

# CURRICULUM VITAE

Marek Z. Elżanowski

## EDUCATION

- Ph.D. 1975 *Rational Mechanics*, Polish Academy of Sciences, Warsaw, Poland
- M.Sc. 1971 *Mathematics and Mechanics*, University of Warsaw, Warsaw, Poland

## EMPLOYMENT

- 1995-present, Portland State University (Professor of Mathematical Sciences)
- May - June 2010, Portland State University (Acting Chair, Fariborz Maseeh Department of Mathematics and Statistics)
- December 2009 - March 2010, Portland State University (Chair, Fariborz Maseeh Department of Mathematics and Statistics)
- 2003 – 09, Portland State University (Chair, Department of Mathematics and Statistics)
- 1991 – 95, Portland State University, (Associate Professor of Mathematical Sciences)
- 1988 – 91, Portland State University (Assistant Professor of Mathematical Sciences)
- 1982 – 88, University of Calgary (Research Associate and Instructor in Mathematics and Mechanical Engineering)
- 1981 – 82, University of Calgary (Research Associate in Mechanical Engineering)
- 1980 – 81, University of Nairobi, Kenya (Lecturer in Mathematics)
- 1975 – 80, Institute of Fundamental Technological Research, Polish Academy of Sciences, Warsaw, Poland (Assistant Professor of Rational Mechanics)
- 1974 – 75, Institute of Fundamental Technological Research, Polish Academy of Sciences, Warsaw, Poland (Lecturer)

## Postdoctoral Appointments

- 1976 – 77, Mathematical Institute, University of Oxford, Oxford, UK

## Visiting Appointments

- University of Nottingham, School of Mathematical Sciences, Division of Theoretical Mechanics, October 2002 - March 2003

- Technical University Berlin, Department of Theoretical Physics, August-September 2002
- University of Calgary, Department of Mechanical Engineering, September - December 2001, July-August 1991, July-August 1990, July-September 1989
- University of Mannheim, Department of Mathematics, August/September 2000, June 1996, March-April 1995, September 1991, October 1989
- Weierstrass Institute of Applied Analysis and Stochastics (WIAS), Berlin, September 1999
- Kielce University of Technology, Department of Mathematics, October 1994 - June 1995
- University of Ulm, Department of Mathematics, July 1994
- Australian National University, Department of Mathematics, September - October 1989

### **Adjunct Appointments**

- 1990 – 93, Oregon Graduate Institute (Assistant Professor of Applied Physics and Electrical Engineering)
- 1988 – 89, University of Calgary (Assistant Professor of Mathematics)

### **FIELDS of INTEREST**

- Mathematical theory of defects, evolution of material structures,
- Frame bundles, G-structures, theory of connections, deformations of G-structures and Lie algebras,
- Shock waves in nonlinear elasticity,
- Hyperbolic waves,
- Cavitation in nonlinear elasticity, direct variational methods.

### **PUBLICATIONS**

**Dissertation, date and name of director:**

- *Geometrical Properties of the State Space in Neoclassical Thermodynamics* (in Polish), Ph.D. Thesis, Institute of Fundamental Technological Research, Polish Academy of Sciences, 1975, Krzysztof Wilmański
- *On the Group of Admissible Transformations of Flat, Plastic Flow* (in Polish), M.Sc. Thesis, Department of Mathematics and Mechanics, University of Warsaw, 1971, Jan Rychlewski

### Books, Proceedings, Notes:

1. (with M. Epstein), Material Inhomogeneities and Their Evolution: Geometric Approach, Springer-Verlag, Berlin, 2007, <http://www.springer.com/978-3-540-72372-1>.
2. (with R. Kotowski and M. Epstein) (eds.), Proceedings of the 4th Meeting on Current Ideas in Mechanics and Related Fields (CIMRF-97), Kraków (Poland), 1997, Archives of Mechanics, **50**(3), 1998.
3. (with M. de Leon and M. Epstein) (eds.), Proceedings of the 3rd Meeting on Current Ideas in Mechanics and Related Fields, Segovia (Spain), 1995, Extracta Mathematicae, **11**(1), 1996.
4. Mathematical Theory of Uniform Elastic Structures, Kielce University of Technology Press, Kielce, 1995.

### Articles(peer reviewed):

1. (with S. Preston) *Material Uniformity and the Concept of the Stress Space*, in "Continuous Media with Microstructure", Springer-Verlag, Berlin (2010) 91-101 (invited contribution) <http://www.springer.com/engineering/book/978-3-642-11444-1>.
2. (with S. Preston) *A Model of the Self-Driven Evolution of a Defective Continuum*, Mathematics and Mechanics of Solids, **12** (2007) 450-465.
3. (with S. Preston) *Modeling the Evolution of Inhomogeneities*, in "Trends in Applications of Mathematics to Mechanics", Shaker-Verlag, Aachen (2005) 391-398.
4. (with G.P. Parry) *Material Symmetry in a Theory of Continuously Defective Crystals*, Journal of Elasticity, **74** (2004) 215-237.
5. (with M. Epstein) *A Model of the Evolution of a Two-dimensional Defective Structures*, Journal of Elasticity, **70** (2003) 255-265.
6. (with M. Epstein) *On the Intrinsic Evolution of Material Inhomogeneities*, Proceedings of the 2nd Canadian Conference on Nonlinear Solid Mechanics, Vancouver, Canada, **2** (2002) 411-418.
7. (with E. Binz) *Another Look at the Evolution of Material Structures*, Mathematics and Mechanics of Solids, **7**(2), (2002) 203-214.
8. (with E. Binz) *On the Evolution of Simple Material Structures*, Technische Mechanik, **22**(1), (2002) 36-42.
9. *About Non-Spherically Symmetric Deformations of an Incompressible Neo-Hookean Sphere*, Wilmanski's Anniversary Volume, WIAS, 2000 , 68-72 (invited contribution).
10. (with S. Preston) *On Non-Holonomic Second-Order Connections with Applications to Continua with Microstructure*, Extracta Mathematicae **11**(1) (1996) 51-58.

11. (with S. Prishepionok) *Connections on Higher Order Frame Bundles*, New Developments in Differential Geometry, eds. L.Tamassy and J.Szenthe, Kluwer Acad. Publishers (1996) 131-142.
12. (with S. Prishepionok) *Higher Grade Material Structures*, Proceedings of the IUTAM & ISIMM Symposium on Anisotropy, Inhomogeneity and Nonlinearity in Solid Mechanics, University of Nottingham, August/September 1994, Kluwer (1995) 63-68 (invited contribution).
13. (with S. Prishepionok) *Homogeneous Configurations of Uniform Elastic Bodies*, in *Continuum Models of Discrete Systems*, eds. K.-H. Anthony and H.-J.Wagner, Material Science Forum, **123-125**, Trans Tech Publications (1993) 155-164.
14. (with S. Prishepionok) *Locally Homogeneous Configurations of Uniform Elastic Bodies*, Reports on Mathematical Physics **31**(3), (1992) 229-240.
15. (with M. Epstein) *The Symmetry Group of Second-Grade Materials*, International J. Non-linear Mechanics, **27**(4), (1992) 635-638.
16. *Some New Ideas in the Theory of Continuous Distributions of Defects*, in Characterization of Mechanical Properties of Materials, eds. W.-Y. Lu, C.-S. Man, ASME-MD, **33** (1992) 75-82 (invited contribution).
17. (with M. Epstein) *The Interplay of Uniformity and Constrained Elasticity*, Stability and Applied Analysis of Continuous Media, **1**, (1991) 95-107.
18. (with M. Epstein) *Coupled Shocks in Nonlinear Elasticity*, in Proceedings of the First International Conference on Mathematical and Numerical Aspects of Wave Propagation, Strasbourg, 1991, eds. G.Cohen, L.Halpern & P.Joly, SIAM, (1991) 519-524.
19. (with M. Epstein and J. Śniatycki) *G-structures and Material Homogeneity*, Journal of Elasticity, **23**(2-3), (1990) 167-180.
20. (with M. Epstein) *Propagation of Waves in Nonlinear Elasticity*, Sismodinamica **1**, (1989), 45-55, (in Spanish).
21. (with M. Epstein) *On Uniformity and Homogeneity of Elastic Materials with Internal Constraints*, in Continuum Mechanics and Its Applications, eds. G.A.C. Graham & S.K. Malik, Hemisphere Publishing, (1989), 51-57 (invited contribution).
22. (with M. Epstein and J. Śniatycki) *Geometry of Uniform Materials*, in Geometry and Topology, eds. M.Rassias & G.M.Stratopoulos, World Scientific Publications, Singapore (1989), 134-151 (invited contribution).
23. (with M. Epstein) *The Decay and Formation of One-Dimensional Nonconservative Shocks*, Applied Mathematical Modelling **12**(3), (1988), 280-284.
24. *On the Decay and Formation of Nonconservative Shocks in Nonlinear Elasticity*, Proceedings of the 9th Brazilian Congress of Mechanical Engineering, Florianopolis, SC (1987), 477-480.
25. (with M. Epstein) *Strong Shocks in Nonlinear Elasticity*, in Computational Mechanics (Theory and Applications) vol.2 eds. G.Yagewa & S.M.Atluri (1986), 295-300.

26. (with M. Epstein) *Attenuation of Shocks by Viscoelastic Support*, ASCE Journal of Engineering Mechanics, **112**(6), (1986), 587-592.
27. (with M. Epstein) *Decay of Strong Shocks in Nonlinear Elasticity*, Journal of Sound and Vibration, **103**(3), (1985), 371-378.
28. (with M. Epstein and J. Śniatycki) *Locality and Uniformity in Global Elasticity*, Lecture Notes in Mathematics, **1139**, (1985), 300-311.
29. *Thermodynamic Stability of Continuous Body*, Journal of Mathematical Analysis and Applications **108**(2), (1985), 303-315.
30. (with M. Epstein), *Geometric Characterization of Hyperelastic Uniformity*, Archive for Rational Mechanics and Analysis, **88**, (1985), 347-357.
31. *On the Necessary Conditions for Stability in Thermodynamics*, Bull.Acad.Polon.Sci. (Ser.Sci.Techn.), **28**, (1980), 77-83.
32. *Some Problems of the Geometrization of Neoclassical Thermodynamics*, Bull.Acad.Polon.Sci. (Ser.Sci.Techn.), **25**, (1977), 79-86.
33. *The Entropy Function of the Thermodynamic Isolated System*, Bull.Acad.Polon.Sci. (Ser.Sci.Techn.), **24**, (1976), 95-105.
34. *On the First Law of Neoclassical Thermodynamics*, Bull.Acad.Polon.Sci. (Ser.Sci.Techn.), **22**, (1974), 371-378.
35. *On the Geometry of the State Space of Neoclassical Thermodynamics*, Archives of Mechanics, **25**(5), (1973), 781-790.

### Presentations

#### Meetings:

- *Material Symmetries of Defective Crystal Structures*, 20th International Fall Workshop on Geometry and Physics, ICMAT-CSIC, Madrid, Spain, August 31 - September 3, 2011.
- *A Mathematical Theory of Defective Crystals*, 22nd International Workshop on Differential Geometric Methods in Theoretical Mechanics, Stefan Banach International Mathematical Center, Bedlewo, Poland, 19-26 August 2007.
- *Material Symmetry in a Theory of Defective Crystals*, Continuous and Discrete Modelling in Mechanics, Warsaw, September 5-9, 2005, also Geometry. Continua and Microstructures (GCM 7), University of Lancaster, Lancaster, UK, September 25-27, 2006.
- *Modelling the Evolution of Inhomogeneities*, STAMM 2004, Frankfurt, August 22-28, 2004.
- *A Concept of Material Symmetry in a Structurally Based Theory of Defective Crystals*, SNP Meeting, Lexington, September 26-28, 2003.
- *Remarks on Modelling the Evolution of Inhomogeneities*, STAMM 2002, (Maiori) Naples, September 30 - October 4, 2002.

- *A Model of the Evolution of a Two-dimensional Defective Structure*, 14th US National Congress of Theoretical and Applied Mechanics, Blacksburg, VA, June 23-28, 2002.
- *On the Intrinsic Evolution of Material Inhomogeneities*, the 2nd Canadian Conference on Nonlinear Solid Mechanics, Vancouver, Canada, June 19-22, 2002.
- *On the Evolution of Material Structures*, 6th Meeting on Current Ideas in Mechanics and Related Fields, Technical University Berlin, September 2001.
- *Non-Spherically Symmetric Deformations of a Neo-Hookean Ball*, 5th Meeting on Current Ideas in Mechanics and Related Fields, Jerusalem, Israel, August 1999.
- *Materials with Microstructures*, 4th Meeting on Current Ideas in Mechanics and Related Fields, Kraków, Poland, August, 1997.
- *Properties of Connections on Semi-Holonomic Frame Bundles*, 3rd Meeting on Current Ideas in Mechanics and Related Fields, Segovia, Spain, June 1995.
- *Higher Grade Material Structures and Elastic Energy-Momentum Tensor*, IUTAM & ISIMM Symposium on Anisotropy, Inhomogeneity and Nonlinearity in Solid Mechanics, University of Nottingham, Nottingham, August/September 1994 (invited).
- *Connections on Higher Order Frame Bundles*, Colloquium on Differential Geometry, Janos Bolyai Mathematical Society and the Debrecen Branch of the Hungarian Academy of Sciences, Debrecen, Hungary, July 1994.
- *The Future of the Geometric Theory of Defects*, 2nd Meeting on Current Ideas in Mechanics and Related Fields, University of Calgary, Banff, Canada, September 1993.
- *Connections on Holonomic Frame Bundles of Higher Order Contact, Geometric, Analytic and Computational Aspects of Mech.*, Mathematical Research Institute, Oberwolfach, Germany, July 1993 (invited) .
- *Homogeneous Configurations of Uniform Elastic Bodies*, 7th International Symposium on Continuum Models of Discrete Systems, Paderborn, Germany, June, 1992 (invited).
- *Some New Ideas in the Theory of Continuous Distributions of Defects*, Symposium "Characterization of Mechanical Properties of Materials", the ASME Summer Mechanics and Material Conference, Tempe, Arizona, April/May, 1992 (invited).
- *On the Symmetry Group of the Second-Grade Elastic Materials and the Continuous Distribution of Disclinations*, 1st European Solid Mechanics Conference, Technical University of Munich, Munich, Germany, September 1991.
- *On the Locally Homogeneous Configurations*, 1st Meeting on Current Ideas in Mechanics and Related Fields, Portland State University, Portland, June 1991.
- *Coupled Shock in Nonlinear Elasticity*, First International Conference on Mathematical and Numerical Aspects of Wave Propagation, Strasbourg, France, April 1991.

- *Uniformity of Constrained Elastic Materials*, 34th Meeting of the Society for Natural Philosophy on Recent Advancements in Mechanics, Lincoln, Nebraska, USA, April 1990.
- *The Symmetry Group in Continuum Mechanics*, 3rd International Conference on the Theory of Groups and Related Topics, Canberra, Australia, September 1989.
- *On Uniformity and Homogeneity of Elastic Materials with Internal Constraints*, CAMS Conference on Continuum Mechanics and its Applications, Burnaby, Canada, June 1988 (invited).
- *Coupled Strong Shocks in Elasticity*, International Conference on Industrial and Applied Mathematics, Paris, France, July 1987.
- *On the Decay and Formation of One-dimensional Shocks*, 11th CANCAM, Edmonton, Canada, May 1987.
- *On the Decay and Formation of Non-conservative Shocks in Elasticity*, COBEM'87, Florianopolis, Brazil, January 1987.
- *Strong Shocks in Nonlinear Elasticity*, International Conference on Computational Mechanics, Tokyo, Japan, May 1986.
- *Remarks on Uniformity in Global Elasticity*, 28th Meeting of the Society for Natural Philosophy, Lexington, Kentucky, USA, December 1985.
- *Shock Wave Propagation in Nonlinear Elasticity*, 10th CANCAM, London, Canada, June 1985.
- *Uniformity Characterization in Global and Local Elasticity*, 27th British Theoretical Mechanics Colloquium, Leeds, UK, March 1985.
- *Uniformity Characterization in Hyperelasticity*, XVI-th IUTAM Congress, Lyngby, Denmark, August 1984.
- *On the Decay of Strong Shocks in Nonlinear Elasticity*, Canadian Applied Mathematics Society Meeting, Vancouver, Canada, July 1984.
- *On Global Elasticity*, Canadian Applied Mathematics Society Meeting, Toronto, Canada, June 1983.
- *Thermodynamic Stability and the Second Law*, 22nd British Theoretical Mechanics Colloquium, Cambridge, UK, March 1980.

**Other Talks:**

- *A Mathematical Model of the Evolution of Defects in Solids*, Department of Mathematics and Statistics, University of Missouri-Rolla, October 29, 2004.
- *Mathematical Theory of Uniform Material Structures and Modelling the Evolution of Defects in Solids*, Department of Mathematics, Oregon State University, February 24, 2004.

- *Intrinsic Evolutions of Defects in Solids: a two-dimensional model*, Division of Theoretical Mechanics, School of Mathematical Sciences, University of Nottingham, Nottingham, U.K., March 12, 2003.
- *Mathematical Theory of Continuous Distributions of Defects in Solids*, Department of Physics, Lancaster University, Lancaster, U.K., March 7, 2003.
- *Hyperbolic Waves and Two-dimensional Evolution of Inhomogeneities*, Instituto de Matematica y Fisica Fundamental (IMAFF), Consejo Superior de Investigaciones Cientificas, Madrid, January 15, 2003.
- *2-D Evolution of Defects*, Colloquium, Department of Theoretical Physics, Technical University of Berlin, September 11, 2002.
- *Frame Bundles, Hyperbolic Waves and Intrinsic Evolution of Defects*, Colloquium, Department of Mathematical Sciences, Portland State University, April 19, 2002.
- *Formation of Cavities in Nonlinear Elasticity also Evolution of Material Structures*, Colloquium, Department of Mathematics, University of Mannheim, August/September 2000.
- *On the Evolution of Material Structures*, Colloquium, Department of Theoretical Physics, Technical University Berlin, September 1999.
- *On Cavitation in Incompressible Nonlinear Elasticity*, Colloquium, Weierstrass Institute for Applied Analysis and Stochastics (WIAS), Berlin, September 1999.
- *Uniformity, Homogeneity and the Energy-Momentum Tensor in Elasticity*, Colloquium, Department of Mechanical Engineering, University of Saskatoon, Saskatchewan, November 1995.
- *Uniform Hyperelastic Structures*, Colloquium, Department of Theoretical Physics, Technical University of Berlin, July 1995.
- *Properties of Connections on Frame Bundles and Continuum Mechanics*, Colloquium, Department of Mathematics, Copernicus University & Polish Mathematical Society, Toruń, Poland, May 1995.
- *Prolongations, Simplicity and Structure of Connections on Frame Bundles of An Arbitrary Finite Order*, Colloquium, Department of Mathematics, University of Ulm, July 1994.
- *Linear Connection on the Second Order Frame Bundle*, Colloquium, Department of Mathematics, University of Mannheim, September 1991.
- *Shock Waves in Elasticity*, Colloquium, Physics Department, Portland State University, April 1991.
- *Geometry of G-structures and the Theory of Elastic Uniformity*, Colloquium, University of Mannheim, October 1989.

## Non-Refereed Publications

### Articles:

- *Mathematical Theory of Uniform Elastic Structures*, Mannheimer Manuskripter 192/95, Department of Mathematics, University of Mannheim, April 1995.
- *Integrability of Material Structures I; Uniform Elastic Structures*, Research Report No.6/94, Department of Mathematical Sciences, Portland State University, May 1994.
- (with S. Prishchepionok) *Connections on Holonomic Frame Bundles of Higher Order Contact and Uniform Material Structures*, Research Report No.3/93, Department of Mathematical Sciences, Portland State University, March 1993.
- (with M. Epstein) *Propagation of Waves in Nonlinear Elasticity*, Report No.657, Department of Mathematics and Statistics, University of Calgary, November 1987.
- (with M. Epstein) *A Note on Breaking of Waves of Hyperbolic Balance Laws*, Report No.342, Department of Mechanical Engineering., University of Calgary, October 1985.
- (with M. Epstein) *On Shock Waves in One-Dimensional Elasticity*, Report No.329, Department of Mechanical Engineering., University of Calgary, August 1985.
- *Thermodynamic Stability and the Minimum Energy Criterion, General Theory*, Report No.230, Department of Mechanical Engineering., University of Calgary, July 1982.

### Reviews:

- Differential Equations by J.R.Brannan, W.E.Boyce, 2nd. ed. (2010).
- Differential Equations by P.Blanchard, R.L.Devaney, G.R.Hall, 2nd. ed. (2004).
- Hermann Collection of Mathematics "Travaux en cours", ed. Gerard A. Maugin (1998, 1999).
- Comparative review of Calculus and Analytical Geometry by C.H.Edwards,Jr. & David E.Penny and Calculus by Ross L.Finney & George B.Thomas,Jr. (1992).
- Reviewer for the Journal of the Acoustical Society of America, Mathematical Reviews, Mathematics and Mechanics of Solids, Journal of Elasticity, Journal of Mechanics of Materials and Structures, Meccanica.

## Work in Progress

### Books:

- An Introduction to Applied Partial Differential Equations  
<http://www.mth.pdx.edu/~marek/papers/notes.pdf>.

## GRANTS and FELLOWSHIPS

### Grants:

- Instrumental in securing the Fariborz Maseeh's \$ 4,000,000 endowment for the Department of Mathematics and Statistics, Portland State University, December 2009.
- Faculty Enhancement Grant, Portland State University, 2011/12.
- Institutional Career Support-Peer Review, Portland State University 1994/95, 2000/01, 2006/07, 2009/11.
- Faculty Enhancement Grant (travel), Portland State University, 2004, 2005, 2006, 2011.
- President's Internationalization grant, Portland State University, 2005.
- Engineering and Physical Sciences Research Council (EPSRC) cooperative grant (with G.P. Parry), Defects and Plasticity, awarded for 2002/2003, awarded for 2009/10 - declined.
- Oregon University System/Baden Württemberg faculty exchange award, University of Mannheim, 2000, 1996, 1995, 1991.
- Deutscher Akademischer Austauschdienst (DAAD) Study Visit Grant to undertake collaborative Research at the University of Mannheim, 1994/95.
- Faculty Development Grant (travel), Portland State University 2001.
- Faculty Development Grant, Portland State University 1989/90, 1994/95, 1997/98, 1999/2000.
- Portland State University Foundation conference grant, 1991.
- Oregon Graduate Institute teaching award (with J. O'Halloran) 1990/91.
- Research and Publication Award, Portland State University 1989/90, 1990/91, 1991/92, 1992/93.
- President's Starter Grant, University of Calgary 1988/89.

### Fellowships:

- EPSRC Visiting Fellowship, School of Mathematical Sciences, University of Nottingham, October 2002 - March 2003.
- British Council Fellowship, Mathematical Institute, University of Oxford, 1976-1977.
- International Union of Theoretical and Applied Mechanics (IUTAM) Fellowship, International Center for Mechanical Sciences (CISM) Udine, Italy, October/November 1974.

## TEACHING

- Graduate advisor:
  - M.Sc.: C. Melinte, 1996/7, D. Hasenjaeger, 2010/11.
  - Ph.D.: B. Ostenson 1989, C. Melinte, 1997/98.
- Graduate Committee member:
  - M.Sc.: I. Schaefer (E.E.), May 1990, S. Tunes, (Physics), December 1997, Greta Swanson (Math), August 2010.
  - Ph.D.: K. Vixy (System Science), June 1997, V.V. Neagoe (Math/Stat), June 1999, S. Grygiel (E.E.) November 1999, T. Lowry (M.E.) November 2000. Guy Rodnay (M.E. Ben Gurion University, Beer-Sheva, Israel) August 2002 - external examiner, M. Santoro (Mathematical Sciences), June 2004.
- Special courses:
  - Applied Differential Equations, Summer 2003, Advanced Differential Equations, Winter - Spring 2001, Variational and Analytical Methods in Nonlinear Elasticity, 1995/96, Mathematical Physics, 1993/94, Hyperbolic Conservation Laws, Spring 1993.

## SERVICE to PROFESSION

- NSF panel member, July 28-31, 2004.
- Co-chairman, Meetings on Current Ideas in Mechanics and Related Fields(CIMRF); Berlin, September 3-6, 2001, Jerusalem, August 23-26, 1999, Kraków (Poland), August 25-28, 1997, Segovia, June 19-25, 1995, Banff (Canada), September 1-3, 1993, Portland, Oregon, June 15-19, 1991.
- Co-chairman, Meetings of the Society for Natural Philosophy on Topological and Geometrical Methods in Mechanics, Calgary (Canada), June 15-20, 1989.
- Secretary, 21st Polish Solid Mechanics Conference, Wisla (Poland), August 27-31, 1979.
- Reviewer for the Journal of the Acoustical Society of America, Mathematical Reviews, Mathematics and Mechanics of Solids, Journal of Elasticity, Journal of Mechanics of Materials and Structures, Meccanica.

## Membership in Professional Societies

- American Mathematical Society, member since 1983.
- Society for Natural Philosophy, member since 1985.
- International Society for the Interaction of Mechanics and Mathematics (ISIMM), member since 1992.

- American Academy of Mechanics, member since 1992.

### **SERVICE to UNIVERSITY, COLLEGE, DEPARTMENT**

- University:
  - Dean of CLAS Search Committee, 2011,
  - PSU Faculty Senate (elected), 2006/07, 2008/09, 2010/12
  - Chair, Educational Policy Committee, 2005/06
  - University Budget Committee, 2005/06, 2011/13
  - Educational Policy Committee, 2004/07
  - Provost’s Ad Hoc Committee, 2003/04
  - Diversity Recognition Scholarship Selection Committee, 2003/05
  - Academic Requirements Committee, 1990/93,
  - University Curriculum Committee, 1990/91.
  - Graduate Council, 2007/10
- College:
  - CLAS Science Planning Working Group, 2010/11
- Department:
  - Chair’s Advisory Committee, 1998/00,
  - Undergraduate Program and Curriculum Committee 1989/90 (chair), 1990/91, 1992/93,
  - MA/MS Examining Committee, 1988/94, 1995/00, 2006/10.
  - System Science Ph.D. Coordinator, 1995/96, 2001/02, 2010/12.
  - Ph.D. in Mathematical Sciences Coordinator, 2011/12.
  - Hiring Committee, 1988/90, 1998/00, 2010/11 (chair).
  - Graduate Studies Committee, 1988/89, 1990/92, 1993/94 (chair), 1995/99, 1998/99 (chair), 1999/01,
  - GTA Committee, 1996/98 (chair), 2000/02 (chair), 2002/03, 2011/12
  - Fariborz Maseeh Colloquium Committee (chair) 2011/12.
  - Pay, Promotion and Tenure Committee (elected), 1988/89, 1996/98, 2010/12
  - Elections Committee, 1995/97, 1999/00.
  - Web page Committee, 2001/2002.

*January 21, 2012*