

BIOGRAPHICAL SKETCH

April, 2009

Roger Fosdick

(a) Professional Preparation

- Illinois Institute of Technology, Mechanical Engineering, BS, 1959
- Brown University, Applied Mathematics, PhD, 1963
- Politecnico di Bari, Italy, Laurea Specialistica Honoris Causa in Ingegneria Meccanica, December, 2005

(b) Major Appointments

- 1969–present, Professor of Mechanics, Department of Aerospace Engineering and Mechanics, University of Minnesota
- 1965–1969, Associate Professor of Mechanics, Department of Mechanics, Illinois Institute of Technology
- 1962–1965, Assistant Professor of Mechanics, Department of Mechanics, Illinois Institute of Technology
- 2002–2004 Board of Directors, Society of Engineering Science (SES)
- 2000–present Associate Fellow, Supercomputing Institute for Digital Simulation and Advanced Computation, Minnesota Supercomputer Institute
- 1998–present, Editor-in-Chief, *Journal of Elasticity: The Physical and Mathematical Science of Solids*

(c) 10 Representative Publications

- Dunn, J.E. & Roger Fosdick, Thermodynamics, stability and boundedness of fluids of complexity 2 and fluids of second grade. *Arch. Ration. Mech. Anal.*, **56**, 191–252, (1974).
- Fosdick, Roger & James Serrin, Global properties of continuum thermodynamic processes. *Arch. Ration. Mech. Anal.*, **59**, 97–109 (1975).
- Dunn, J.E. & Roger Fosdick, The morphology and stability of material phases. *Arch. Ration. Mech. Anal.*, **74**, 1–99 (1980).
- Dunn, J.E. & Roger Fosdick, Steady, structured shock waves. Part 1: Thermoelastic materials. *Arch. Ration. Mech. Anal.*, **104**, 295–365 (1988).
- Fosdick, Roger & Epifanio Virga, A variational proof of the stress theorem of Cauchy. *Arch. Ration. Mech. Anal.*, **105**, 95–103 (1989).
- Fosdick, Roger & Ying Zhang, The torsion problem for a nonconvex stored energy function. *Arch. Rational Mech. Anal.*, **122**, 291–322 (1993).
- Fosdick, Roger & Darren Mason, On a model of nonlocal continuum mechanics, Part I: Existence and Regularity. *SIAM J. Appl. Math.*, **58**, 1278–1306 (1998).
- Fosdick, Roger & Gianni Royer-Carfagni, The constraint of local injectivity in linear elasticity theory. *Proc. Roy. Soc.*, **457**, 2167–2187 (2001).
- Fosdick, Roger & Gianni Royer-Carfagni, The Lagrange multipliers and hyperstress constraint reactions in incompressible multipolar elasticity theory. *J. Mech. & Phys. Solids*, **50**, 1627–1647 (2002).

- Fosdick, Roger & Huang Tang, Electrodynamics and thermomechanics of material bodies. *J. Elasticity*, **88**, 255-297 (2007).

(d) Synergistic Activities

- 1998–present, Editor-in-Chief, *Journal of Elasticity: The Physical and Mathematical Science of Solids*: Invited and edited several extensive review articles and/or scholarly works on topics of emerging interest to graduate students, postdocs and researchers in the physical and mathematical sciences. The following also were published in hardbound book form:
 - * Podio-Guidugli, Paolo, A Primer in Elasticity. *J. Elasticity*, **58**, 1-103 (2000).
 - * Chi-Sing Man & Roger Fosdick, Essays and Papers Dedicated to the Memory of Clifford Ambrose Truesdell III. Edited Collection, vols. I, II & III. *J. Elasticity*, **70**, 1-283; **71**, 1-292; **72**, 1-261 (2003).
 - * Ciarlet, Philippe G., An Introduction to Differential Geometry with Applications to Elasticity. *J. Elasticity*, **78-79**, 1-209 (2005).
 - * Tanuma, Kazumi, Stroh Formalism and Rayleigh Waves. *J. Elasticity*, **89**, 1-155 (2007).
 - * Bourdin, Blaise, Gilles A. Francfort & Jean-Jacques Marigo, The Variational Approach to Fracture. *J. Elasticity*, **91**, 1-148 (2008).
- 1990–1991, Coordinator in residence for the year long program on “Phase Transitions and Free Boundaries”, Institute for Mathematics and its Applications, University of Minnesota. Duties included postdoctoral advising.
 - * Shock Induced Transitions and Phase Structures in General Media. The IMA Volumes in Mathematics and its Applications, **52**. Edited by J. E. Dunn, R. Fosdick, and M. Slemrod, Springer-Verlag, 1993.

(e) Collaborators & Other Affiliations

- Collaborators and Co-Editors
 - * Professor Adair Aguiar, Department of Structural Engineering, São Carlos School of Engineering, University of Sao Paulo, 13566-590 Sao Carlos, SP, Brazil
 - * Professor Yohannes Ketema, Department of Aerospace Engineering and Mechanics, University of Minnesota, Minneapolis, MN 55455
 - * Professor Gianni Royer-Carfagni, Department of Civil-Environmental Engineering and Architecture, University of Parma, Parco Area delle Scienze 181/A, 1 43100 Parma, Italy
 - * Professor Mirek Šilhavý, Mathematical Institute of the AVČR, Žitna, 115 67 Prague, Czech Republic
 - * Huang Tang, Graduate Student, Department of Aerospace Engineering and Mechanics, University of Minnesota, Minneapolis, MN 55455
- Graduate Advisors and Postdoctoral Sponsors
 - * Graduate Advisor: Professor Richard T. Shield, Retired
- Thesis Advisor and Postgraduate-Scholar Sponsor
 - * Last 5 years: Adair Aguiar (same affiliation as above), Dr. Pilade Foti (Dipartimento di Ingegneria Civile e Ambientale, Politecnico di Bari, Bari, Italy), Gianni Royer-Carfagni (same affiliation as above), Huang Tang (same affiliation as above)
 - * Total: 17 PhD and 13 Masters students; 12 Postdoctoral Scholars and Visitors.