargush, G.F., "Efficiency and Accuracy of Higher-Order Boundary Element Methods for Steady Convective Heat Diffusion," *Numer. Heat Transfer*, in press.

Grigoriev, M.M. and Dargush, G.F., "Boundary Element Methods for Transient Convective Diffusion I. General Formulation and 1d Implementation," *Comp. Meth. Appl. Mech. Engrg.*, in press.

Grigoriev, M.M. and Dargush, G.F., "Boundary Element Methods for Transient Convective Diffusion II. 2d Implementation," *Comp. Meth. Appl. Mech. Engrg.*, in press.

Grigoriev, M.M. and Dargush, G.F., "Boundary Element Methods for Transient Convective Diffusion III. Numerical Examples," *Comp. Meth. Appl. Mech. Engrg.*, in press.

Dargush, G.F. and Hadjesfandiari, A., "Generalized Stress Intensity Factors for Strength Analysis of Bi-material Interfaces," *Mech. Advanced Materials and Struct.*, in press.

Hadjesfandiari, A. and Dargush, G.F., "Boundary Eigensolutions in Elasticity, II. Application to Computational Mechanics," *Int. J. Solids and Structures*, 40, 1001-1031 (2003).

Grigoriev, M.M. and Dargush, G.F., "Higher Order Boundary Element Methods for Transient Heat Diffusion, Part I: Bounded Flux Formulations," *Int. J. Num. Meth. Engrg.*, 55, 1-40 (2002).

Dargush, G.F. and Grigoriev, M.M., "Higher Order Boundary Element Methods for Transient Heat Diffusion, Part II: Singular Flux Formulations," *Int. J. Num. Meth. Engrg.*, 55, 41-54 (2002).

Stephenson, M.J. and Dargush, G.F., "Development of a Curvilinear Viscoelastic Constitutive Relationship for Time Dependent Materials. Part A: Theoretical Discussion," *Polymer Engineering and Science*, 42, 519-528 (2002).

Stephenson, M.J. and Dargush, G.F., "Development of a Curvilinear Viscoelastic Constitutive Relationship for Time Dependent Materials. Part B: Example Problems," *Polymer Engineering and Science*, 42, 529-538 (2002).

Hadjesfandiari, A. and Dargush, G.F., "Boundary Eigensolutions in Elasticity, I. Theoretical Development," *Int. J. Solids and Structures*, 38, 6589-6625 (2001).

Hadjesfandiari, A. and Dargush, G.F., "Theory of Boundary Eigensolutions in Engineering Mechanics," *J. Appl. Mech.*, ASME, 68, 101-108 (2001).

Publications: Refereed Journal Papers (continued)

Hadjefandiari, A. and Dargush, G.F., "Computational Mechanics Based on the Theory of Boundary Eigensolutions," *Int. J. Num. Meth. Engrg.*, 50, 325-346 (2001).

Dargush, G.F. and Grigoriev, M.M., "A Poly-region Boundary Element Method for Two-dimensional Boussinesq Flows," *Comp. Meth. Appl. Mech. Engrg.*, 190, 1261-1287 (2000).

Gupta, H., Soong, T.T. and Dargush, G.F., "Active Aerodynamic Bidirectional Control of Structures, Part I: Modeling and Experiments," *Engineering Structures*, 22, 379-388 (2000).

Gupta, H., Soong, T.T. and Dargush, G.F., "Active Aerodynamic Bidirectional Control of Structures, Part II: Tall Buildings," *Engineering Structures*, 22, 389-399 (2000).

Grigoriev, M.M. and Dargush, G.F., "A Poly-region Boundary Element Method for Incompressible Viscous Fluid Flows," *Int. J. Num. Meth. Engrg.*, 46, 1127-1158 (1999).

Stephenson, M.J., Dargush, G.F. and Ryan, M.E., "Application of One-Dimensional Mechanical Formulations to Model the Sagging Behavior of a Polymer Sheet," *Polymer Engineering and Science*, 39, 2199-2221 (1999).

Dargush, G.F. and Chopra, M.B., "Dynamic Analysis of Axisymmetric Foundations on Poroelastic Media," *J. Engrg. Mech.*, ASCE, 122, 623-632 (1996).

Dargush, G.F. and Soong, T.T., "Behavior of Metallic Plate Dampers in Seismic Passive Energy Dissipation Systems," *Earthquake Spectra*, 11, 545-568 (1995).

Chen, J. and Dargush, G.F., "Boundary Element Method for Dynamic Poroelastic and Thermoelastic Analyses," *Int. J. Solids and Structures*, 32, 2257-2278 (1995).

Makris, N., Dargush, G.F. and Constantinou, M.C., "Dynamic Analysis of Viscoelastic Fluid Dampers," *J. Engrg. Mech.*, ASCE, 121, 1114-1121 (1995).

Stephenson, D.A., Barone, M.R. and Dargush, G.F., "Thermal Expansion of the Workpiece in Turning," *J. Engrg. Industry*, ASME, 117, 542-550 (1995).

Chopra, M.B. and Dargush, G.F., "Boundary Element Analysis of Stresses in an Axisymmetric Soil Mass Undergoing Consolidation," *Int. J. Num. Anal. Meth. Geomechanics*, 19, 195-218 (1995).

Chopra, M.B. and Dargush, G.F., "Development of BEM for Thermoplasticity," *Int. J. Solids and Structures*, 31, 1635-1656 (1994).

Makris, N., Constantinou, M.C. and Dargush, G.F., "Analytical Model of Viscoelastic Liquid Dampers," *J. Struct. Engrg.*, ASCE, 119, 3310-3325 (1993).

Chopra, M.B. and Dargush, G.F., "Thermal Stress Analysis of Axisymmetric Bodies Via the Boundary Element Method," *Comp. Meth. Appl. Mech. Engrg.*, 108, 53-71 (1993).

Raveendra, S.T., Banerjee, P.K. and Dargush, G.F., "Three Dimensional Analysis of Thermally Loaded Cracks," *Int. J. Num. Meth. Engrg.*, 36, 1909-1926 (1993).

Publications: Refereed Journal Papers (continued)

Makris, N., Dargush, G.F. and Constantinou, M.C., "Dynamic Analysis of Generalized Viscoelastic Fluids," *J. Engrg. Mech.*, ASCE, 119, 1663-1679 (1993).

Dargush, G.F. and Banerjee, P.K., "Time Dependent Axisymmetric Thermoelastic Boundary Element Analysis," *Int. J. Num. Meth. Engrg.*, 33, 695-717 (1992).

Chopra, M.B. and Dargush, G.F., "Finite Element Analysis of Time Dependent Large Deformation Problems," *Int. J. Num. Anal. Meth. Geomechanics*, 16, 101-130 (1992).

Kaynia, A.M. and Dargush, G.F., "Fundamental Solutions of Dynamic Poroelasticity and Generalized Thermoelasticity," *J. Engrg.*, Islamic Republic of Iran, 5(1), 1-9 (1992).

Dargush, G.F. and Banerjee, P.K., "A New Boundary Element Method for Three Dimensional Coupled Problems of Consolidation and Thermoelasticity," *J. Applied Mechanics*, ASME, 58, 28-36 (1991).

Israil, A.S.M. and Dargush, G.F., "Dynamic Fracture Mechanics Studies by Time Domain BEM," *Engrg. Fract. Mech.*, 39, 315-328 (1991).

Dargush, G.F. and Banerjee, P.K., "Steady Thermoviscous Flow by the Boundary Element Method," *Int. J. Num. Meth. Engrg.*, 31, 1605-1626 (1991).

Dargush, G.F. and Banerjee, P.K., "Application of the Boundary Element Method to Transient Heat Conduction," *Int. J. Num. Meth. Engrg.*, 31, 1231-1247 (1991).

Dargush, G.F. and Banerjee, P.K., "Boundary Element Methods for Time Dependent Viscous Flow," *Int. J. Num. Meth. Engrg.*, 31, 1627-1648 (1991).

Dargush, G.F. and Banerjee, P.K., "Boundary Element Methods for Three Dimensional Thermoplasticity," *Int. J. Solids Struct.*, 28, 549-565 (1991).

Dargush, G.F. and Banerjee, P.K., "A Boundary Element Method for Axisymmetric Soil Consolidation," *Int. J. Solids Struct.*, 28, 897-915 (1991).

Dargush, G.F. and Banerjee, P.K., "Boundary Element Methods in Three-dimensional Thermoelasticity," *Int. J. Solids Structures*, 26, 199-216 (1990).

Dargush, G.F. and Banerjee, P.K., "Development of an Integrated BEM for Hot-Fluid Structure Interaction," *Transactions of the ASME*, 89-GT-128, 11 pp., 1989, and *J. Engrg. Gas Turb. Power*, ASME, 112, 243-250 (1990).

Dargush, G.F. and Banerjee, P.K., "Advanced Development of the Boundary Element Method for Steady-state Heat Conduction," *Int. J. Num. Meth. Engrg.*, 28, 2123-2142 (1989).

Dargush, G.F. and Banerjee, P.K., "Development of the Boundary Element Method for Time-dependent Planar Thermoelasticity," *Int. J. Solids and Structures*, 25, 999-1021 (1989).

Dargush, G.F. and Banerjee, P.K., "A Time Domain Boundary Element Method for Poroelasticity," *Int. J. Num. Meth. Engrg.*, 28, 2423-2449 (1989).

Publications: Refereed Journal Papers (continued)

Drury, C.G., Brodsky, K. and Dargush, G., "Analysis of Glass Breakage in Window Accidents," *Accid. Anal. & Prev.*, 14, 443-456 (1982).

Publications: Book Chapters

Soong, T.T. and Dargush, G.F., "Passive Energy Dissipation and Active Control," Chapter 27, *Handbook of Structural Engineering*, CRC Press, Boca Raton, Florida, 1997.

Chopra, M.B., Dargush, G.F. and Banerjee, P.K., "Finite Deformation Analysis of Some Soil Penetration Problems," Chapter 5, *Developments in Soil Mechanics and Foundation Engineering-4*, ed. P.K. Banerjee and R. Butterfield, Elsevier Science Publishers, England, 1991.

Dargush, G.F. and Banerjee, P.K., "Advanced Boundary Element Methods for Steady Incompressible Thermoviscous Flow," Chapter 2, pp. 55-84, *Developments in Boundary Element Methods - 6*, ed. P.K. Banerjee, L. Morino, Elsevier Science Publishers, England, 1990.

Dargush, G.F. and Banerjee, P.K., "A Time-dependent Incompressible Viscous BEM for Moderate Reynolds Numbers," Chapter 3, pp. 85-116, *Developments in Boundary Element Methods - 6*, ed. P.K. Banerjee and L. Morino, Elsevier Science Publishers, England, 1990.

Dargush, G.F. and Banerjee, P.K., "Boundary Element Methods for Poroelastic and Thermoelastic Analyses," Chapter 4, pp. 119-156, *Developments in Boundary Element Methods - 5*, ed. P.K. Banerjee and R.B. Wilson, Elsevier Science Publishers, England, 1989.

Publications: Conference Proceedings

Wang, C.-H., Soom, A. and Dargush, G.F., "Transient Thermoelastic Contact of Sliding Rings with Axisymmetric Roughness," STLE/ASME International Joint Tribology Conference, Ponte Verde Beach, FL, October 2003.

Barham, W., Aref, A.J. and Dargush, G.F., "Derivation and Implementation of a Flexibility-based Large Increment Method for Solving Non-linear Structural Problems," Civil-Comp 2003, Egmond aan Zee, The Netherlands, September 2003.

Soom, A., Serpe, C.I. and Dargush, G.F., "High Frequency Noise Generation from Components in Sliding Contact: Flutter Instabilities including the Role of Surface Roughness and Friction," Leeds-Lyon Symposium on Tribology, Lyon, France, September 2003.

Wang, C.-H., Dargush, G.F., Soom, A. and Grigoriev, M.M., "Multiscale Thermomechanical Analysis of Sliding Rings from Short-time Transients to Steady-state," Leeds-Lyon Symposium on Tribology, Lyon, France, September 2003.

Dargush, G.F., Green, M.L. and Wang, Y., "Evolutionary Multi-hazard Design and Retrofit of Structural Systems," Extreme Loading 2003, Toronto, Canada, August 2003.

Ahn, I.-S., Chen, S.S. and Dargush, G.F., "Ratcheting and Shakedown of a SDOF System under Sinusoidal and Earthquake Excitations," Extreme Loading 2003, Toronto, Canada, August 2003.

Publications: Conference Proceedings (continued)

Dargush, G.F. and Grigoriev, M.M., "Efficient Boundary Element Methods for the Time-dependent Convective Diffusion Equation," ASME Summer Heat Transfer Conference, Las Vegas, NV, July 2003.

Grigoriev, M.M. and Dargush, G.F., "A Fast Multi-level Boundary Element Method for the Steady Heat Diffusion Equation," ASME Summer Heat Transfer Conference, Las Vegas, NV, July 2003.

Ahn, I.-S., Chen, S.S. and Dargush, G.F., "Quasi-periodic Motion and Nonlinear Dynamic Shakedown," 16th Engineering Mechanics Conference, ASCE, Seattle, WA, July 2003.

Grigoriev, M.M. and Dargush, G.F., "Efficient Multi-grid Method for Steady-state Heat Diffusion Equation," 36th AIAA Thermophysics Conference, Orlando, FL, June 2003.

Dargush, G.F. and Grigoriev, M.M., "Boundary Element Methods for Unsteady Convective Heat Diffusion," 36th AIAA Thermophysics Conference, Orlando, FL, June 2003.

Hadjefandiari, A.R. and Dargush, G.F., "Weighted Traction Boundary Element Methods for Strength Analysis of Bi-materials," Second MIT Conference on Computational Fluid and Solid Mechanics, Cambridge, MA, ed. K.J. Bathe, Elsevier, 2003.

Grigoriev, M.M. and Dargush, G.F., "A Fast Multi-level Multi-grid Method for the Laplace Equation," Second MIT Conference on Computational Fluid and Solid Mechanics, Cambridge, MA, ed. K.J. Bathe, Elsevier, 2003.

Dargush, G.F. and Grigoriev, M.M., "Boundary Element Methods for Highly Convective Unsteady Flows," Second MIT Conference on Computational Fluid and Solid Mechanics, Cambridge, MA, ed. K.J. Bathe, Elsevier, 2003.

Dargush, G.F. and Lee, G.C., "MCEER Advanced Technology Research for Next Generation Seismic Resilient Buildings," 35th Joint Panel Meeting, U.S.-Japan Panel on Wind and Seismic Effects, Tsukuba, Japan, May, 2003.

Dargush, G.F., Green, M.L. and Zhao, X., "Evolutionary Aseismic Design of Passively Damped Structural Systems," International Conference on Advances and New Challenges in Earthquake Engineering Research, Harbin, China, August 2002.

Dargush, G.F., Cho, H. and Radhakrishnan, R., "Behavior of Seismic Protective Devices: A Computational Mechanics Approach," International Conference on Advances and New Challenges in Earthquake Engineering Research, Hong Kong, 397-404, August 2002.

Dargush, G.F. and Green, M.L., "Evolutionary Aseismic Design and Retrofit," KEERC-MCEER Joint Seminar on Contributions to Earthquake Engineering, Buffalo, NY, August 2002.

Dargush, G.F. and Sant, R.S., "Computational Aseismic Design and Retrofit with Application to Passively Damped Structures," Seventh U.S. Nat. Conf. Earthquake Engrg., EERI, Boston, MA, July 2002.

Dargush, G.F., Cho, H. and Sant, R.S., "Cyclic Elastoplastic Analysis of Metallic Dampers for Seismic Energy Dissipation," Seventh U.S. National Conf. Earthquake Engrg., EERI, Boston, MA, July 2002.

Publications: Conference Proceedings (continued)

Grigoriev, M.M. and Dargush, G.F., "Higher-Order Boundary Element Methods for Unsteady Convective Transport," IMECE2001 HTD-24105, ASME Winter Annual Meeting, New York, NY, November 2001.

Hadjefandiari, A.R. and Dargush, G.F., "Computational Elasticity Based on Boundary Eigensolutions," First MIT Conference on Computational Fluid and Solid Mechanics, Cambridge, MA, ed. K.J. Bathe, Elsevier, 227-231, 2001.

Grigoriev, M.M. and Dargush, G.F., "A Poly-Region Boundary Element Method for Buoyancy-Driven Flows," First MIT Conference on Computational Fluid and Solid Mechanics, Cambridge, MA, ed. K.J. Bathe, Elsevier, 818-821, 2001.

Soom, A., Serpe, C.I. and Dargush, G.F., "Thermomechanics of Sliding Contact: When Micro Meets Macro," Fundamentals of Tribology and Bridging the Gap Between the Macro- and Micro/Nanoscales, Kluwer Academic, 467-485, 2001.

Dargush, G.F. and Sant, R.S., "Computational Aseismic Design and Retrofit with Application to Passively Damped Structures," Mitigation of Earthquake Disaster by Advanced Technologies-2, MCEER, Las Vegas, NV, MCEER-01-0002, 175-185, 2000.

Dargush, G.F., Serpe, C.I. and Soom, A., "Thermomechanical Finite Element Analysis of Model Sliding Rings to Describe the Engagement and Wear of Electromagnetic Clutches," Leeds-Lyon Tribology Symposium, Lyon, France, September 2000.

Soong, T.T. and Dargush, G.F., "The Role of Mechanics in Structural Control Against Earthquakes," 23rd National Mechanics Conference, Taipei, Taiwan, December 1999.

Grigoriev, M.M. and Dargush, G.F., "Benchmark Boundary Element Solution for Some Problems Governed by the Boussinesq Equations," IMECE99, ASME Winter Annual Meeting, Nashville, TN, November 1999.

Grigoriev, M.M. and Dargush, G.F., "Poly-region Boundary Element Methods for Natural Convection," 13th ASCE Engineering Mechanics Conference, Baltimore, MD, June 1999.

Chun, L., Chopra, M.B. and Dargush, G.F., "Response of a Pile to Impinging Seismic Waves using a Poroelastic Boundary Element Method," 13th ASCE Engrg Mechanics Conf., Baltimore, MD, June 1999.

Serpe, C.I., Dargush, G.F. and Soom, A., "Multidisciplinary Aspects of the Modeling of Sliding Contacts," 3rd World Congress of Structural and Multidisciplinary Optimization, Buffalo, NY, May 1999.

Gupta, H., Soong, T.T. and Dargush, G.F., "Active Aerodynamic Bi-directional Control of Structures," Second World Conference on Structural Control, Kyoto, Japan, June 1998.

Serpe, C.I., Dargush, G.F. and Soom, A., "Contact Stiffness and the Thermomechanical Response of Sliding Rings," International Symposium on Impact and Friction of Solids, Structures, and Machines, Ottawa, Canada, June 1998.

Hadjefandiari, A. and Dargush, G.F., "Boundary Element Methods for Dynamic Fracture Mechanics," 12th ASCE Engineering Mechanics Conference, LaJolla, CA, May 1998.

Publications: Conference Proceedings (continued)

Chopra, M.B. and Dargush, G.F., "Seismic Response of Layered Poroelastic Media Using BEM," 12th ASCE Engineering Mechanics Conference, LaJolla, CA, May 1998.

Grigoriev, M.M. and Dargush, G.F., "Convective Boundary Element Viscous Flow Formulations," 12th ASCE Engineering Mechanics Conference, LaJolla, CA, May 1998.

Chopra, M.B. and Dargush, G.F., "Dynamic Response of Embedded Circular Foundations using a Poroelastic BEM," Proceedings of the Ninth Conference of the International Association for Computer Methods and Advances in Geomechanics (IACMAG), Wuhan, China, 1997.

Chopra, M.B. and Dargush, G.F., "Dynamic Response of Embedded Strip and Rectangular Foundations using a Poroelastic BEM," Proceedings of the 19th International Conference of the Boundary Element Methods (BEM 19), Rome, Italy, 1997.

Dargush, G.F., "Boundary Element Methods for Viscous Flows," ASCE/ASME/SES Engineering Mechanics Conference (McNU97), Evanston, IL, June 1997.

Stephenson, M.J., Ryan, M.E. and Dargush, G.F., "Experimental Study and Finite Deformation Analysis of the Sagging Behavior of a Polymer Sheet," Society of Plastic Engineers, ANTEC '97, Toronto, Canada, May 1997.

Dargush, G.F. and Soong, T.T., "The Role of Computational Continuum Mechanics in Structural Control," Eleventh World Conference on Earthquake Engineering, Acapulco, Mexico, June 1996.

Chopra, M.B. and Dargush, G.F., "Dynamic Analysis of Axisymmetric Foundations on a Poroelastic Stratum using BEM," 10th ASCE Engineering Mechanics Conference, Boulder, Colorado, May 1995.

Dargush, G.F. and Soong, T.T., "Recent Structural Applications of Passive Energy Dissipation in North America," Applied Technology Council, ATC 15-5, Victoria, British Columbia, September 1994.

Makris, N., Dargush, G.F. and Constantinou, M.C., "Dynamic Analysis of Generalized Viscoelastic Systems with the Boundary Element Method," Advances in Computational Mechanics, CIVIL-COMP, Athens, Greece, September 1994.

Makris, N. and Dargush, G.F., "A Generalized Boundary Element Formulation for Dynamic Analysis of Viscoelastic Systems," First World Conference on Structural Control, Pasadena, California, August 1994.

Chopra, M.B. and Dargush, G.F., "Application of BEM to Problems of Elastoplasticity and Nonlinear Soil Consolidation," Boundary Element Applications in Engineering, Orlando, Florida, March 1994.

Dargush, G.F., Raveendra, S.T. and Banerjee, P.K., "Boundary Element Formulations for Structural Acoustics Including Mean Flow Effects," ASME, Winter Meeting, New Orleans, December 1993.

Chopra, M.B., Dargush, G.F. and Banerjee, P.K., "Development of BEM for Thermoplastic Analysis," Second U.S. National Congress for Computational Mechanics, Washington, D.C., August 1993.

Publications: Conference Proceedings (continued)

Dargush, G.F., Raveendra, S.T. and Banerjee, P.K., "Development of BEM for Structural Acoustic Analysis in Presence of Mean Flow," Second U.S. National Congress for Computational Mechanics, Washington, D.C., August 1993.

Banerjee, P.K., Henry, D.P. and Dargush, G.F., "Micromechanical Studies of Composites by BEM," ASME, Winter Annual Meeting, Atlanta, December 1991.

Banerjee, P.K., Dargush, G.F. and Honkala, K.A., "Progress in Nonlinear Fluid Dynamics By BEM Via Examples," First U.S. National Congress for Computational Mechanics, Chicago, July 1991.

Dargush, G.F. and Chopra, M.B., "An Advanced BEM for Thermoplastic and Nonlinear Consolidation Analysis," First U.S. National Congress for Computational Mechanics, Chicago, July 1991.

Banerjee, P.K., Dargush, G.F. and Honkala, K.A., "Advanced Boundary Element Methods for Incompressible Thermoviscous Flow," International Symposium on BEM, East Hartford, October 1989.

Banerjee, P.K., Henry, D.P. and Dargush, G.F., "Progress in Applications of BEM to Inelastic Analysis of Solids," International Symposium on BEM, East Hartford, October 1989.

Banerjee, P.K. and Dargush, G.F., "Linear and Nonlinear Problems of Thermomechanics by BEM," IUTAM/IACM Symposium on Discretization Methods in Structural Mechanics, Vienna, Austria, 1989.

Dargush, G.F. and Banerjee, P.K., "Development of an Integrated BEM for Hot Fluid-Structure Interaction," NASA Advanced Earth-to-Orbit Propulsion Technology Conference, NASA Conference Publication 3012, Huntsville, May 1988.

Banerjee, P.K. and Dargush, G.F., "Progress in BEM Applications in Geomechanics Via Examples," 6th Int. Conf. on Num. Methods in Geomechanics, Innsbruck, Austria, April 1988.

Dargush, G.F. and Banerjee, P.K., "Development of an Integrated BEM for Hot-Fluid Structure Interaction," NASA Conference on Structural Integrity and Durability, Cleveland, May 1987.

Publications: Research Papers and Reports

Alesch, D.J., Dargush, G.F., Grigoriu, M., Petak, W.J. and von Winterfeldt, D., "Decision Models: Approaches for Achieving Seismic Resilience," MCEER Research Progress and Accomplishments 2002-2003, Buffalo, NY, May 2003.

Constantinou, M.C., Dargush, G.F., Lee, G.C., Reinhorn, A.M. and Whittaker, A.S., "Analysis and Design of Buildings with Added Energy Dissipation Systems," MCEER Research Progress and Accomplishments 2000-2001, Buffalo, NY, pp. 103-124, May 2001.

Dargush, G.F., Banerjee, P.K. and Shi, Y., "Development of an Integrated BEM Approach for Hot Fluid Structure Interaction," Calspan-UB Research Center, Final Report, NASA Grant NAG3-712, 380 pp., 1992.

Dargush, G.F., Banerjee, P.K. and Shi, Y., "Development of an Integrated BEM Approach for Hot Fluid Structure Interaction," Calspan-UB Research Center, Annual Report, NASA Grant NAG3-712, 154 pp., 1990 (NASA Contractor Report 187236, October 1991).

Publications: Research Papers and Reports (continued)

Henry, D.P., Banerjee, P.K. and Dargush, G.F., "Development of BEM for Ceramic Composites," Calspan-UB Research Center, Annual Report, NASA Grant NAG3-888, 125 pp., 1990.

Dargush, G.F. and Banerjee, P.K., "Development of an Integrated BEM Approach for Hot Fluid Structure Interaction," Calspan-UB Research Center, Annual Report, NASA Grant NAG3-712, 116 pp., 1989 (NASA Contractor Report 189052, November 1991).

Henry, D.P., Banerjee, P.K. and Dargush, G.F., "Development of BEM for Ceramic Composites," Calspan-UB Research Center (CUBRC), Annual Report, NASA Grant NAG3-888, 93 pp., 1989.

Dargush, G.F., Banerjee, P.K. and Honkala, K.A., "Development of an Integrated BEM Approach for Hot Fluid Structure Interaction," CUBRC, Annual Report, NASA Grant NAG3-712, 110 pp., 1988.

Henry, D.P., Banerjee, P.K. and Dargush, G.F., "Development of BEM for Ceramic Composites," Calspan-UB Research Center (CUBRC), Annual Report, NASA Grant NAG3-888, 85 pp., 1988.

Dargush, G.F., Banerjee, P.K. and Dunn, M.G., "Development of an Integrated BEM Approach for Hot Fluid-Structure Interaction," CUBRC, Annual Report, NASA Grant NAG3-712, 92 pp., 1987.

Dargush, G.F., Manolis, G.D., Banerjee, P.K. and Dunn, M.G., "Development of an Integrated Boundary Element Approach to Fluid Structure Interaction for SSME," Calspan-UB Research Center, Annual Report, NASA Grant NAG3-712, 54 pp., 1986.

Short Courses:

"Finite Element Analysis of Structures," Short Course presented by A. Aref and G.F. Dargush, New York State Department of Transportation, Albany, NY, July 26-27, 2001.

"Boundary Element Methods in Engineering Mechanics," Short Course presented by P.K. Banerjee, G.F. Dargush and M.L. Green, NASA/Glenn, Cleveland, OH, November 27-29, 2000.

"Mathematical Modeling of Passive Devices and Systems," NCEER/EERC Short Course on Passive Energy Dissipation for Seismic/Wind Design and Retrofit, San Francisco (October 1996) and Los Angeles (February 1997).

Selected Seminars and Presentations:

"Multi-level Boundary Element Methods for Stokes Flows," Seventh U.S. National Congress on Computational Mechanics, Albuquerque, NM, August 2003.

"Structural Dynamic Analysis for Computational Seismic Design," Second MIT Conference on Computational Fluid and Solid Mechanics, Cambridge, MA, June 2003.

"Transient Thermomechanical Contact of Rough Surfaces in Sliding Contact: Some Surprising Links between Micro-Roughness and Component Level Deformations," A. Soom and G.F. Dargush, Gordon Research Conference on Tribology, Bristol, RI, August 2002.

Selected Seminars and Presentations: (continued)

“Resilient Design Using a Complex Adaptive Systems Approach,” MCEER Workshop on Lessons from the World Trade Center Terrorist Attack: Management of Complex Civil Emergencies and Terrorism-Resistant Civil Engineering Design, New York, NY, June 2002.

“Boundary Eigensolutions and the Mechanics of Advanced Composites,” IMECE2001, ASME Winter Annual Meeting, New York, NY, November 2001.

“A Boundary Element Formulation for Transient Heat Diffusion with Singular Heat Flux,” Sixth U.S. National Congress on Computational Mechanics, Dearborn, MI, August 2001.

“Research Communication,” MCEER REU Communications Workshop, Buffalo, NY, August 2000, July 2001 and August 2002.

“Analysis of Bi-Material Interfaces and Boundary Eigensolutions,” First MIT Conference on Computational Fluid and Solid Mechanics, Cambridge, MA, June 2001.

“A Poly-region Boundary Element Method for Buoyancy-driven Flows,” First MIT Conference on Computational Fluid and Solid Mechanics, Cambridge, MA, June 2001.

“Thermomechanical Contact and Wear of Rough Surfaces in Sliding Contact,” A. Soom and G.F. Dargush, ONR/AFOSR/NSF Tribology Program Review, Duck Key, FL, June 2001.

“Computational Design and Retrofit with Application to Passive Energy Dissipation Systems,” Cannon Design, Grand Island, NY, October 2000.

“Multidisciplinary Aspects of the Modeling of Sliding Contacts,” 3rd World Congress of Structural and Multidisciplinary Optimization, Buffalo, NY, May 1999.

“Active Aerodynamic Bi-directional Control of Structures,” Second World Conference on Structural Control, Kyoto, Japan, June 1998.

“Seismic Response of Layered Poroelastic Media Using BEM,” 12th ASCE Engineering Mechanics Conference, LaJolla, CA, May 1998.

“Boundary Element Methods for Viscous Flows,” ASCE/ASME/SES Engineering Mechanics Conference (McNU97), Evanston, IL, June 1997.

“Application of Boundary Element Methods in Dynamic Analysis and Fracture Mechanics,” Dept. of Civil Engineering, University at Buffalo, April 1997.

“Earthquakes and Structures: An Engineering Primer,” NCEER Summer Seminar on Earthquake Information Resources for Teachers of Grades 7-12, Buffalo, August 1996.

“Engineering Analysis of Coupled Phenomena: A Computational Mechanics Approach,” Dept. of Civil Engineering, University at Buffalo, April 1996.

“Boundary Element Methods: An Alternative Approach for Engineering Analysis,” Dept. of Mathematics, University at Buffalo, October 1995.

Selected Seminars and Presentations: (continued)

“The Role of Computational Continuum Mechanics in Structural Control,” Dept. of Civil Engineering, University at Buffalo, March 1995.

“A Generalized Boundary Element Formulation for Dynamic Analysis of Viscoelastic Systems,” First World Conference on Structural Control, Pasadena, California, August 1994.

“Boundary Element Methods in Engineering Mechanics,” Dept. of Civil Engineering and Geological Sciences, University of Notre Dame, May 1994.

“Periodic and Transient Analysis of Fluid-Structure Systems in the Presence of Mean Flow,” Office of Naval Research, Review Meeting, Austin, TX, January 1994.

“Periodic and Transient Analysis of Fluid-Structure Systems in the Presence of Mean Flow,” Office of Naval Research, Review Meeting, Arlington, VA, January 1993.

“Boundary Element Methods for Time-dependent Problems,” Dept. of Civil Engineering, University at Buffalo, April 1990.

“Development of an Integrated BEM for Hot-Fluid Structure Interaction,” ASME, Gas Turbine Conference and Exposition, Toronto, Canada, May 1989.

“Development of an Integrated BEM for Hot Fluid Structure Interaction,” NASA Review Meeting, Cleveland, OH, March 1987.

“Thermal Response of an Industrial Waste Heat Recuperator,” ASME Winter Annual Meeting, Chicago, IL, December 1980.

Scholastic Awards:

Rensselaer Scholarship, 1970-1974.

New York State Regents Scholarship, 1970-1974.

Dean’s List, Rensselaer Polytechnic Institute, 1970-1974.

Rensselaer Medal for Excellence in Mathematics, Kensington High School, Buffalo, 1970.