ANTONY N. BERIS

Curriculum Vita (Updated 04/06/25)

Research Interests:	Development and applications of numerical methods in non-Newtonian fluid mechanics, turbulence, transport phenomena, and nonequilibrium thermodynamics. Modelling and simulation of the dynamics of complex systems (thixotropic concentrated colloidal suspensions, blood, viscoelastic flow modeling and instabilities, viscoelastic turbulence and polymer-induced drag reduction, flow-induced crystallization, shear-banding micellar systems, flow-induced phase separations, short fiber and aggregating particle suspensions etc.). High performance computing using parallel computers. Principal orthogonal decomposition and model reduction in large data problems.
Education:	Massachusetts Institute of Technology, Cambridge, MA, Ph.D. degree in Chemical Engineering, September 1985. Thesis under Professors R.C. Armstrong and R.A. Brown on "Calculations of a Viscoelastic Flow in a Journal Bearing." Minor in Mathematics. National Technical University of Athens, Athens, Greece, Diploma of Chemical Engineer, June 1980.
Professional Experience:	Assistant Professor, Department of Chemical Engineering, University of Delaware, 1985-1990 Associate Professor, U. of D., 1990-1994 Professor, U. of D., 1994-2002 Arthur B. Metzner Professor of Chemical Engineering, U. of D., 2002-present Member, Board of Directors, Center for Composite Materials, U. of D., 1990-92 Sabbatical leave at NRL, Washington D.C. through a NAVY-ASEE fellowship, 1992-1993 Sabbatical Fulbright Fellowship for Research at the Université catholique de Louvain, in Belgium, 1999-2000 Sabbatical semester leave at the Department of Chemical Engineering, University of Patras, Fall Semester 2006 Joint (5%) faculty appointment to the Biomedical Eng. at U. of D., 2014-present.
Professional and Honorary Societies:	American Assoc. for the Advancement of Science (Fellow since 1999) American Institute of Chemical Engineers American Physical Society (Fellow since 2021), American Chemical Society American Society for Engineering Education (ASEE), Hellenic Society of Rheology, Sigma Xi (Associate Member, 1981, Member, 1983), Society for Industrial and Applied Mathematics, Society of Rheology (Fellow since 2016)
Awards:	Fellow, Society of Rheology, since 2016 (indicted in 88th Annual Meeting) Willem Prins Award Lecture*[1] at the 7th International Workshop and summer school on Nonequilibrium Thermodynamics, IWNET 2015, Hilvarenbeek, The Netherlands, July 5-10, 2015

[1] *The lectureship, sponsored by TU Delft, is named for the Syracuse chemistry professor, Willem Prins, later at TU Delft (where he started the Polymer Engineering Program), who died in a 1974 boating

U. Delaware Outstanding Doc. Grad. Stud. Advising & Mentoring Award, 2010
Dow Outstanding Young Faculty Award of the Middle Atlantic Sc. ASEE, 1991
Chrisovergi's Award, 1980 (Highest grade in graduating class at NTU, 1980)
Second Prize in International Mathematical Competition (XVII Mathematical Olympiad) at Burgas, Bulgaria, 1975.
Second Prize in National Mathematical Competition between High-School Seniors, Greece, 1975.

Editorial Positions:
Computers in Physics, Associate Editor of the Journal Section 1998-1999.
J. of Non-Equilibrium Thermodynamics, Editorial Board Member 1999-2001
J. of Non-Newtonian Fluid Mechanics, Editorial Board Member 2009-present
Entropy, Editorial Board Member, Section Board Thermodynamics 2019-present
J. of Rheology, Editorial Board Member 2025-2028

Citation in WHO's WHO (selected)

1. Albert Nelson Marquis Lifetime Achievement Award, 2018.
2. Marquis WHO's WHO in the World, since 2000.
2. Marquis WHO's WHO in America, since the Golden Anniv. 50th Edition, 1996.
3. Marquis WHO's WHO in Science and Engineering, since the 1st ed., 1992.

Scientific Contributions at a Glance

Book: Thermodynamics of Flowing Systems with Internal Microstructure. (With B.J. Edwards), vol. 36 of Engineering & Science series, Oxford Univ. Press, 1994.

h-index, citations as of 4/06/2025: 41, 5953 (web of Science); 51, 10838 (Google Scholar)
Articles in refereed journals: 163
Reviews & articles in proceedings, archives and books: 48
Invited presentations in academia, industry and scientific meetings: 192
Invited tutorial series: 9
Contributed presentations in scientific meetings: 335
Graduate Students: 24, Master Students: 1
Visiting Scientists (Post-Doctoral Research Associates): 10
Undergraduate Students: 28
The following former graduate students, post-doctoral research associates and undergraduate students can now be found in Academia:
B.J. Edwards, Assoc. Chair, Department of Chem. Engineering, U. of Tennessee
N. Germann, Energy-, Process-, and Bio-Engineering, University of Stuttgart, Germany
K.D. Housiadas, Chair, Department of Mathematics, Aegean University, Greece
C. Lastoskie, Dept. Civil and Environ. Engnr. and Dept. of Biomed. Engnr., U. Michigan
V.G. Mavrantzas, Department of Chem. Engineering, U. of Patras, Greece & ETH Zurich
R.C. Snyder, Department of Chemical Engineering, Bucknell University
R. Sureshkumar, Department of Chem. Engineering, Syracuse U., New York
P. Wapperom, Department of Mathematics, Virginia Tech

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accident at the age of 45. He was a beloved teacher and dedicated researcher, as evidenced by his publication of more than 90 scholarly articles.

PUBLICATIONS

A. BOOK (RESEARCH MONOGRAPH)

Thermodynamics of Flowing Systems with Internal Microstructure. (With B.J. Edwards), vol. 36 of Engineering and Science series, Oxford University Press, New York, 1994.

B. ARTICLES IN REFEREED JOURNALS

1. Beris, A.N., R.C. Armstrong and R.A. Brown, "Perturbation Theory for Viscoelastic Fluids between Eccentric Rotating Cylinders." J. Non-Newt. Fluid Mech., 13, 109-148 (1983).

2. Beris, A.N., R.C. Armstrong and R.A. Brown, "Finite Element Calculations of Viscoelastic Flow in a Journal Bearing. I. Small Eccentricities." J. Non-Newt. Fluid Mech., 16, 141-172 (1984).

3. Beris, A.N., J.A. Tsamopoulos, R.A. Brown and R.C. Armstrong, "Creeping Flow around a Sphere in a Bingham Plastic." J. Fluid Mech., 158, 219-244 (1985).

4. Beris, A.N., R.C. Armstrong and R.A. Brown, "Finite Element Calculations of Viscoelastic Flow in a Journal Bearing. II. Moderate Eccentricity." J. Non-Newt. Fluid Mech., 19, 323-347 (1986).

5. Brown, R.A., R.C. Armstrong, A.N. Beris and P.W. Yeh, "Elastic Flows." Comp. Meth. in Applied Mech. and Engr., 58, 201-226 (1986).

6. Beris, A.N., "Fluid Elements Deformation behind an Advancing Flow Front." J. of Rheology, 31, 121-124 (1987).

7. Beris, A.N., R.C. Armstrong and R.A. Brown, "Spectral-Finite Element Calculations of the flow of a Maxwell Fluid between Eccentric Rotating Cylinders." J. Non-Newt. Fluid Mech., 22, 129-167 (1987).

8. Beris, A.N. and B. Liu, "Time-Dependent Fiber Spinning Equations: 1. Analysis of the Mathematical Behavior." J. Non-Newt. Fluid Mech., 26, 341-361 (1988).

9. Liu, B. and A.N. Beris, "Time-Dependent Fiber Spinning Equations: 2. Stability Analysis of Numerical Methods." J. Non-Newt. Fluid Mech., 26, 363-394 (1988).

10. Chang, Y., A.N. Beris and E.E. Michaelides, "A Numerical Study of Heat and Momentum Transfer for Flexible Tube Bundles in Cross Flow." Int. J. Heat Mass Transfer, 32, 2027-2036 (1989).

11. Chang, Y., A.N. Beris and E.E. Michaelides, "A Numerical Study of Heat and Momentum Transfer for Tube Bundles in Crossflow." Int. J. Num. Meth. in Fluids, 9, 1381-1394 (1989).

12. Edwards, B.J. and A.N. Beris, "Flow Induced Orientation in Monodomain Systems of Polymeric Liquid Crystals." J. of Rheology, 33, 537-557 (1989).

13. Edwards, B.J. and A.N. Beris, "Order Parameter Representation of Spatial Inhomogeneities in Polymeric Liquid Crystals." Note in: J. of Rheology, 33, 1189-1193 (1989).

14. Liu, B. and A.N. Beris, "The Stability of Numerical Approximations to Nonlinear Hyperbolic Equations." Computer Methods in Applied Mechanics and Engineering, 76, 179-204 (1989).

15. Pilitsis, S. and A.N. Beris, "Calculations of Steady-state Viscoelastic Flow in an Undulating Tube." J. Non-Newt. Fluid Mech., 31, 231-287 (1989).

16. Beris, A.N. and B.J. Edwards, "Hamiltonian (Poisson Bracket) Formulation of Incompressible Flow Equations in Continuum Mechanics." J. of Rheology, 34, 55-78 (1990).

17. Beris, A.N. and B.J. Edwards, "Poisson Bracket Formulation of Viscoelastic Flow Equations of Differential Type: A Unified Approach." J. of Rheology, 34, 503-538 (1990).

18. Edwards, B.J. and A.N. Beris, "Remarks Concerning Compressible Viscoelastic Fluid Models." J. Non-Newt. Fluid Mech., 36, 411-417 (1990).

19. Edwards, B.J., A.N. Beris and M. Grmela, "Generalized Constitutive Equation for Polymeric Liquid Crystals. Part 1. Model Formulation Using the Hamiltonian (Poisson Bracket) Formulation." J. of Non-Newt. Fluid Mech., 35, 51-72 (1990).

20. Edwards, B.J., A.N. Beris, M. Grmela and R.G. Larson, "Generalized Constitutive Equation for Polymeric Liquid Crystals. Part 2. Non-Homogeneous Systems." J. of Non-Newt. Fluid Mech., 36, 243-254 (1990).

21. Gustafson, J.B., Beris, A.N. and H.C. Foley, "Reaction Phenomena in a Nonthermal Equilibrium Plasma." AIChE J., 36, 1439-1443 (1990).

22. James, D. F., N. Phan-Thien, M.M.K. Khan, A.N. Beris and S. Pilitsis, "Flow of Test Fluid M1 in Corrugated Tubes." J. Non-Newt. Fluid Mech., 35, 405-412 (1990).

23. Doraiswamy, D., A.N. Mujumdar, I. Tsao, A.N. Beris, S.C. Danforth and A.B. Metzner, "The Cox-Merz rule extended: A rheological model for concentrated suspensions and other materials with a yield stress." J. of Rheology, 35, 647-685 (1991).

24. Edwards, B.J. and A.N. Beris, "Unified View of Transport Phenomena Based on the Generalized Bracket Formulation." Ind. Eng. Chem. Res., 30, 873-881 (1991).

25. Edwards, B.J. and A.N. Beris, 'Noncanonical Poisson Bracket for Nonlinear Elasticity with Extensions to Viscoelasticity." J. Phys. A: Math. Gen., 24, 2461-2480 (1991).

26. Edwards, B.J., A.N. Beris and M. Grmela, "The Dynamical Behavior of Liquid Crystals: A Continuum Description Through Generalized Brackets." Molecular Crystals, Liquid Crystals, 201, 51-86 (1991).

27. Gustafson, J.B. and A.N. Beris, "Evaluating all Real Roots of Systems of Nonlinear Equations Using a Global Fixed-Point Homotopy Method, R&D." Note in: AIChE J., 37, 1749-1752 (1991).

28. Pilitsis, S. and A.N. Beris, "Viscoelastic Flow in an Undulating Tube. Part II: Effects of High Elasticity, Large Amplitude of Undulation and Inertia." Journal of Non-Newtonian Fluid Mechanics, 39, 375-405 (1991).

29. Pilitsis, S., A. Souvaliotis and A.N. Beris, "Viscoelastic Flow in a Periodically Constricted Tube: The Combined Effect of Inertia, Shear-Thinning and Elasticity." Journal of Rheology, 35, 605-642 (1991).

30. Beris, A.N. guest editorial for "The Symposium of Numerical Simulations of Viscoelastic Flows." Rochester Meeting, J. of Rheology, 36, 1323-1324 (1992).

31. Beris, A.N., M. Avgousti and A. Souvaliotis, "Spectral Calculations of Viscoelastic Flow: Evaluation of the Giesekus Constitutive Equation in Model Flow Problems." J. Non-Newt. Fluid Mech., 44, 197-228 (1992).

32. Chan, C.Y., A.N. Beris and S.G. Advani, "Simulation of 3-D Hydrodynamic Interactions Around Ellipsoidal Particles Using High Order Boundary Element Techniques." Int. J. Numer. Methods Fluids, 14, 1063-1086 (1992).

33. Edwards, B.J. and A.N. Beris, "The Dynamics of a Thermotropic Liquid Crystal." Eur. J. Mech. B/Fluids, 11, 121-142 (1992).

34. Mavrantzas, V.G. and A.N. Beris, "Theoretical Study of the Effects of Polymer-Wall Interaction on the Rheology of Dilute Polymer Solutions." J. of Rheology, 36, 175-213 (1992).

35. Mavrantzas, V.G. and A.N. Beris, "Modelling of the Rheology and Flow-Induced Concentration Changes in Polymer Solutions." Physical Review Letters, 69, 273-276 (1992) & (Erratum) 70, 2659 (1993).

36. Pilitsis, S. and A.N. Beris, 'Pseudospectral Calculations of Viscoelastic Flow in a Periodically Constricted Tube." Comp. Meth. in Appl. Mech. and Engrg., 98, 307-328 (1992).

37. Souvaliotis A. and A.N. Beris, "An Extended White-Metzner Viscoelastic Fluid Model Based on an Internal Structural Parameter." J. Rheol., 36, 241-271 (1992).

38. Souvaliotis, A. and A.N. Beris, "Application of Domain Decomposition Pseudospectral Methods to Viscoelastic Flow Simulations." J. of Rheology, 36, 1417-1453 (1992).

39. Stark, S. and A.N. Beris, "LU Decomposition Optimized for a Parallel Computer with a Hierarchical Distributed Memory." Parallel Computing, 18, 959-971 (1992).

40. Avgousti, M. and A.N. Beris, "Non-axisymmetric Modes in the Viscoelastic Taylor-Couette Flow." J. Non-Newt. Fluid Mech., 50, 225-251 (1993).

41. Avgousti, M. and A.N. Beris, "Viscoelastic Taylor-Couette Flow: Bifurcation Analysis in the Presence of Symmetries." Proc. R. Soc. London, Ser A, 443, 17-37 (1993).

42. Avgousti, M., B. Liu and A.N. Beris, "Spectral Methods for the Viscoelastic Time-dependent Flow Equations with Applications to Taylor-Couette Flow." Int. J. Numer. Methods Fluids, 17, 49-74 (1993).

43. Beris, A.N. and B.J. Edwards, "On the Admissibility Criteria for Linear Viscoelasticity Kernels." Rheologica Acta, 32, 505-510 (1993).

44. Kalospiros, N.S., B.J. Edwards and A.N. Beris, "Internal Variables for Relaxation Phenomena in Heat and Mass Transfer." Int. J. Heat and Mass Transfer, 36, 1191-1200 (1993).

45. Kordon, A.K., R. Pitchumani, A.N. Beris, V.M. Karbhari, P. Dhurjati, "A Rheological Model for Particulate Ceramic Slurries at Low Temperatures." Scripta Metallurgica et Materialia, 29, 1095-1099 (1993).

46. Mavrantzas, V.G., A. Souvaliotis and A.N. Beris, "Pseudospectral Calculations of Stress-Induced Concentration Changes in Viscometric Flows of Polymer Solutions." Theor. & Computat. Fluid Dynamics, 5, 3-31 (1993).

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49. Chan, C.Y., A.N. Beris and S.G. Advani, "Analysis of Periodic 3-D Viscous Flows Using a Quadratic Discrete Galerkin Boundary Element Method." Int. J. Numer. Meth. Fluids, 18, 953-981 (1994).

50. Pillai, V.K., A.N. Beris and P.S. Dhurjati, "Implementation of model-based optimal temperature profiles for autoclave curing of composites using a knowledge-based system," Ind. Eng. Chem. Res., 33, 2443-2452 (1994).

51. Pitchumani, R., A.K. Kordon, A.N. Beris, V.M. Karbhari, P. Dhurjati, B. Rossing and W. Johnson, "Thermofluid Analysis and Design of a Low-Temperature Performing Process." Metallurgical Transactions B, 25b 761-771 (1994).

52. Richards, J.R., A.M. Lenhoff and A.N. Beris, "Dynamic breakup of liquid-liquid jets." Physics of Fluids, 6, 2640-2655 (1994).

53. Sureshkumar, R., Beris, A.N. and Avgousti, M., "Non-axisymmetric subcritical bifurcations in viscoelastic Taylor-Couette Flow." Proc. R. Soc. (London) Ser. A, 447, 135-153 (1994).

54. Sureshkumar, R. and A.N. Beris, "Linear Stability Analysis of Viscoelastic Poiseuille Flow Using an Arnoldi-Based Orthogonalization Algorithm." J. Non-Newtonian Fluid Mech., 56, 151-182 (1995).

55. Pillai, V., A.N. Beris and P. Dhurjati, "Heuristics-Guided Optimization of Batch Processes." Computers & Chemical Engineering, 20, 275-294 (1996).

56. Souvaliotis, A. and A.N. Beris, "Spectral Collocation/Domain Decomposition Method for Viscoelastic Flow Simulations in Model Porous Geometries." Comput. Meth. Appl. Mech. Engrg., 129, 9-28 (1996).

57. Mavrantzas, V.G. and A.N. Beris, "A hierarchical model for surface effects on chain conformation and rheology of polymer solutions. I. General formulation", J. Chem. Phys., 110, 616-627 (1999).

58. Mavrantzas, V.G. and A.N. Beris, "A hierarchical model for surface effects on chain conformation and rheology of polymer solutions. II. Application to a neutral surface", J. Chem. Phys., 110, 628-638 (1999).

59. Beris, A.N. and D.L. Miller, "Applications of parallel computing." (Guest editorial.) Computers & Chemical Engineering, 19, R5-R6 (1995).

60. Edwards, B.J., A.N. Beris, and V.G. Mavrantzas, "A model with two coupled Maxwell modes." J. Rheol., 40, 917-942 (1996).

61. Beris, A.N. and R. Sureshkumar, "Simulation of time-dependent viscoelastic channel Poiseuille flow at high Reynolds numbers." Chem. Eng. Science, 51, 1451-1471 (1996).

62. Pillai, V., A.N. Beris and P. Dhurjati, "Intelligent Curing of Thick Composites using a Knowledge-Based System." Journal of Composite Materials, 31(1), 22-51 (1997).

63. Richards, J.R., A.N. Beris and A.M. Lenhoff, "Drop Formation in Liquid-Liquid Systems before and after Jetting" Physics of Fluids, 7, 2617-2630 (1995).

64. Sureshkumar, R. and A.N. Beris, "Uniformly valid approximations for the conformational integrals resulting from Gaussian closure in the Hookean dumbbell model with internal viscosity." J. Rheol., 39, 1361-1384 (1995).

65. Sureshkumar, R. and A.N. Beris, "Effect of artificial stress difusivity on the stability of numerical calculations and the flow dynamics of time-dependent viscoelastic flows." J. Non-Newtonian Fluid Mech., 60, 53-80 (1995).

66. Renardy M., Y. Renardy, R. Sureshkumar and A.N. Beris, "Hopf-Hopf and steady-Hopf interactions in Taylor-Couette flow of an Upper-Convected fluid." J. Non-Newtonian Fluid Mech., 63, 1-31 (1996).

67. Sureshkumar, R., A.N. Beris and R.A. Handler, "Direct numerical simulation of polymer-induced drag reduction in turbulent channel flow." Physics of Fluids, 9, 743-755 (1997); https://doi.org/10.1063/1.869229.

68. Dimitropoulos, C.D. and A.N. Beris, "An efficient and robust spectral solver for nonseparable elliptic equations." J. Computat. Phys., 133, 186-191 (1997).

69. Michaud, D.J., A.N. Beris and P.S. Dhurjati, "Curing Behavior of Thick-Sectioned RTM Composites." J. Composite Materials, 32, 1273-1296 (1998).

70. Kulkarni, J.A. and A.N. Beris, "A Model for the Necking Phenomenon in High-Speed Fiber Spinning Based on Flow-Induced Crystallization." J. Rheol., 42, 971-994 (1998).

71. Dimitropoulos, C.D., B.J. Edwards, K.-S. Chae and A.N. Beris, "Efficient Pseudospectral Flow Simulations in Moderately Complex Flow Geometries." J. Computat. Phys., 144, 517-549 (1998).

72. Edwards, B.J. and A.N. Beris, "Rotational Motion and Poisson Bracket Structures in Rigid Particle Systems and Anisotropic Fluid Theory." Open Systems and Information Dynamics, 5: 333-368 (1998).

73. Sieniutycz, S. and A.N. Beris, "A nonequilibrium internal exchange of energy and matter and its Onsager's type variational theory of relaxation." Intern. J. Heat and Mass Transfer, 42, 2695-2715 (1999).

74. Edwards, B.J., A.N. Beris and H.C. Oettinger, "An Analysis of Single and Double Generator Thermodynamic Formalisms for Complex Fluids. II. The Microscopic Description." J. Non-Equil. Thermodynamics, 23, 334-350 (1998).

75. Dimitropoulos, C.D., R. Sureshkumar and A.N. Beris, "Direct Numerical Simulation of Viscoelastic Turbulent Channel Flow Exhibiting Drag Reduction: Effect of the Variation of Rheological Parameters." J. Non-Newtonian Fluid Mechanics, 79, 433-468 (1998).

76. Kulkarni, J.A. and A.N. Beris, "A new approach for simulating chain conformations in dense polymers using fully populated lattice models." Computers in Physics, 12, 641-651 (1998).

77. Kulkarni, J.A. and A.N. Beris, "Lattice-based simulations of chain conformations in semi-crystalline polymers with application to flow-induced crystallization." J. Non-Newtonian Fluid Mechanics, 82, 331-366 (1999).

78. Oettinger, H.C. and A.N. Beris, "A thermodynamically consistent reptation model without independent alignment." J. Chem. Physics, 110, 6593-6596 (1999).

79. Beris A.N. and C.D. Dimitropoulos, “Pseudospectral simulation of turbulent viscoelastic channel flow.” Comput. Method Appl. M., 180, 365-392 (1999).

80. Beris A.N., M.D. Graham, I. Karlin and H.C. Oettinger, “Comment on "Convective nonlinearity in non-Newtonian fluids." Physical Review Letters, 86: (4) 744-744 JAN 22 2001.

81. Beris, A.N. “Bracket formulation as a source for the development of dynamic equations in continuum mechanics.” J. Non-Newtonian Fluid Mechanics, 96: 119-136 (2001).

82. Dimitropoulos C.D., R. Sureshkumar, A.N. Beris and R.A. Handler, "Budgets of Reynolds Stress, Kinetic Energy and Streamwise Enstrophy in Viscoelastic Turbulent Channel Flow." Physics of Fluids, 13: 1016-1027 (2001).

83. Leygue A., A.N. Beris and R. Keunings, "A constitutive equation for entangled linear polymers inspired by reptation theory and consistent with non-equilibrium thermodynamics." J. Non-Newtonian Fluid Mechanics, 101: 95-111 (2001).

84. Mujumdar A., A.N. Beris and A.B. Metzner, "Transient phenomena in thixotropic systems." J. Non-Newtonian Fluid Mechanics, 102: 157-178 (2002).

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87 Michaud, D.J., A.N. Beris and P.S. Dhurjati, "Thick-sectioned RTM composite manufacturing, part II. Robust cure cycle optimization and control." J. Compos. Mater., 36, 1201-1231 (2002).

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90. Edwards B.J. and A.N. Beris, "Nonequilibrium thermodynamics and complex fluids." J. Non-Newtonian Fluid Mech., 120: 1-2 (2004).

91. Mukherjee J., S. Wilson and A.N. Beris, "Flow-induced nonequilibrium thermodynamics of lamellar semicrystalline polymers." J. Non-Newtonian Fluid Mech., 120: 225-240 (2004).

92. Edwards B.J. and A.N. Beris, "Derivation of a spectral pressureless formulation for direct numerical simulation of incompressible channel flows based on a functional formalism." J. Non-Newtonian Fluid Mech., 120: 241-250 (2004).

93. Housiadas K.D. and A.N. Beris, "An efficient fully implicit spectral scheme for DNS of turbulent viscoelastic channel flow." J. Non-Newtonian Fluid Mech., 122: 243-262 (2004).

94. Housiadas K.D., A.N. Beris and R.A. Handler, “Viscoelastic effects on higher order statistics and on coherent structures in turbulent channel flow.” Phys. Fluids, 17, 035106(1-20) (2005).

95. Housiadas K.D. and A.N. Beris, “Direct numerical simulations of viscoelastic turbulent channel flows at high drag reduction.” Korea-Australia Rheol. J., 17: 131-140 (2005).

96. Mavrantzas V.G., A.N. Beris, F.A.M. Leermakers and G. Fleer, “Continuum formulation of the Scheutjens-Fleer lattice statistical theory for homopolymer adsorption from solution.” J. Chem. Phys., 123: Art. No. 174901 (2005).

97. Wapperom P., A.N. Beris and M.A. Straka, “A new transpose split method for three-dimensional FFTs: performance on an Origin2000 and Alphaserver cluster.” Parallel Computing, 32: 1-13 (2006).

98. Housiadas K.D. and A.N. Beris, “Extensional Behavior Influence on Viscoelastic Turbulent Channel Flow.” J. Non-Newtonian Fluid Mech., 140: 41-56 (2006).

99. Handler R.A., K.D. Housiadas and A.N. Beris, “Karhunen-Loeve Representations of Drag Reduced Turbulent Channel Flows Using the Method of Snapshots.” Int. J. Numer. Meth. Fluids, 52: 1339-1360 (2006).

100. Mavrantzas, V.G., Beris, A.N. and Ath. Tziavaras, “4th International Workshop on non-equilibrium thermodynamics and complex fluids-Preface”, J. Non-Newtonian Fluid Mech., 152: 1 (2008).

101. Beris A.N. and H.C. Öttinger, “Bracket Formulation of Nonequilibrium Thermodynamics for Systems Interacting with the Environment.” J. Non-Newtonian Fluid Mech., 152: 2-11 (2008).

102. Beris A.N., E. Stiakakis, and D. Vlassopoulos, “A Thermodynamically Consistent Model for the Thixotropic Behavior of Concentrated Star Polymer Suspensions.” J. Non-Newtonian Fluid Mech., 152: 76-85 (2008).

103. Samanta, G., G.M. Oxberry, A.N. Beris, R.A. Handler, and K.D. Housiadas, “Dynamic K-L analysis of coherent structures based on DNS of turbulent Newtonian and viscoelastic flows.” J. Turbulence, 9: 1-25 (2008).

104. Mukherjee, J. and A.N. Beris, “Multiscale Modeling of Crystallization Morphologies in High Speed Fiber Spinning of Semicrystalline Polymers.” Journal of Computational and Theoretical Nanoscience, special issue ``Nematic Liquid Crystalline Polymers and Nanocomposites’’ 7: 726-737 (2010).

105. G. Samanta, A.N. Beris, R.A. Handler, and K.D. Housiadas, "Velocity and Conformation Statistics based on Reduced Karhunen-Loeve Projection Data from DNS of Viscoelastic Turbulent Channel Flow", J. Non-Newt. Fluid Mech., 160: 55-63 (2009).

106. D.A. Johnson, U.P. Naik and A.N. Beris, "Efficient implementation of the proper outlet flow conditions in blood flow simulations through asymmetric arterial bifurcations." Int. J. Numer. Meth. Fluids, 66(11): 1383-1408, DOI: 10.1002/fld.2319, (2011).

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43. A. Beris and Leslie V. Woodcock, “Closed virial equation-of-state for the hard-disk fluid.” ArXiv:1008.3872, 2010.

44. Paul M. Mwasame, Antony N. Beris and Norman J. Wagner, “A Multiscale Tensorial Model for the Rheology of Aggregating Thixotropic Colloidal Suspensions with Yield Stress.” Extended Abstract of Paper 5612 appearing in the Proceedings of the XVIIth International Congress on Rheology, ICR2016, Kyoto, Japan, August 8-12, 2016.

45. Jeffrey S. Horner, Antony N. Beris and Norman J. Wagner, “Modeling of viscoplastic steady state shear flow blood rheology in different species.” Extended Abstract of Paper 5717 appearing in the Proceedings of the XVIIth International Congress on Rheology, ICR2016, Kyoto, Japan, August 8-12, 2016.

46. Antony N. Beris, Chapter 8, Hemorheology, in: Theory and Applications of Colloidal Suspension Rheology, N.J. Wagner and J. Mewis (eds)., Cambridge U. Press, Cambridge, 2021, p.316-351.

47. Varghese Kurian, Navid Ghadipasha, Michelle Gee, Anais Chalant, Teresa Hamill, Alphonse Okossi, Lucy Chen, Bin Yu, Babatunde A. Ogunnaike, Antony N. Beris, A Systems Engineering Approach to Modeling and Analysis of Chronic Obstructive Pulmonary Disease (COPD), arXiv:2212.13207v1 [physics.med-ph] https://doi.org/10.48550/arXiv.2212.13207.

48. Kurian, V., Ghadipasha, N., Beris, A., & Ogunnaike, B. A. (2022). Effect of Metabolic Rates in the Modeling of the Cardio-Respiratory System in COPD patients. IFAC-PapersOnLine, 55(23), 41-45. [Presented at FOSBE 2022].

D. INVITED LECTURES

1. "Computer Simulation of Complicated Non-Newtonian Flows." ATT Bell Laboratories, Murray Hill, New Jersey (October 22, 1985).

2. "Large Scale Computations of Viscoelastic Flows." IBM Palo Alto Scientific Center (PASC), Palo Alto, California (June 12, 1987).

3. "Numerical Methods for Viscoelastic Flow Simulations Based on the Physics and the Mathematical Character of the Equations." 5th Inter. Conf. on Numerical Methods in Laminar and Turbulent Flow, Montreal, Canada (July 8, 1987).

4. "Spectral Methods in Viscoelastic Flow Calculations." Naval Research Laboratory, Washington, D.C. (October 9, 1987).

5. "Progress in the Calculation of Viscoelastic Flows." Department of Chemical Engineering, State University of New York at Buffalo, New York (October 28, 1987).

6. "Spectral Methods Applied to Viscoelastic Flow Calculations." ATT Bell Labs, Murray Hill, New Jersey (February 10, 1988).

7. "Liquid Crystals." CCM Workshop, Newark, Delaware (May 18, 1988).

8. Seminar series in the Department of Mechanical Engineering at University of Sydney held for 2 hours, once a week, from 7/4 to 8/9 1988 on selected topics in numerical methods: Viscoelastic flow calculations in an undulating tube (7/4), (Pseudo)Spectral methods (7/12), Parallel Processing (7/19), Finite-Elements (7/26), Upwind techniques (8/2), and Computer-aided non-linear analysis (8/9), Sydney, Australia.

9. "Recent Progress in Numerical Calculations of Viscoelastic Flows." Invited Lecture in the Rheology Workshop - Monash University, Royal Parade Motor Inn, Melbourne, Australia (August 11-12, 1988).

10. "Numerical Methods for the 1990's and Beyond." Department of Mechanical Engineering, University of Sydney, Sydney, Australia (August 25, 1988).

11. "Progress in the Numerical Simulation of Viscoelastic Flows." Department of Chemical Engineering, Cornell University, Ithaca, New York (September 27, 1988).

12. "Supercomputers." Delaware Academy of Science, Super-Science Symposium, November 10, 1988, John W. Clayton Hall, Newark, Delaware.

13. "Hamiltonian Formulation of the Equations for Incompressible Fluid Flows with Applications to Liquid Crystals." Serie de Seminaires Speciaux Parraines par le C.R.A.S.P., Department de Genie Chimique, Universite de Montreal, Montreal, Canada (January 24, 1989).

14. "Spectral-Pseudospectral Calculations of Viscoelastic Flows." Rheology Research Seminar, Mathematics Research Center, The University of Wisconsin-Madison, Madison, Wisconsin (April 7 1989).

15. "Progress in the Numerical Simulation of Viscoelastic Flows." Department of Chemical Engineering, University of Illinois at Urbana-Champaign, Illinois (September 12, 1989).

16. "Progress in the Numerical Simulation of Viscoelastic Flows." Department of Chemical Engineering, University of Notre Dame, Indiana (September 19, 1989).

17. "Parallel Computer Applications in Material Simulations." Alcoa Symposium, Pennsylvania (October 15, 1989).

18. "Progress in the Numerical Simulation of Viscoelastic Fluids." Fluid Mechanics Seminar Series, Department of Chemical Engineering, Princeton, New Jersey (November 14, 1989).

19. "Large-Scale Computations of Non-Newtonian Flows." Supercomputing Conference "Numerical Simulation in Science" jointly sponsored by E.I. du Pont de Nemours & Co. and Academic Computing and Instructional Technology of University of Delaware, Clayton Hall, Newark, Delaware (December 1, 1989).

20. "Poisson-Bracket Formulation of Fluid Flow Equations: Applications in Viscoelastic and Liquid Crystalline Flows." Department of Mathematics, The Pennsylvania State University, University Park, Pennsylvania (December 8, 1989).

21. "Progress in Viscoelastic Flow Simulations." Chemical Engineering Colloquium Series, Lehigh University, Bethlehem, Pennsylvania (January 31, 1990).

22. "Progress in Computer Simulations of Complex Flows." Mobil R & D and University of Delaware Symposium, Mobil R & D, Paulsboro, New Jersey (March 6, 1990).

23. "Progress in the Numerical Simulation of Viscoelastic Flows." Symposium Series on Processing and Composites, Polymers Division, National Institute of Standards and Technology, Goetesburg, Virginia (April 18, 1990).

24. "Modelling Transport Phenomena in Materials with Internal Microstructure." CCM Composites Workshop, Center for Composite Materials, University of Delaware, Newark, Delaware (May 17, 1990).

25. "Progress in the Numerical Simulation of Viscoelastic Fluids." Chemical Engineering Seminar Series, Department of Chemical Engineering, New Jersey Institute of Technology, Newark, New Jersey (September 25, 1990).

26. "A Novel Approach for the Modelling of Transport Phenomena in Structured Continua." Seminar, School of Chemical Engineering, Purdue University, West Lafayette, Indiana (September 27, 1990).

27. "Modelling and Simulation of Polymer Flows." University of Delaware - E.I. DuPont & Nemours Symposium, Clayton Hall, University of Delaware, Newark, Delaware (October , 1990).

28. "LU Decomposition in Boundary Element Problems." In the "User Experience with Shared Memory MPP Supercomputers" section of "Guideposts in Supercomputing" a series of seminars organized by BBN Advanced Computers, The Pointe at Squaw Peak, Phoenix, Arizona (February 12-14, 1991).

29. "Composites Manufacturing Research at the University of Delaware." Seminar, Dow Plastics Development, Tagerwillen, Switzerland (August 16, 1991).

30. "Spectral Calculations of Viscoelastic Flows: Evaluation of the Giesekus Constitutive Equation in Model Flow Problems." Invited talk at "Dynamics of Polymeric Liquids" an International Conference, Capri, Italy (September, 11-14, 1991).

31. "Polymer Processing: Modelling and Simulation." Polymers Technical Lecture Series, Dupont Experimental Station, Wilmington, Delaware (October, 1, 1991).

32. "Modelling and Simulation of Polymer and Composites Processing." Department of Chemistry and Chemical Engineering Seminar Series, Stevens Institute of Technology, Hoboken, New Jersey (October, 2, 1991).

33. "Spectral Calculations of Viscoelastic Flows." Guest lecture for ChE 450: Advances in Transport Phenomena, Graduate Chemical Engineering Course, Lehigh University, Bethlehem, Pennsylvania (October 14, 1991).

34. "Spectral Calculations of Viscoelastic Flows." Invited lecture at the Navy Research Laboratory, Division of Advanced Remote Sensing, Washington, DC (December 10, 1991).

35. "Viscoelastic Flow Instabilities: Inception and Non-Linear Evolution." Keynote Paper presented at the 11th International Congress on Rheology, Brussels, Belgium (August 20, 1992).

36. "Interfacial Phenomena in the Rheology of Dilute Polymer Solutions." Spring 1993 Seminar Series, Department of Chemical Engineering, University of Maryland, College Park, Maryland (March 23, 1993).

37. "National Challenge Applications in Complex Fluids: Constitutive Equations, Flow Simulations and Process Modeling." High Performance Computing in Applications in Chemical and Thermal Systems, NSF Workshop, Washington DC (June 4, 1993).

38. "Pattern Formation and Bifurcations in the Viscoelastic Taylor-Couette Flow." 1993 SIAM Annual Meeting, Materials Science Program, Symposia on Viscoelastic Fluids: Complex Flows, Instabilities and Bifurcations, Philadelphia, Pennsylvania (July 12-16, 1993).

39. "Spectral Collocation Domain Decomposition Method for Viscoelastic Flow Simulations in Model Porous Geometries." Second US. National Congress on Computational Mechanics at The Hayatt Regency Hotel, Washington DC (with A. Souvaliotis) (August 16-18, 1993).

40. "Pattern Formation and Bifurcations in the Viscoelastic Taylor-Couette Flow." Department of Chemical Engineering, Washington University, St. Louis, Missouri (November 15, 1993).

41. "Surface Effects on the Chain Conformation and the Rheology of Polymer Solutions." Department of Chemical Engineering, Université de Laval, Quebec, Canada (March 7, 1994).

42. "Modeling the Dynamics of Continuum Media with Internal Microstructure." Department of Mathematics, Université de Laval, Quebec, Canada (March 8, 1994).

43. "Pattern Formation and Bifurcations in the Viscoelastic Taylor-Couette Flow." Department of Chemical Engineering, University of Patras, Greece (June 13, 1994).

44. "Fluid Mechanics of Liquid-Liquid Systems." Schlumberger Cambridge Research, Cambridge, U.K. (June 27, 1994).

45. "Integrated Simulation, Optimization and Control of Autoclave Curing of Thick Laminate Composites." CADCOMP'94, The Fourth International Conference on Computer Aided Design in Composite Materials Technology, Southampton,

United Kingdom (with Z.-Y. Yang, V. Pillai and P. Dhurjati) (June 29-July 1, 1994).

46. "Spectral Calculations of Viscoelastic Flows." Department of Mathematics, The University College of Wales, Aberystwyth, Dyfed, U.K. (July 1, 1994).

47. "Surface Effects on Polymer Rheology." Department of Chemical Engineering, Fall Seminar Series, University of Wisconsin-Madison (September 29, 1994).

48. "Computer-Aided Analysis of Viscoelastic Flows: Pattern Formation and Bifurcations in the Viscoelastic Taylor-Couette Flow." Department of Mathematics, Virginia Polytechnic Institute and State University, Blacksburgh, Virginia (October 28, 1994).

49. "Pattern Formation and Bifurcations in the Viscoelastic Taylor-Couette Flow." DuPont/University of Delaware Seminar Series, DuPont Experimental Station, Wilmington, Delaware (November 14, 1994).

50. "Surface Effects on the Conformation and the Rheology of Polymer Solutions." Department of Chemical Engineering, Fall Seminar Series, Polytechnic University, Brooklyn (September 6, 1995).

51. "Simulation of Viscoelastic Turbulent Channel Flow" Presented at the Minisymposium on "Modeling and Simulation of Viscoelastic Flows" at the 1995 Annual SIAM meeting, Charlotte, North Carolina, October 23-26, 1995.

52. "Direct Numerical Simulation of Polymer-Induced Drag Reduction in Turbulent Channel Flow" Seminar at the Center of Fluid Mechanics at Brown University, Providence, Rhode Island, February 20, 1996.

53. "Direct Numerical Simulation of Polymer-Induced Drag Reduction in Turbulent Channel Flow" Seminar at the Polymer Processing Science & Technology group (PPST), MIT, Cambridge, Massachusetts, February 21, 1996.

54. "Dynamics of Liquid Crystals" Seminar at A Newton Institute Euroconference "Constitutive Relations and Their Applications", Isaac Newton Institute for Mathematical Sciences, University of Cambridge, Cambridge, U.K., April 15-19, 1996.

55. "Computed Models for Drag Reduction" Seminar at A Newton Institute Euroconference "Constitutive Relations and Their Applications", Isaac Newton Institute for Mathematical Sciences, University of Cambridge, Cambridge, U.K., April 15-19, 1996.

56. "Surface Effects on the Rheology and Conformation of Polymer Solutions" Seminar at A Newton Institute Euroconference "Constitutive Relations and Their

Applications", Isaac Newton Institute for Mathematical Sciences, University of Cambridge, Cambridge, U.K., April 15-19, 1996.

57. "Poisson-Bracket Description of the Thermodynamics of Flowing Systems" Paper presented at the workshop on "Rheology and Thermodynamics" organized by M. Grmela, in the Ecole Polytechnique of Montreal, Quebec, Canada, August 14-16, 1996.

58. "Direct Numerical Simulation of Polymer-Induced Drag Reduction" Presented in the 1996 Fall Semester Fluid Mechanics Seminar Series of the Levich Institute, CCNY, New York, September 10, 1996.

59. "Direct Numerical Simulation of Polymer-Induced Drag Reduction" Presented in the 1996 Fall Semester Fluid, Particular and Environmental Systems Seminar series in Mechanical Engineering, U. of Delaware (organized by Prof. Wang), September 16, 1996.

60. "Modeling of Mixing and Reaction in Non-Newtonian Fluids" Keynote paper presented at the "Computational Fluid Dynamics in Chemical Reaction Engineering" Engineering Foundation Conference (J. Lerou and M. Dudukovic, organizers), Bahia Hotel & Conf. Center, San Diego, California, October 13-18, 1996.

61. "Direct Numerical Simulation of Polymer-Induced Drag Reduction" Presented in the 1996-97 Seminar Series at the Department of Chemical Engineering in Patras, Greece, January 15, 1997.

62. "Surface Effects on the Conformation and the Rheology of Polymer Solutions." Department of Materials Science, ETH, Zurich, (July 2, 1997).

63. "Direct Numerical Simulation of Polymer-Induced Drag Reduction in Turbulent Channel Flow". Institute of Polymer Physics, ETH, Zurich, (July 9, 1997).

64. "Direct Numerical Simulation of Polymer-Induced Drag Reduction in Turbulent Channel Flow". ASEE 1997 Summer School for Chemical Engineering Faculty, Snowbird, Utah, August 13, 1997.

65. "Flow-Induced Crystallization in Fiber Spinning." Graduate Seminar Series at the Chemical Engineering Department at the University of Missouri at Rolla, Rolla, MO, (April 8, 1998).

66. "Lattice-based Simulations of Chain Conformations in Semi-Crystalline Polymers with Applications to Flow-Induced Crystallization." IUTAM 98 Symposium of Viscoelastic Fluid Mechanics: Effects of Molecular Modelling, Stanford, CA, (June 21-25, 1998).

67. "Lattice-Based Simulations of Chain Conformations in Semi-Crystalline Polymers." Presented to
the Polymer Group (Prof. Theodorou, group leader) at the Department of Chemical Engineering of the University of Patras, Patras, Greece, (August 5, 1998).

68. "Lattice-Based Simulations of Chain Conformations in Semi-Crystalline Polymers." Institute of Polymer Physics (Swiss F.I.T. Seminar Series), ETH, Zurich, (August 12, 1998).

69. "Direct Numerical Simulation of Polymer-Induced Drag Reduction in Turbulent Channel Flow". 1998-99 Seminar Series of the Department of Chemical Engineering at Iowa State University, Ames, IO (October 8, 1998).

70. "Simulation of Amorphous Phase in Semi-Crystalline Polymers using 2-DLattice Models." Institute of Electronic Structure and Laser (IESL) Seminar, Foundation for Research and Technology-Hellas, IESL, Heraklion, Crete, Greece (January 20, 1999).

71. "Direct Numerical Simulation of Polymer-induced Drag Reduction in Turbulent Channel Flow". Graduate Seminar Series in the Department of Mechanical and Chemical Engineering (joint seminar) of Tulane University, New Orleans, Lo, (April 9, 1999).

72. "Efficient (NlogN) Pseudospectral Simulations of Free Surface Flows". Invited Presentation at the 3rdNational Congress on Computational Mechanics, Volos, Greece, (June 24-26, 1999).

73. "Direct Numerical Simulation of Polymer-Induced Drag Reduction in Turbulent Channel Flow." Seminar presented on Monday, November 11, 1999 at the Laboratory of Aero & Hydrodynamics, Delft University of Technology, Delft, The Netherlands.

74. "Efficient (NlogN) pseudospectral simulations of free surface flows." Seminar presented on Monday, October 25, 1999 at the Remote Sensing and Hydrodynamics Branch, Office of Naval Research, Washington, DC.

75. "Direct Numerical Simulation of Polymer-Induced Drag Reduction in Turbulent Channel Flow." Invited Presentation of the "Novel Flows" session at the 1999 National Annual AiChE meeting, that was held October 31, 1999 - November 5, 1999 at Dallas, Texas.

76. "Efficient (NlogN) pseudospectral simulations of free surface flows." Seminar presented on Tuesday, November 16, 1999 at the Division of Applied Mathematics and Theoretical Physics (DAMTP), Cambridge University, U.K.

77. “Direct Numerical Simulation of Polymer-Induced Drag Reduction in Turbulent Channel Flow.” Seminar presented on Friday, November 19, 1999 at the Division of Applied Mathematics and Theoretical Physics (DAMTP), Cambridge University, U.K.

78. “Direct Numerical Simulation of Polymer-Induced Drag Reduction in Turbulent Channel Flow.” Seminar presented on Thursday, December 9, 1999 at CESAME, Universite catholique de Louvain, Louvain-la-Neuve, Belgium.

79. “Efficient (NlogN) pseudospectral simulations of free surface flows.” Seminar presented on March 6, 2000 on Polyflow software company (subsidiary of Fluent Inc.), Louvain-la-Neuve, Belgium.

80. “Large Scale Computational Fluid Dynamics Simulations of Non-Newtonian Flows: Challenges and Rewards.” Invited presentation for the HPC-2000 meeting, April 17-20, 2000, Washington DC.

81. “Direct Numerical Simulations of Polymer-Induced Drag Reduction in Turbulent Channel Flow.” Seminar at the Institute for Fluid Mechanics, Technische Universitaet Muenchen, Germany, May 9, 2000.

82. “Nonequilibrium Thermodynamics Applications in Polymer Rheology” plenary presentation to the "5`eme Congr`es National de Me'canique The'orique & Applique'e, (Belgian society of mechanics annual meeting) Louvain-la-Neuve, May 23-24, 2000.

108. “Direct Numerical Simulations of Polymer-Induced Drag Reduction in Turbulent Channel Flow.” Seminar within the regular seminar series: LES CONFERENCES DU LAGEP (LABORATOIRE D’AUTOMATIQUE ET DE GENIE DES PROCEDES) EN 2000, Université Claude Bernard Lyon 1. ESCPE-Lyon. CNRS, June 8, 2000.

109. “Admissibility and LES of differential viscoelastic fluid models.” Special seminar at Prof. H.C. Oettinger’s research group, ETH, Zurich, Switzerland, June 28, 2000.

110. “Modern Non-Equilibrium Thermodynamics Formulations with Applications in Polymer Rheology.” Seminar at the Institute of Chemical Engineering and High-Temperature Chemical Processes (ICE/HT-FORTH) in Patras, Greece, August 2, 2000.

111. “Bracket formulation as a source for the development of dynamic equations in continuum mechanics” Lecture at the summer school part of the"Workshop and Summer School on Nonequilibrium Thermodynamics and Complex Fluids" in Oxford, 14-18 August 2000.

112. "Direct Numerical Simulations of Turbulent Viscoelastic Flows: Challenges and Rewards." Seminar at the Department of Chemical Engineering, University of Wisconsin, Madison, October 24, 2000.

113. "Brownian Dynamics Methods for the Solution of Complex Polymeric Flows Based on Kinetic Theory Models: Early (CONNFFESSIT) and More Recent (Configuration Field) Approaches." Seminar at the Program in Applied and Computational Mathematics, Princeton University, New Jersey, December 11, 2000.

114. "Direct Numerical Simulations of Turbulent Viscoelastic Flows: Challenges and Rewards." Seminar in the department of Mechanical Engineering, Johns Hopkins University, Maryland, March 2, 2001.

115. "Recent Progress on Lattice-Based Modeling of the Amorphous Phase in Semicrystalline Polymers." Seminar at the DuPont Experimental Station, Building 302, Wilmington, Delaware, March 12, 2001.

116. "DNS Modeling and Optimization of Friction Drag Technologies Using Polymers and Surfactants." Seminar in the Friction Drag Technology Principle Investigator Kick-Off Meeting, Hyatt Newporter, Newport Beach, California, March 19-22, 2001.

117. "Direct Numerical Simulations of Turbulent Viscoelastic Flows: Challenges and Rewards." Seminar in the department of Chemical Engineering, Penn State University, Pennsylvania, March 27, 2001.

118. "Direct Numerical Simulations of Turbulent Viscoelastic Flows: Challenges and Rewards." Seminar in the School of Chemical Engineering and Materials Science, The University of Oklahoma, Norman, Oklahoma, September 27, 2001.

119. "Nonequilibrium Thermodynamics Applications in Rheology." Plenary Lecture delivered at the 73rd Annual Meeting of the Society of Rheology, Hyatt Regency Bethesda, Bethesda, Maryland, October 22, 2001.

120. "DNS Modeling and Optimization of Friction Drag Technologies Using Polymers and Surfactants." Seminar in the Friction Drag Reduction Principle Investigator Meeting, Double Tree Hotel, Rockville, Maryland, October 26-27, 2001.

121. "Nonequilibrium Thermodynamic Applications to Polymer Rheology." Seminar in the Department of Chemical Engineering, University of Tennessee, Knoxville, Tennessee, November 27, 2001.

122. "The Influence of Reynolds Number on Polymer-Induced Drag Reduction." Seminar at the Levich Institute in the City College University of New York, New York, New York, December 4, 2001.

123. "Probing the Polymer Structure-Dynamics Relation Through a Turbulent Flow Field: Direct Numerical Simulations of Polymer-Induced Drag Reduction." Seminar presented in the PPST Program in Polymer Science and Technology Seminar Series at MIT, Cambridge, May 1, 2002.

124. "Direct Numerical Simulations of Turbulent Viscoelastic Channel Flow: Towards a Better Understanding of Drag Reduction." GALCIT Fluid Mechanics Seminar at CALTECH, Pasadena, California, May 24, 2002.

125. "High Performance Computing Applications in Chemical Engineering." Plenary lecture at the CAST Plenary session, at the 2002 AICHE, 33rd Annual Meeting, Indianapolis, Indiana, November 2002.

126. "Multiscale modeling in the nonequilibrium thermodynamics of semicrysalline polymers." Invited presentation to the "Multiscale" session at the 2002 AICHE, 33rd Annual Meeting, Indianapolis, Indiana, November 2002.

127. "Direct Numerical Simulations of Turbulent Viscoelastic Channel Flow: Towards a Better Understanding of Drag Reduction." Seminar presented to the materials modeling group, Rekha Rao and Lisa Monty (chairs), Sandia National Laboratories, Albuquerque, New Mexico, April 2, 2003.

128. "Multiscale modeling of the stress-induced chain conformations during the processing of Semicrystalline Polymers." Seminar presented in Chemical Engineering Seminar Series at U. Penn, Philadelphia, April 07, 2003.

129. "Computing Polymer Turbulence: Challenges and Rewards." Arthur B. Metzner inaugural lecture, University of Delaware, April 24, 2003.

130. "Poisson Bracket: A new method for developing equations in nonequilibrium thermodynamics." Seminar at the Applied Mathematics seminar series, Department of Mathematics, University of Delaware, April 29, 2003.

131. "Recent Advances in DNS of Turbulent Viscoelastic Flows: Understanding Polymer-Induced Drag Reduction." Keynote lecture presented to the Computational Fluid Dynamics in Computational reaction Engineering III international meeting, Davos, Switzerland, May 30, 2003.

132. "Multiple scale analysis of the flow-induced nanoscale crystalline morphology in fiber spinning polymer processes." Invited lecture to the NSF-sponsored workshop on nanotechnology: Polynanomeress: A Matrix for Design to Build Processes (Jim Seferis organizer), Porto Heli, Greece, June 25-July 2, 2003.

133. "Nonequilibrium Thermodynamics as a tool for the construction of more physical models of material behavior". Presented as part of the Applied Mathematics Seminar Series, University of Minnesota, Minneapolis, Minnesota, September 18, 2003.

134. "Flow-Induced Nonequilibrium Thermodynamics of Lamellar Semicrystalline Polymers." Invited presentation to the DuPont/ U of Del Seminar Series, DuPont Experimental Station, Wilmington, Delaware, December 8, 2003.

135. "Recent advances in DNS of turbulent viscoelastic channel flows: Understanding polymer-induced drag reduction." Keynote lecture at the 3rd International Meeting of the Hellenic Society of Rheology, Athens, Greece, June 27-29, 2004.

136. "Multiscale Modeling of Flow-Induced Semicrystalline Morphologies in Polymer Fiber Spinning." Keynote lecture at the special session to celebrate the first graduating students at the Department of Materials Science, University of Patras, Greece, July 13, 2004.

137. "Direct Numerical Simulations of Viscoelastic Turbulent Channel Flows: Towards an Understanding of the Polymer-Induced Drag Reduction." Seminar presented in Chemical Engineering Seminar Series at Lehigh University, Pennsylvania, October 27, 2004.

138. "A New Constitutive Relation for Strong Extensional Polymer Flows." Seminar presented in "Microscale Flow and Transport Seminar Series", Department of Chemical Engineering and Materials Science, University of Minnesota, Minnesota, January 24, 2005.

139. "Additives-Based Drag Reduction: Progress and Opportunities." Special Seminar to the Chemistry and Nanoscience Directors at the Navy Research Laboratory (NRL), Washington, DC, May 10, 2005.

140. "A New Constitutive Relation for Strong Extensional Polymer Flows." Seminar presented at LG Chem Research Park, 104-1, MUNJI-DONG, YUSEONG-GU, DAEJEON 305-380 KOREA, May 18, 2005.

141. "Direct Numerical Simulations of Viscoelastic Turbulent Channel Flows at High Drag Reduction." Plenary Lecture presented at the Sixth International Symposium on Applied Rheology, May 19, 2005, Korea University, Seoul, Korea, May 19, 2005.

142. "A New Constitutive Model for Strong Extensional Polymer Flows." Seminar at the School of Chemical and Biological Engineering, Seoul National University, Seoul, Korea, May 20, 2005.

143. "A New Constitutive Model for Strong Extensional Polymer Flows." Seminar at CESAME, Universite catholique de Louvain-la-neuve, Louvain-la-neuve, Belgium, May 26, 2005.

144. "Recent Advances in Direct Numerical Simulations of Turbulent Viscoelastic Channel Flows: Towards a better Understanding of Polymer-Induced Drag Reduction." Seminar presented in the Regular Seminar Series of the School of Chemical and Biomolecular Engineering, Cornell University, Ithaca, New York, September 12, 2005.

145. "One Generator Bracket-Based Approach to Nonequilibrium Thermodynamics: Overview and Current Applications." Plenary lecture presented at the International Conference and Summerschool THERMOCON'05, Thermal Theories of Continua: Survey and Developments, University of Messina, Messina, Italy, September 25-30, 2005.

146. "Numerical Challenges in the Direct Numerical Simulation of Turbulent Viscoelastic Flows." Seminar to the Center for Scientific Computing and Mathematical Modeling, University of Maryland, Wednesday, April 12, 2006.

147. "Modeling strong extensional flows of polymers solutions and melts." Seminar presented at the Institute for Polymers, ETH – ZURICH, June 07, 2006.

148. "Direct Numerical Simulations of Viscoelastic Turbulent Channel Flow at High Drag Reduction." Keynote lecture presented at the 7th World Congress on Computational Mechanics, Los Angeles, California, July 20, 2006 .

149. "Modeling Strong Extensional Flows of Polymer Solutions and Melts." Keynote Lecture presented at the 43rd Annual Technical Meeting of the Society of Engineering Science, Penn State University, University Park, PA, August 13-16, 2006.

150. "A New Constitutive Model for Strong Extensional Polymer Flows." Seminar presented at the Fluid Mechanics and Polymers Research Seminars, Department of Chemical Engineering, University pf Patras, Patras, Greece, November 8, 2006.

151. "Thixotropy and Viscoplasticity of Concentrated Suspensions: Adventures in Modeling." Seminar presented in the Regular Seminar Series of the Department of Materials Science & Technology, University of Crete, Road to Voutes, Vasilika Vouton, Heraklion 71110, Crete, Greece, November 24, 2006.

152. "Large Scale Simulations of Turbulent Flow within an Undulating Channel." Seminar presented in the regular seminar series of the Department of Mathematics of the Aegean University, Samos, Greece, Thursday, December 7, 2006.

153. “Modeling Strong Extensional Flows of Polymer Solutions and Melts.” Seminar presented in the Spring 2007 seminar series of the Department of Polymer Engineering, University of Akron, Akron, Ohio, February 2, 2007.

154. “Modeling Strong Extensional Flows of Polymer Solutions and Melts.” Seminar presented to the Polymer Processing division, DuPont Experimental Station, Wilmington, Delaware, March 15, 2007.

155. “Recent Advances in Direct Numerical Simulations of Turbulent Viscoelastic Channel Flows: Towards a better Understanding of Polymer-Induced Drag Reduction.” Seminar presented to the Seminar Series of the Department of Mathematics and Statistics, Old Dominion University, Norfolk, Virginia, March 29, 2007.

156. “Multiscale Analysis of Strong Extensional Flows of Polymer Solutions and Melts.” Seminar presented to the Mathematics Colloquium, Old Dominion University, Norfolk, Virginia, March 30, 2007.

157. “Modeling Strong Extensional Flows of Polymer Solutions and Melts.” Invited presentation in the CSCAMM Workshop on “Multiscale Modeling and Simulation of Complex Fluids,” Center for Scientific Computation and Mathematical Modeling, University of Maryland, April 19, 2007.

158. “Polymer-Induced Drag Reduction.” Seminar presented in the Arthur B. Metzner Commemorative Symposium, Clayton Hall, University of Delaware, Newark, Delaware, May 14, 2007.

159. “Large Scale Computational Fluid Dynamics (CFD) Simulations of Viscoelastic Turbulent Channel Flow." Seminar presented in the Computational Science and Engineering Seminar Series (Peter Monk, organizer), University of Delaware, November 30, 2007.

160. “Recent Advances in Direct Numerical Simulations of Turbulent Viscoelastic Channel Flows: Towards a better Understanding of Polymer-Induced Drag Reduction.” Invited lecture at the British Society of Rheology/Institute of Non-Newtonian Fluid Mechanics conference, on “COMPLEX FLOWS OF COMPLEX FLUIDS” University of Liverpool, UK, March 18, 2008.

161. “Multiscale Modeling and Simulation of Surface Effects in Polymer Flows.” Invited presentation at the Workshop to kick-start the Kavli Research Program: Nanoscale Interfacial Phenomena in Complex Fluids, Kavli Institute for Theoretical Physics, Chinese Academy of Sciences (CAS) Beijing, China, May 20, 2008.

162. “On the Hamiltonian and Dissipative Structure of Some Low-Order Models in Fluid Dynamics and Turbulence.” Seminar presented at the Institute for Polymers, ETH – ZURICH, July 02, 2008.

163. “Polymer-Induced Drag Reduction of Turbulent Flows. What Have we Learnt from Direct Numerical Simulations?” Invited lecture presented at the #154 – Invited Session “Applied Mathematics in Chemical Engineering: Past 100 Years and the Future, at the AIChE Centennial Annual Meeting, Philadelphia Convention Center, November 17, 2008.

164. “Polymer-modified turbulence: Large and small scale analysis.” Seminar, Tuesday, September 29, 2009, School of Chemical Engineering, Purdue University, Indiana.

165. “Data Reduction in Viscoelastic Turbulent Channel Flows.” Seminar, presented at the IMA annual program year workshop: Flowing Complex Fluids: Fluid Mechanics-Interaction of Microstructure and Flow, October 12, 2009, University of Minnesota, Minnesota.

166. “Polymer-modified turbulence: Large and small scale analysis.” Seminar, Wednesday, January 20, 2010, presented at the Department of Chemical and Biological Engineering, Graduate Seminar Series, Illinois Institute of Technology, Chicago, Illinois.

167. “Understanding Polymer-Induced Drag Reduction in Turbulent Flows through Large Scale Numerical Simulations” Luncheon Seminar at the Mechanical Engineering Faculty High Performance Computing Series Seminars at the University of Delaware, Spenser Laboratory, October 06, 2010.

168. "Novel, Hybrid, Blood Flow Simulations within Large Arterial Vessels," (with David A. Johnson and Ulhas P. Naik), Invited Paper presented at the Invited Plenary Session of the Computing Systems and Technology (CAST) Division, at the 2010 Annual Meeting of the American Institute of Chemical Engineers, Salt Palace Convention Center, Salt Lake City, Utah. November 8, 2010.

169. “Nonequilibrium Thermodynamics Applications to Rheologically Complex Systems” Seminar at the Prof. E. Windhab’s research group, Department of Food Engineering, ETH, Zurich, June 30 2011.

170. "A 1D Model for Blood Flow in the Arterial Circulation Network and Some Novel Applications." Invited Seminar presented at the Biocomputing Group of the Applied Mathematics Department, Head: Prof. Dr. Christof Schütte, (Dr. Stefan Bernhard, head of blood flow modeling subgroup) at the Free University of Berlin, Berlin, Germany, Thursday, December 15, 2011.

171. "Blood Flow Modeling and Simulations" Invited short presentation at the Biomedical Engineering Symposium 2012, on Biomedical Engineering Interests and Projects, May 22, 2012.

172. "Modern Non-Equilibrium Thermodynamics Contributions to the Modeling of the Coupling of Structure and Flow Dynamics in Complex Materials." Invited Seminar presented at the Summer School in Dimokritos National Center for Scientific Research, Agia Paraskevi, Athens, Greece, July 17, 2012.

173. (with K.D. Housiadas as co-author) "On the Skin Friction Coefficient in Viscoelastic Turbulent Wall Bounded Flows." Keynote Paper (by invitation) presented at the Complex Flows Session of the XVIth International Congress on Rheology, ICR2012, Lisbon, Portugal, August 5-10, 2012, presented on Monday, August 6, 2012.

174. (with Natalie Germann and Pam Cook as co-authors) "Coupling reactions and molecular conformations in the modeling of shear banding in wormlike micelar systems." Invited keynote presentation at the 6th International Workshop on Nonequilibrium Thermodynamics and 3rd Lars Onsager Symposium, IWNET 2012, Roros, Norway, August 19-24, 2012, presented on Monday, August 20, 2012.

175. "Modeling of the non-Newtonian characteristics of blood flow in the human arterial network." Invited presentation at the Fluid Dynamics of Living Systems NSF Workshop, September 15-16, 2014, Arlington, Virginia. Session 2: Beyond CFD: Multiscale Modeling of Human Physiology.

176. "Modeling of the Non-Newtonian, Viscoplastic and Thixotropic, Characteristics of Blood." Fluids Seminar at the Division of Applied Mathematics, Brown University, Providence , RI, December 16, 2014.

177. "Nonequilibrium thermodynamics modeling of the flow and deformation of complex materials with internal microstructure" (Willem Prins lecture). Delivered on Thursday, July 9, 2015, at the 7th International Workshop on Nonequilibrium Thermodynamics (IWNET 2015) that took place on July 5-10, 2015 in Hilvarenbeek, The Netherlands.

178. "Macroscopic modeling of microinertia effects in particulate flows." Delivered on Thursday, September 28, 2017, at the Fall 2017 Seminar Series in the Department of Mechanical & Aerospace Engineering at George Washington University, Washington DC.

179. "On the Enhanced Probability of Extreme Events in Viscoelastic Turbulence." Invited oral presentation to the COMPLEX SYSTEMS & DATA SCIENCE SYMPOSIUM, April 09 2018, Trabant Multipurpose Room C, 17 West Main Street, University of Delaware.

180. "Recent applications of NonEquilibrium Thermodynamics in the modeling of complex fluid flows." Delivered on Friday, October 12, 2018, at the Fall Research Seminar Series, Department of Chemical and Biomolecular Engineering, University of Nebraska, Lincoln, Nebraska.

181. "Applications of Conformation Tensor-Based Macroscopic Models to Particulate and Multiphase Systems." Invited oral presentation to the 1st Symposium on Nonequilibrium Multiphase Systems, December 8, 2018, Washington University in Saint Louis, Organizers: Elijah Thimsen (Washington University in Saint Louis) and Christopher J. Hogan (University of Minnesota).

182. "Non-Equilibrium Thermodynamics of Diffusion and Chemical Reactions in Multicomponent Systems." Invited presentation to a conference to celebrate 80th jubilee of Miroslav Grmela, May 18-19, 2019, Czech Technical University, Prague, Czech Republic.

183. "Open Questions on Modeling of Highly Elastic Viscoelastic Flows." Invited presentation to the (virtual, through zoom) Viscoelastic Flow Instabilities Workshop, 01/04/2021 – 01/07/2021, Princeton Center for Theoretical Science.

184. "Novel Applications of NonEquilibrium Thermodynamics: Rate-Based Modeling of Diffusion and Chemical Reactions in Multicomponent Systems" Presented (virtually) in the 16th Joint European Thermodynamics Conference, Prague, June 14–18, 2021.

185. "Continuum Mechanics Modeling of Complex Fluid Systems Following Oldroyd's Seminal 1950 Work" Presented on December 1, 2021, in the JNNFM Complex Fluids Seminar Series (weekly seminars, I. Frigaard and R. Poole organizers) on zoom, virtually.

186. "Recent Progress in the Modelling of Blood Rheology: Bridging of Thermodynamics, Rheology and Microstructure" Presented on March 24, 2023, in the Syracuse University Biomedical & Chemical Engineering Graduate Seminar Series.

187. "Recent Progress to the Modeling and Simulation of Blood Flow" Presented on May 1, 2023, in the Computational Mathematics, Science and Engineering (CMSE} Colloquium at Michigan State University.

188. "A thermodynamically consistent, microscopically based, model of the rheology of aggregating particle suspensions" Presented on September 18, 2023, in the "Energy, Education and Excellence: A Symposium honoring Robert C. Armstrong" MIT Hacker Reactor E38, 7th fl | 292 Main Street, Cambridge, MA.

189. “Recent Progress in the Modeling of the Rheology and Simulation of the Flow of Aggregating Concentrated Suspensions” Presented on June 25, 2024 at the ETH Zurich, Department of Materials, Zurich, Switzerland.

190. “Application of Non-Equilibrium Thermodynamics to Rheology: Introduction and Modern Developments” Seminar, presented on July 10, 2024 at the Summer School / Workshop on Rheology “RheoSamos2024”, Samos, Greece.

191. “Recent developments in the modelling and experiments of blood rheology” Presented on July 18, 2024 at the Department of Chemical Engineering, University of Patras, Patras, Greece.

192. “On the use of the Single Generator Bracket Formalism of Non-Equilibrium Thermodynamics for the development of the equations of Continuum Mechanics” Presented on January 16, 2025 at the Mechanics Seminar Series 2024 – 2025 at the Institut Polytechnique de Paris, Paris, France.

E. INVITED TUTORIAL SERIES AT OTHER INSTITUTIONS/VENUES

1. "Numerical Methods for Engineers." Weekly Seminar Series offered at the Department of Mechanical Engineering, University of Sydney, Australia, July - August 1988.

2. "A Crash course on Numerical Methods for Chemical Engineers." Summer course offered for credit and auditing, Department of Chemical Engineering, Washington University at St. Louis, St. Louis, MI, August 1-15, 1999.

3. "Non-Equilibrium Thermodynamics." A Series of weekly lectures offered at the CEMAME, Department of Mechanical Engineering, Université de Louvain, Louvain-la-Neuve, Belgium, Fall, 1999.

4. "NonLinear Analysis and Bifurcation Theory." A series of seminars offered at the department of Chemical Engineering, University of Patras, January 2001.

5. "NonEquilibrium Thermodynamics of Flowing Systems." 4 lectures offered at the Institute of Mathematics and its Applications, University of Minnesota, Minneapolis, Minnesota, January 2005**:**

a. 1/11/05, Introduction. One mode viscoelasticity.
b. 1/14/05, Coupled transport: Two-fluid model.
c. 1/21/05, Modeling under constraints: Liquid crystals.
d. 1/28/05, Non-homogeneous systems: Surface effects.

6. "NonEquilibrium Thermodynamics of Flowing Systems." 4 lectures (as in (5.) above) offered at the Tutorials on "Multiscale Modeling and Simulation of Complex Fluids," organized and offered at the Center for Scientific Computation and Mathematical Modeling, (CSCAMM), University of Maryland, Bethesda Maryland, April 13-14, 2007.

7. "NonEquilibrium Thermodynamics of Flowing Systems." 6 lectures offered at the Kavli Research Program: Nanoscale Interfacial Phenomena in Complex Fluids, Kavli Institute for Theoretical Physics, Chinese Academy of Sciences (CAS) Beijing, China

a. 5/26/08, 9:30-10:30 Introduction. One mode viscoelasticity.
b. 5/26/08, 10:45-11:45 Coupled transport: Two-fluid model.
c. 5/27/08, 9:30-10:30 Modeling under constraints: Liquid crystals.
d. 5/27/08, 10:45-11:45 Non-homogeneous systems: Surface effects.
e. 5/28/08, 9:30-10:30 Multiscale Modeling: Flow-Induced Crystallization.
f. 5/28/08, 10:45-11:45 NonEquilibrium MC Simulations: FENE-PB: A New Macroscopic Model for Strong Extensional Polymer Flows

8. "NonEquilibrium Thermodynamics Modelling of the Rheology and Transport Phenomena." Short Course in Conjunction with the 10th International Meeting of the Hellenic Society of Rheology Skiathos, Greece, June 29, 2022

a. Introduction. Algebraic (Lagrangian) Examples
b. Eulerian Description: Newtonian Fluids
c. Viscoelastic Fluids: Following Oldroyd's seminal work
d. Modeling under Constraints: Liquid Crystals
e. The Rheology of Dilute Emulsions w/w and w Inertia
f. Multicomponent Coupled Transport Phenomena.

9. "NonEquilibrium Thermodynamics (NET) Modelling of the Rheology and Transport Phenomena in Complex Fluids." Short Course presented as a Webinar on Zoom, U. Patras – Greece, May 03 2023 - July 12 2023

Outline:

0. An Informal Brief History of Equilibrium and Non-Equilibrium Thermodynamics (NET)
1. Introduction to Modern NET. Algebraic (Lagrangian) Examples. Rayleighian.
2. Eulerian Description: Newtonian Fluids
3. Dissipation in Newtonian Fluids Examined in Detail -- Clarifications on Lecture 2
4. Viscoelastic Fluids: Following Oldroyd's Seminal Work
5. Modeling under Constraints: Dilute Emulsions without Inertia
6. Modeling under Constraints: Dilute Emulsions with Inertia; Viscoelastic MicroInertia
7. Thixotropy of Aggregating Concentrated Suspensions and Blood Rheology
8. Multicomponent Coupled Transport Phenomena
9. Reaction and Migration Effects: Micellar Concentrated Suspensions
10. Applications of NET to Energy and Exergy Evaluations

F. CONTRIBUTED PRESENTATIONS IN SCIENTIFIC MEETINGS

1. Beris, A.N., R.C. Armstrong,[2] and R.A. Brown, "Perturbation Theory for Viscoelastic Fluids between Eccentric Rotating Cylinders." The Society of Rheology, 54th Annual Meeting, Evanston, Illinois (October 1982).

2. Beris, A.N., R.C. Armstrong and R.A. Brown, "Perturbation Theory for Viscoelastic Fluids between Eccentric Rotating Cylinders." AIChE 1982 Annual Meeting, Los Angeles, California (November 1982).

3. Beris, A.N., R.C. Armstrong and R.A. Brown, "Comparison of Analytical and Finite Element Solutions for Viscoelastic Fluid Flow." Third Workshop on Numerical Methods in Viscoelastic Fluid Mechanics, Lake Morey Inn, Fairlee, Vermont (June 1983).

4. Beris, A.N., R.C. Armstrong and R.A. Brown, "Finite Element Calculations of Viscoelastic Fluid Flow between Eccentric Rotating Cylinders." The Society of Rheology, 55th Annual Meeting, Knoxville, Tennessee (October 1983).

5. Beris, A.N., R.C. Armstrong and R.A. Brown, "Finite Element Calculations of Viscoelastic Fluid Flow between Eccentric Rotating Cylinders." Vth Inter. Symposium on Finite Element Methods in Flow Problems, Austin, Texas (January 1984).

6. Beris, A.N., R.C. Armstrong and R.A. Brown, "Finite Element Calculations of Viscoelastic Fluid Flow in a Journal Bearing: Large Eccentricities." IXth Inter. Congress on Rheology, Acapulco, Mexico (October 1984).

7. Beris, A.N., J.A. Tsamopoulos, R.C. Armstrong and R.A. Brown, "Analysis of a Falling Sphere in a Bingham Plastic." IXth Inter. Congress on Rheology, Acapulco, Mexico (October 1984).

8. Beris, A.N., J.A. Tsamopoulos, R.C. Armstrong and R.A. Brown, "Analysis of a Falling Sphere in a Bingham Plastic." AIChE 1984 Annual Meeting, San Francisco, California (November 1984).

9. Beris, A.N., J.A. Tsamopoulos, R.C. Armstrong and R.A. Brown, "Analysis of a Falling Sphere in a Bingham Plastic." Annual Meeting of Fluid Dynamics Division of American Physical Society, Providence, Rhodes Island (November 1984).

10. Beris, A.N., R.C. Armstrong and R.A. Brown, "Finite Element Calculations of Viscoelastic Fluid Flow in a Journal Bearing: Large Eccentricities." Fourth

[2]Here, and in the following, the name of the speaker is underlined.

Workshop on Numerical Methods in Non-Newtonian Flow, Spa, Belgium (June 1985).

11. Beris, A.N., R.C. King, R.C. Armstrong and R.A. Brown, "On the Role of Hyperbolicity and Change-of-Type in the Calculation of Complex Viscoelastic Flows." Fourth Workshop on Numerical Methods in Non-Newtonian Flow, Spa, Belgium (June 1985).

12. Beris, A.N., R.C. Armstrong and R.A. Brown, "Spectral/Finite Element Calculations of the Flow of a Maxwell Fluid between Eccentric Rotating Cylinders." Annual Meeting of Fluid Dynamics Division of American Physical Society, Tucson, Arizona (November 1985).

13. Beris, A.N., R.C. Armstrong and R.A. Brown, "Spectral/Finite Element Calculations of Viscoelastic Flow between Eccentric Rotating Cylinders." Xth U.S. National Congress of Applied Mechanics, the University of Texas at Austin, Austin, Texas (June 1986).

14. King, R.C., A.N. Beris, R.C. Armstrong and R.A. Brown, "Petrov-Galerkin Methods for Calculation of Viscoelastic Flows." Xth U.S. National Congress of Applied Mechanics, the University of Texas at Austin, Austin, Texas (June 1986).

15. Beris, A.N., R.C. Armstrong and R.A. Brown, "Spectral/Finite Element Calculations of the Flow of a Convected Maxwell Fluid between Eccentric Rotating Cylinders." The Society of Rheology, 58th Annual Meeting, Tulsa, Oklahoma (October 1986).

16. Beris, A.N., R.C. Armstrong and R.A. Brown, "Spectral/Finite Element Calculations of the Flow of an Oldroyd-B Fluid between Eccentric Rotating Cylinders." AIChE 1986 Annual Meeting, Miami Beach, Florida (November 1986).

17. Pilitsis, S. and A.N. Beris, "A New Mixed Spectral/Finite Differences Numerical Method for Two-Dimensional Steady Viscoelastic Flows." Fifth Workshop on Numerical Methods in Non-Newtonian Flow, Lake Arrowhead, California (June 1987).

18. Liu, B. and A.N. Beris, "Towards the Development of Stable Numerical Methods for Time-Dependent Viscoelastic Flows." Fifth Workshop on Numerical Methods in Non-Newtonian Flow, Lake Arrowhead, California (June 1987).

19. Beris, A.N., J. Marr, R.C. Armstrong and R.A. Brown, "Effects of Retardation and Slip on the Flow of a Viscoelastic Fluid between Eccentric Rotating Cylinders." Fifth Workshop on Numerical Methods in Non-Newtonian Flow, Lake Arrowhead, California (June 1987).

20. Pilitsis, S. and A.N. Beris, "Modelling the Flow of Polymeric Fluids through Fiber Mats." 1987 Joint Symposium on Composite Materials, Science and Engineering, University of Delaware, Newark, Delaware (September 1987).

21. Edwards, B.J. and A.N. Beris, "Flow Induced Orientation in Polymeric Liquid Crystalline Systems." The Society of Rheology, 59th Annual Meeting, Atlanta, Georgia (October 1987).

22. Liu, B. and A.N. Beris, "Time-Dependent Fiber Spinning Equations: Mathematical Behavior and Stability of Different Numerical Approximations." AIChE 1987 Annual Meeting, New York, New York (November 1987).

23. Liu, B., S. Pilitsis and A.N. Beris, "Spectral Methods Applied to Viscoelastic Flow Calculations." The Xth International Congress of Rheology, Sydney, Australia August 14-19, (1988).

24. Edwards, B.J., S. Pilitsis and A.N. Beris, "Calculations of Steady-State Flows of Polymeric Liquid Crystals." The Xth International Congress of Rheology, Sydney, Australia August 14-19, (1988).

25. Doraiswamy, D., X. Chu, S. Danforth, A.B. Metzner and A.N. Beris, "The Rheology of Ceramic Suspensions." The Xth International Congress of Rheology, Sydney, Australia August 14-19, (1988).

26. Pilitsis, S and A.N. Beris, "Steady-State Viscoelastic Flow in an Undulating Tube." AIChE 1988 Annual Meeting, Washington, D.C. (November 1988).

27. Beris, A.N., B. Liu and S. Pilitsis, "Numerical Instabilities Introduced by Spectral Discretization of Nonlinear Differential Equations." AIChE 1988 Annual Meeting, Washington, D.C. (November 1988).

28. Edwards, B.J. and A.N. Beris, "Transient Flow of Spatially Inhomogeneous Polymeric Liquid Crystals." The Society of Rheology 60th Annual Meeting, Gainsville, Florida (February 1989).

29. Beris, A.N. and B. Liu, "Upwind Finite-Element Techniques for Systems of Non-Linear Hyperbolic Equations (With Emphasis on Viscoelastic Flow Equations)." The 7th International Conference on Finite Element Methods in Flow Problems, Alabama (April 1989).

30. C.Y. Chan, A.N. Beris and S.G. Advani, "Use of Boundary Element Method to Simulate Hydrodynamic Interactions Around Ellipsoids in 3-D Flow Fields." The Polymer Processing Society Summer Meeting, Amherst, Massachusetts (August 1989).

31. D. Doraiswamy, I.L. Tsao, S.C. Danforth, A.N. Beris and A.B. Metzner, "The Rheology of Ceramic Suspensions." The 61st Annual Meeting of the Society of Rheology, Montreal, Canada (October 1989).

32. Edwards, B.J., A.N. Beris and M. Grmela, "Modelling of Polymeric Liquid Crystalline Flow Behavior." The 61st Annual Meeting of the Society of Rheology, Montreal, Canada (October 1989).

33. Beris, A.N. and B.J. Edwards, "Poisson Bracket Formulation of the Flow Behavior of Non-Newtonian Materials with Microstructure." Paper presented in the Poster Session: Fundamental Research in Fluid Mechanics, at the 1989 Annual Meeting of the American Institute of Chemical Engineers, November 5-10, 1989, San Francisco Hilton, San Francisco, California.

34. B. Liu and A.N. Beris, "Simulation of the Taylor-Couette Flow of a Viscoelastic Fluid." Paper presented in the Poster Session: Fundamental Research in Fluid Mechanics, at the 1989 Annual Meeting of the American Institute of Chemical Engineers, November 5-10, 1989, San Francisco Hilton, San Francisco, California.

35. Beris, A.N. and B.J.Edwards, "Non-Homogeneous Polymeric Liquid Crystalline Flows: Modelling and Calculations." Paper presented at the 1989 Annual Meeting of the American Institute of Chemical Engineers, November 5-10, 1989, San Francisco Hilton, San Francisco, California.

36. Beris, A.N., H.C. Foley and J.B. Gustafson, "Hydrogen and Deuterium Scrambling in a Non-Thermal Equilibrium Plasma Reactor." Paper presented at the 1989 Annual Meeting of the American Institute of Chemical Engineers, November 5-10, 1989, San Francisco Hilton, San Francisco, California.

37. Doraiswamy, D., A.N. Mujumdar, I.L. Tsao, A.N. Beris, S.C. Danforth and A.B. Metzner, "The Cox-Merz Rule Extended: A Rheological Model for Concentrated Suspensions." Paper presented at the 62nd Annual Meeting of the Society of Rheology, October 21-25, 1990, Sweeney Center, Santa Fe, New Mexico.

38. Souvaliotis A., S. Pilitsis and A.N. Beris, "Shear Thinning Viscoelastic Calculations in a Periodically Constricted Geometry." Paper presented at the 62nd Annual Meeting of the Society of Rheology, October 21-25, 1990, Sweeney Center, Santa Fe, New Mexico.

39. Chan, C.Y., A.N. Beris and S.G. Advani, "Investigation of 3D Hydrodynamic Interactions Around Ellipsoidal Particles Using High Order Boundary-Element Techniques." Paper presented at the 1990 Annual Meeting of AIChE, November 11-16, 1990, The Palmer House, Chicago, Illinois.

40. Avgousti, M. and A.N. Beris, "Calculations of Viscoelastic Taylor-Couette Flow Instabilities." Paper presented at the 1990 Annual Meeting of AIChE, November 11-16, 1990, The Palmer House, Chicago, Illinois.

41. Gustafson, J.F., C.M. Lastoskie, S. Sengupta, A.N. Beris and H.C. Foley, "Microscopic Phenomena in the Plasma Etching of Crystalline Silicon with Hydrogen." Paper presented at the 1990 Annual Meeting of AIChE, November 11-16, 1990, The Palmer House, Chicago, Illinois.

42. Mavrantzas, V.G. and A.N. Beris, "Theoretical Study of the Effects of Solid/Fluid Interface on the Rheology of Polymer Solutions." Paper presented at the 1991 March Meeting of the American Physical Society, March 18-22, 1991, Cincinnati, Ohio.

43. Edwards, B.J. and A.N. Beris, "The Dynamics of a Thermotropic Liquid Crystal." Paper presented at the 1991 March Meeting of the American Physical Society, March 18-22, 1991, Cincinnati, Ohio.

44. Stark, S. and A.N. Beris, "LU Decomposition in a Distributed Memory Environment." Poster presented at the fifth SIAM conference on Parallel Processing for Scientific Computing, March 25-27, 1991, Westin Galleria and Westin Oaks Hotels, Houston, Texas.

45. Mavrantzas V.G. and A.N. Beris, "Theoretical Study of the Effects of Solid/Fluid Interface on the Rheology of Polymer Solutions." paper presented at a Symposium on "Interfacial Phenomena in Viscoelastic Flows," organized by the Fluid Mechanics Committee of the Applied Mechanics Division of ASME, June 16-19, 1991, The Ohio State University, Columbus, Ohio.

46. Leap, W.S., D. Liguras and A.N. Beris, "Cellular Automata Simulation of Steady-State Diffusion-Controlled Reaction Rates in Dispersions of Static Sinks," Poster presented in the second International Conference on Industrial and Applied Mathematics (ICIAM 91), July 8-12, 1991, Sheraton Washington Hotel, Washington, D.C..

47. Mavrantzas, V.G. and A.N. Beris, "Theoretical Study of the Effects of Polymer-Wall Interaction on the Rheology of Dilute Polymer Solutions." Paper presented at the 63rd Annual Meeting of the Society of Rheology, October 20-24, 1991, Holiday Inn-Genesee Plaza, Rochester, New York.

48. Souvaliotis A. and A.N. Beris, "Application of Domain Decomposition Pseudospectral Methods to Viscoelastic Flow Simulations." Paper presented at the 63rd Annual Meeting of the Society of Rheology, October 20-24, 1991, Holiday Inn-Genesee Plaza, Rochester, New York.

49. Avgousti, M. and A.N. Beris, "Non-linear Dynamic Behavior of Viscoelastic Models." Paper presented at the 63rd Annual Meeting of the Society of Rheology, October 20-24, 1991, Holiday Inn-Genesee Plaza, Rochester, New York.

50. Pillai, V., A.N. Beris and P. Dhurjati, "Use of Local Criteria in Optimization of Batch Processes." Paper presented at the 1991 Annual Meeting of AIChE, November 17-22, 1991, Westin Bonaventure, Los Angeles, California.

51. Souvaliotis, A., C. Chan and A.N. Beris, "Theoretical Prediction of Permeabilities in Structured Porous Media with Application to Resin Transfer Molding Operations", Paper presented at the 1991 Annual Meeting of AIChE, November 17-22, 1991, Westin Bonaventure, Los Angeles, California.

52. Souvaliotis, A., and A.N. Beris, "Viscoelastic Flow Calculations with a Domain Decomposition Spectral Method." Paper presented at the 1991 Annual Meeting of AIChE, November 17-22, 1991, Westin Bonaventure, Los Angeles, California.

53. Avgousti, M. and A.N. Beris, "Viscoelastic Taylor-Couette Flow: Bifurcation Analysis in the Presence of Symmetries." Paper presented at the 1991 Annual Meeting of AIChE, November 17-22, 1991, Westin Bonaventure, Los Angeles, California.

54. Beris, A.N., M. Avgousti and A. Souvaliotis, "Spectral Methods Applied to Viscoelastic Flow Simulations." Paper presented to the Seventh International Workshop on Numerical Methods in Non-Newtonian Flow, February 2-5, 1992, Indian River Plantation Resort, Florida.

55. Mavrantzas, V.G. and A.N. Beris, "Modelling and Simulation of the Dilute Polymer Solution Flow Behavior Next to Surfaces and Interfaces." Paper presented at the Symposium on Modelling and Computer Simulation, at the San Francisco ACS Meeting on April 5-10, 1992.

56. Chan, C.Y., A.N. Beris and S.G. Advani, "Simulation of 3-D Composite Material Processing Using Quadratic Boundary Element Techniques." Paper presented at the Composites CAD conference in University of Delaware, April, 1992.

57. Chan, C.Y., A.N. Beris and S.G. Advani, "Analysis of Viscous Flows in Complicated Geometries Using a Quadratic Galerkin Boundary Element Method." Paper presented at the 1992 Annual Meeting of AIChE, November 1-6, 1992, Miami Beach, Florida.

58. Mavrantzas, V.G. and A.N. Beris, "Interfacial Phenomena in the Rheology of Dilute Polymer Solutions." Paper presented at the 1992 Annual Meeting of AIChE, November 1-6, 1992, Miami Beach, Florida.

59. Souvaliotis A., and A.N. Beris, "Viscoelastic Flows Through a Periodic Array of Cylinders: Steady State and Stability Analysis." Paper presented at the 1992 Annual Meeting of AIChE, November 1-6, 1992, Miami Beach, Florida.

60. Richards, J.R., A.M. Lenhoff and A.N. Beris, "Fluid Mechanics of Laminar Liquid-Liquid Jets at High Reynolds Numbers." Paper presented at the 1992 Annual Meeting of AIChE, November 1-6, 1992, Miami Beach, Florida.

61. Avgousti, M. and A.N. Beris, "Analysis of the 3-D Viscoelastic Taylor-Couette Flow Instabilities." Paper presented at the 1992 Annual Meeting of AIChE, November 1-6, 1992, Miami Beach, Florida.

62. Gustafson, J.B., A.N. Beris and H.C. Foley, "Reaction and Diffusion Phenomena in Non-Thermal Equilibrium Plasmas." Paper presented at the 1992 Annual Meeting of AI ChE, November 1-6, 1992, Miami Beach, Florida.

63. Pillai, V., A.N. Beris, P. Dhjuriti, J. Gillispie, ISA Meeting/93, Chicago, Illinois (September 19-24, 1993).

64. Kordon, A.K., A.N. Beris, P.S. Dhurjati, B. Rossing and W. Johnson, "A Knowledge Base System Architecture for a Rapid Ceramic Preforming Process," SAMPE, (October, 1993) , Philadelphia, Pennsylvania (October, 1993).

65. Sureshkumar, R., A.N. Beris and M. Avgousti, "Non-linear Analysis of 3-D Instabilities in Viscoelastic Taylor-Couette Flow." Paper presented at the 65rd Annual Meeting of the Society of Rheology, October 17-21, 1993, Parker House, Boston, Massachusetts.

66. Beris, A.N. and V.G. Mavrantzas, "Non-local Effects in Polymer Rheology: Polymer-Surface Interactions." Paper presented at the 65rd Annual Meeting of the Society of Rheology, October 17-21, 1993, Parker House, Boston, Massachusetts.

67. Mavrantzas, V.G.and A.N. Beris, "Stress-Induced Polymer Migration Phenomena in Simple Viscometric Flows." Paper presented at the 65rd Annual Meeting of the Society of Rheology, October 17-21, 1993, Parker House, Boston, Massachusetts.

68. Beris, A.N. and R. Sureshkumar, "Non-linear Analysis of 3-D Instabilities in Viscoelastic Taylor-Couette Flow." Paper presented at the 8th International Workshop on Numerical Methods in Non-Newtonian Flows, October 21-24, 1993, Cape Cod, Massachusetts.

69. Mavrantzas, V.G. and A.N. Beris, "Stress-Induced Polymer Migration Phenomena in Simple Viscometric Flows." Paper presented at the 1993 Annual Meeting of AIChE, November 7-12, 1993, St. Louis, Missouri.

70. Mavrantzas, V.G. and A.N. Beris, "Rheology of Dilute Polymer Soultions in the Adjacency of a Solid Surface." Paper presented at the 1993 Annual Meeting of AIChE, November 7-12, 1993, St. Louis, Missouri.

71. Richards, J.R., A.N. Beris and A.M. Lenhoff, "Dynamic Breakup of Laminar Liquid-Liquid Jets." Paper presented at the 1993 Annual Meeting of AIChE, November 7-12, 1993, St. Louis, Missouri.

72. Sureshkumar, R. and A.N. Beris, "Effect of Flow Elasticity on High Reynolds Number Poiseuille Flow." Paper presented at the IMACS '94 international conference, July 10-15, 1994, Atlanta, Georgia.

73. Sureshkumar, R. and A.N. Beris, "Numerical Analysis of the eigenspectra of Viscoelastic Poiseuille Flow." Paper presented at the 66th Annual Meeting of the Society of Rheology, October 2-6, 1994, Hotel Atop the Bellevue, Philadelphia, Pennsylvania.

74. V.G. Mavrantzas and A.N. Beris, "Surface Effects on the Structure and Rheology of Polymer Solutions." Paper presented at the 66th Annual Meeting of the Society of Rheology, October 2-6, 1994, Hotel Atop the Bellevue, Philadelphia, Pennsylvania.

75. J.R. Richards, A.N. Beris, and A.M. Lenhoff, "Drop formation in liquid-liquid systems before and after jetting." Paper presented at the 1994 Annual Meeting of Fluid Dynamics Division of American Physical Society, Atlanta, Georgia (November 20-23, 1994)

76. Beris, A.N. and R. Sureshkumar, "Time-Dependent Viscoelastic Flow Simulations." Paper presented at the 9th International Workshop on Numerical Methods in Non-Newtonian Flows, April 19-22, 1995, Llyndir Hall, Rossett, Wales, U.K.

77. A.N. Beris, J.R. Richards and A.M. Lenhoff, "A Volume of Fluid Method Applied to Liquid-Liquid Jet Breakup and Drop Dynamics." Paper presented in an AMS-IMS-SIAM Joint Summer Conference on "Advances of Multi-Fluid Flows and Interfacial Instabilities" organized by Y.Y. Renardy at the University of Washington, Seattle, Washington (July 23-27, 1995).

78. Sureshkumar, R. and A.N. Beris, "Three-dimensional, time-dependent simulations of viscoelastic channel Poiseuille flow." Paper presented at the 67th Annual Meeting of the Society of Rheology, October 8-12, 1995, Hyatt Regency Hotel, Sacramento, California.

79. Sureshkumar, R. and A.N. Beris, "On uniformly valid approximations to the integrals resulting from Gaussian closure in differential viscoelastic models."

Paper presented at the 67th Annual Meeting of the Society of Rheology, October 8-12, 1995, Hyatt Regency Hotel, Sacramento, California.

80. Sureshkumar, R., A.N. Beris and R. Handler, "Simulation of turbulent channel flow of model viscoelastic fluids." Paper presented at the 1995 Annual Meeting of AIChE, November 12-17, 1995, Miami Beach, Florida.

81. Sureshkumar, R., A.N. Beris, Y. Renardy and M. Renardy, "Bifurcation analysis of a viscoelastic Taylor-Couette flow." Paper presented at the 1995 Annual Meeting of AIChE, November 12-17, 1995, Miami Beach, Florida.

82. Sureshkumar, R. and A.N. Beris, "Parallelization of a spectral method for turbulent flow calculations." Paper presented at the 1995 Annual Meeting of AIChE, November 12-17, 1995, Miami Beach, Florida.

83. Chae, K-S and A.N. Beris, A Pseudospectral Method for Simulation of Free-Surface Flows in the Presence of Surfactants, Paper presented at the APS DFD meeting, November 19-22, 1995, Irvine, California

84. Dimitropoulos C., A.N. Beris and J. Richards, Flow Interaction Effects on the Surface Tension in Free-Surface Flows in the Presence of Surfactants, Paper presented at the APS DFD meeting, November 19-22, 1995, Irvine, California

85. Sureshkumar, R. and A.N. Beris, "On the Flow Simulations of Dilute Polymer Solutions with Non-Linear Kinetic Theory-Based Constitutive Models." Poster presented at the XIIth International Congress on Rheology, Quebec City (Quebec) Canada, August 18-23, 1996.

86. Edwards, B.J. and A.N. Beris, "Thermodynamics of Flowing Systems: What Have we Learned?" Paper presented at the XIIth International Congress on Rheology, Quebec City (Quebec) Canada, August 18-23, 1996.

87. V.G. Mavrantzas, S. Wilson and A.N. Beris, "Stress-Induced Polymer Migration: Modelling and Simulation in Simple Viscometric Flows." Paper presented at the XIIth International Congress on Rheology, Quebec City (Quebec) Canada, August 18-23, 1996.

88. Sureshkumar, R., A.N. Beris and R.A. Handler, "Numerical Simulations of Three-Dimensional and Time-Dependent Viscoelastic Flows with Applications to Turbulent Drag Reduction." Paper presented at the XIIth International Congress on Rheology, Quebec City (Quebec) Canada, August 18-23, 1996.

89. Sureshkumar, R., A.N. Beris and R.A. Handler, "Direct Numerical Simulations of Polymer-Induced Drag Reduction in Turbulent Channel Flow." Paper presented at the 1996 Annual Meeting of AIChE, November 10-15, 1996, The Palmer House Hotel, Chicago, Illinois.

90. Michaud, D., A.N. Beris and P. Dhurjati, "Kinetic Behavior of a Vinyl Ester Resin within a Thick-Sectioned Composite." Paper presented at the 1996 Annual Meeting of AIChE, November 10-15, 1996, The Palmer House Hotel, Chicago, Illinois.

91. Dimitropoulos C. and A.N. Beris, "A Pseudospectral Method for Simulation of Free Surface Flows in the Presence of Surfactants." Paper presented at the APS DFD meeting, November 24-26, 1996, Syracuse, New York.

92. Sureshkumar, R., A.N. Beris and R.A. Handler, "Investigation of Polymer-Induced Drag Reduction through Direct Numerical Simulations." Paper presented at the APS DFD meeting, November 24-26, 1996, Syracuse, New York.

93. Kulkarni, Jaydeep A. and Antony N. Beris, "A Structural Model for the Necking Phenomenon in High-Speed Fiber Spinning." Paper presented at the 68th Annual meeting SOR, Galveston, Texas, February 16-20,1997.

94. Dimitropoulos C.D. and Beris A.N., "Efficient Pseudospectral Flow Simulations in Moderately Complex Flow Geometries". Paper presented at the Xth International Workshop on Numerical Methods for Viscoelastic flows, May 29-June 1, 1997, Ocean City, Maryland.

95. Sureshkumar R. and Beris A.N., "Direct Numerical Simulation of Polymer-Induced Drag Reduction". Paper presented at the Xth International Workshop on Numerical Methods for Viscoelastic flows, May 29-June 1, 1997, Ocean City, Maryland.

96. Sureshkumar R., Dimitropoulos C.D. and Beris A.N., "Effect of the Rheology on Polymer-Induced Drag Reduction". Paper presented at the 69th Annual Meeting of the Society of Rheology, October 19-23,1997, Columbus, Ohio.

97. Dimitropoulos C.D. and Beris A.N., "Parallel Implementation of a Pseudospectral Direct Numerical Simulation Method for Flow in Moderately Complex Geometries". Paper presented at the AIChE National Meeting, November 16-21, 1997, Los Angeles, California.

98. Sureshkumar, R., A.N. Beris and R.A. Handler, "Budgets of Reynolds Stress, Turbulent Kinetic Energy and Vorticity Production in the Turbulent Channel Flow of a Model Polymer Solution". Paper presented at the AIChE National Meeting, November 16-21, 1997, Los Angeles, California.

99. Dimitropoulos C.D. and Beris A.N., "An Efficient and Robust Pseudospectral Numerical Simulation of Flows within Moderately Complex Flow Geometries". Paper presented at the APS-DFD Meeting, November 23-25, 1997, San Francisco, California.

100. Dimitropoulos C.D. and Beris A.N., "Direct Numerical Simulation of Viscoelastic Turbulent Channel Flow: Effect of Rheology on Drag Reduction." Paper presented at the 2nd Meeting of the Hellenic Society of Rheology, August 31-September 2, 1998, Heraklion, Crete, Greece.

101. Dimitropoulos C.D., Sureshkumar R. and Beris A.N., "Investigation of the Influence of Rheological Parameters on Drag Reduction, Reynolds Stress and Vorticity Budgets through Direct Numerical Simulations." Paper presented at the 70th Annual Meeting of the Society of Rheology, October 4-8, 1998, Monterey, California.

102. Dimitropoulos C.D., Beris A.N., Sureshkumar R. and Handler R.A., "Investigation of the Turbulent Structure in Channel Flow of a Polymer Solution Exhibiting Drag Reduction." Paper presented at the AIChE National Meeting, November 15-20, 1998, Miami, Florida.

103. Kulkarni, Jaydeep A. and Antony N. Beris, "Lattice Simulations of the Amorphous Phase in Semi-Crystalline Polymers." Paper presented at the AIChE National Meeting, November 15-20, 1998, Miami, Florida.

104. Dimitropoulos C.D., Beris A.N. and Straka M.A., "Parallelization of Spectral Algorithms for Fluid Flow on the SGI/CRAY Origin2000." Paper presented at the AIChE National Meeting, November 15-20, 1998, Miami, Florida.

105. Dimitropoulos C.D., Beris A.N., Sureshkumar R. and Handler R.A., "Newest Results from the Investigation of Polymer-Induced Drag Reduction through Direct Numerical Simulation." Paper presented at the APS-DFD Meeting, November 22-24, 1998, Philadelphia, Pennsylvania.

106. Kulkarni, Jaydeep A.* and Antony N. Beris, "Lattice Simulations for Semi-Crystalline Polymers." Paper presented at the “Tiger-Hen” Princeton-U. Of Delaware Rheology meeting, February 6, 1999, Princeton, New Jersey.

107. Dimitropoulos C.D.*, Beris A.N., Sureshkumar R. and Handler R.A., "Investigation of the effects of rheology on the Turbulent Structure in Channel Flow of a Polymer Solution Exhibiting Drag Reduction."at the “Tiger-Hen” Princeton-U. Of Delaware Rheology meeting, February 6, 1999, Princeton, New Jersey.

108. Kulkarni, Jaydeep A.* and Antony N. Beris, "Simulation of the Amorphous Phase in Semi-Crystalline Polymers using 2-D Lattice Models." Paper presented at the Centennial Meeting of the American Physical Society, Atlanta, Georgia (March 22-26 1999).

109. Dimitropoulos C.D. and Beris A.N.*, "Direct Numerical Simulation of Polymer-Induced Drag Reduction inTurbulent Channel Flow." Paper presented at the 1999 SIAM Annual Meeting, Atlanta, Georgia (May 12-15, 1999).

110. Dimitropoulos C.D. and Beris A.N.*, “Spectral Calculations of Time-Dependent Viscoelastic Flows." Paper presented at the XIth International Workshop on Numerical Methods for Viscoelastic Flows, that was held August 25-28, 1999 in the Hotel & Castle Vaalsbroek in Vaals, The Netherlands.

111. Dimitropoulos C.D. and Beris A.N.* and R. Sureshkumar, “Direct Numerical Simulation of Polymer-Induced Drag Reduction in Turbulent Channel Flow.” Paper presented at the 11th European Drag Reduction Working Meeting, that was held September 15-17, 1999 in the Czech Technical University in Prague, Chech Republic.

112. Kulkarni, Jaydeep A.* and Antony N. Beris, “Calculation of Absolute Thermodynamic Quantities and Chain Statistics for the Amorphous Region of Semi-Crystalline Polymers Using Fully-Populated Lattice Models.” Paper presented at the 1999 National Annual AiChE meeting, that was held October 31, 1999 - November 5, 1999 at Dallas, Texas.

113. Michaud, D.*, Beris A.N. and Dhurjati P.S. “System Analysis and Processing of a Thick-Sectioned Vinyl Ester Composite System.” Paper presented at the 1999 National Annual AiChE meeting, that was held October 31, 1999 - November 5, 1999 at Dallas, Texas.

114. Michaud, D.*, Beris A.N. and Dhurjati P.S. “Robust Design Optimization of a Batch Composite Process Using Evolutionary Strategies.” Poster presented at the 1999 National Annual AiChE meeting, that was held October 31, 1999 - November 5, 1999 at Dallas, Texas.

115. A.N. Beris, A. Leygue* and R. Keunings, “Thermodynamical considerations on the new constitutive equations for entangled melts proposed by Marrucci.” Paper presented at the TMR mid-term review meeting, Technical University of Berlin, Berlin, March 16-17, 2000.

116. Xavier E. Gallez*, Antony N. Beris, Roland Keunings, and Vincent Legat, “Dissipative effects in complex flows of dilute polymer solutions far from equilibrium: modelling and numerical simulations.” Paper presented at the "5`eme Congr`es National de Me'canique The'orique & Applique'e, (Belgian society of mechanics annual meeting) Louvain-la-Neuve, May 2000.

117. A. Leygue*, A.N. Beris, and R. Keunings, “Using non-equilibrium thermodynamics to improve the modelling of linear polymer melts, with convective constraint release and force balance on entanglements.” Paper presented in EURORHEO 2000-1 “Nonequilibrium Thermodynamics and

Complex Fluids" Workshop and Summer School, August 14-18 2000, Oxford, UK.

118. A.N. Beris, A. Leygue* and R. Keunings, "Thermodynamical considerations on constitutive equations for entangled polymer melts." Paper presented at the XIIIth International Congress on Rheology, Cambridge, UK, August 20-25, 2000.

119. Xavier E. Gallez*, Antony N. Beris, Roland Keunings, and Vincent Legat, "Dissipative effects in complex flows of dilute polymer solutions far from equilibrium: modelling and numerical simulations." ." Paper presented at the XIIIth International Congress on Rheology, Cambridge, UK, August 20-25, 2000.

120. A.N. Beris*, C.D. Dimitropoulos, R. Sureshkumar and R.D. Handler, "Direct numerical simulations of polymer-induced drag reduction in viscoelastic turbulent channel flows." Paper presented at the XIIIth International Congress on Rheology, Cambridge, UK, August 20-25, 2000.

121. A.N. Beris*, C.D. Dimitropoulos, D. Jankovic, G. Winckelmans and R. Keunings, "Large Eddy Simulations of viscoelastic turbulent channel flows." Paper presented at the First SIAM Conference on Computational Science and Engineering, Sep 21-23, 2000, Wyndham City Center Hotel, Washington DC.

122. A.N. Beris* and C.D. Dimitropoulos, "Efficient Pseudospectral Simulations of Free-Surface Flows with Surfactants." Paper presented at the 2000 Annual Meeting of AIChE, Westin Bonaventure, Los Angeles, CA, November 13-17, 2000.

123. A.N. Beris and J.A. Kulkarni, "Lattice Model Simulations for Semicrystalline Dense Polymers." Paper presented at the 2000 Annual Meeting of AIChE, Westin Bonaventure, Los Angeles, CA, November 13-17, 2000.

124. A.N. Beris* and C.D. Dimitropoulos, "DNS of Viscoelastic Turbulent Channel Flow: Effect of Increasing Elasticity." Paper presented at the 2000 annual APS/Division of Fluid Dynamics meeting, Washington, DC, November 19-21, 2000.

125. A. Leygue*, A.N. Beris and R. Keunings, "Constitutive Equations for Linear Polymer Melts Inspired by Reptation Theory and Nonequilibrium Thermodynamics." Paper presented at the 72nd Annual Meeting of the Society of Rheology, Hilton Head Island, South Carolina, February 11-15, 2001.

126. M.V. Apostolakis*, V.G. Mavrantzas and A.N. Beris, "Stress-Induced Migration Effects on the Taylor-Couette Flow of a Dilute Polymer Solution." Paper presented at the 3rd International Meeting of the Hellenic Society of Rheology, Rio Hotel, Patras, Greece, June 10-14, 2001.

127. D. Jankovic*, A.N. Beris, R. Keunings and G.S. Winckelmans, "Low Reynolds Number Turbulent Channel Flow." Paper presented at the 3rd International Meeting of the Hellenic Society of Rheology, Rio Hotel, Patras, Greece, June 10-14, 2001.

128. A.N. Beris*, M.V. Apostolakis and V.G. Mavrantzas, "Stress-Induced Migration Effects on the Taylor-Couette Flow of a Dilute Polymer Solution." Paper presented at the 12th International Workshop on Numerical Methods for Non-Newtonian Flows, Seascape Resort, Monterey Bay, California, July 15-17, 2001.

129. A. Leygue*, A.N. Beris and R. Keunings, "A Constitutive Equation for Entangled Linear Polymers Inspired by Reptation Theory and Consistent with Nonequilibrium Thermodynamics." Paper presented at the 12th International Workshop on Numerical Methods for Non-Newtonian Flows, Seascape Resort, Monterey Bay, California, July 15-17, 2001.

130. P. Wapperom and A.N. Beris, "Pseudospectral Simulations of 3D Viscoelastic Flow in Undulating Channel Geometries." Paper presented at the 73rd Annual Meeting of the Society of Rheology, Hyatt Regency Bethesda, Bethesda, Maryland, October 22, 2001.

131. V.G. Mavrantzas, M.V. Apostolakis and A.N. Beris*, "Stress-Induced Polymer Migration Effects in the Taylor-Couette Flow: Numerical Simulation of the Stress-Concentration Coupling." Paper presented at the 73rd Annual Meeting of the Society of Rheology, Hyatt Regency Bethesda, Bethesda, Maryland, October 22, 2001.

132. P. Wapperom* and A.N. Beris, "Pseudospectral Simulation of Newtonian Flow in Undulating Channel Geometries." Paper presented at the 2001 Annual Meeting of AIChE, Reno Hilton, Reno, Nevada, November 4-9, 2001.

133. J. Mukherjee* and A.N. Beris, "A Three Segment Mean Field Model of Chain Conformations in the Interlamellar Amophous Region of Semicrystalline Polymers." Paper presented at the 2001 Annual Meeting of AIChE, Reno Hilton, Reno, Nevada, November 4-9, 2001.

134. P. Wapperom*, A.N. Beris and M.A. Straka, "A New Transpose Split Method of Three-Dimensional FFTs: Performance on an Origin 2000 and an Alphaserver Cluster." Paper presented at the 2001 Annual Meeting of AIChE, Reno Hilton, Reno, Nevada, November 4-9, 2001.

135. D.J. Michaud*, P.S. Dhurjati and A.N. Beris, "Model-Based Global Optimization Using Robust Evolutionary Strategies." Paper presented at the 2001 Annual Meeting of AIChE, Reno Hilton, Reno, Nevada, November 4-9, 2001.

136. P. Wapperom* and A.N. Beris, "Analysis of Stability Behavior of Viscoelastic Fluids in Three-Dimensional Undulating Channel Geometries." Paper presented at the 54th Annual Meeting of the Division of Fluid Dynamics of the American Physical Society, San Diego Marriott Hotel and Marina, San Diego, California, November 18-20, 2001.

137. K.D. Housiadas and A.N. Beris*, "The Influence of Reynolds Number on Polymer-Induced Drag Reduction." Paper presented at the 54th Annual Meeting of the Division of Fluid Dynamics of the American Physical Society, San Diego Marriott Hotel and Marina, San Diego, California, November 18-20, 2001.

138. K.D. Housiadas* and A.N. Beris, "DNS calculations of polymer-induced drag reduction in turbulent channel flow." Paper presented at the 2002 American Physical Society Annual Meeting, Indianapolis, Indiana, March 2002.

139. J. Mukherjee* and A.N. Beris, "Lattice based modeling of the amorphous phase of lamellar semicrystalline polymers: Quantitative Estimation of thermodynamic variables. Paper presented at the 2002 American Physical Society Annual Meeting, Indianapolis, Indiana, March 2002.

140. K.D. Housiadas and A.N. Beris*, "Effects of the variation of the rheological parameters in polymer-induced drag reduction." Paper presented at the Society of Rheology, 73rd Annual Meeting, Minneapolis, Minnesota, October 2002.

141. K.D. Housiadas and A.N. Beris*, "Elasticity and Inertia Effects in Polymer-Induced Drag Reduction." Paper presented at the 2002 AICHE 33rd Annual Meeting, Indianapolis, Indiana, November 2002.

142. J. Mukherjee (speaker), A.N. Beris, "Lattice-based modeling of the amorphous phase of semicrystalline polymers under flow deformation." Paper presented at the 2002 AIChE Annual Meeting, Indianapolis, Indiana, November 2002.

143. S.D. Wilson* and A.N. Beris, "3-Dimensional Monte Carlo Lattice Modeling of the Amorphous/Crystalline Interface Region in Lamellar Semi-Crystalline Polymers." Paper presented at the 2002 AIChE Annual Meeting, Indianapolis, Indiana, November 2002.

144. A.N Beris, J. Mukherjee, K.D Housiadas, S.D. Wilson and R.A. Oswald*, "Implementation and Experience with a Linux Beowulf Cluster." Poster presented at the 2002 AIChE Annual Meeting, Indianapolis, Indiana, November 2002.

145. K.D. Housiadas and A.N. Beris*, "Polymer-Induced Drag Reduction: Budgets for Reynolds Stresses, Enstrophy and Higher Order Statistics up to Friction Reynolds Number 590." Paper presented at the American Physical

Society/Division of Fluid Dynamics, 55th Annual Meeting, Dallas, Texas, November 2002.

146. K.D. Housiadas, A.N Beris and S.D. Wilson, "Visualization of Vortical Structures in DNS or Viscoelastic Turbulent Channel Flow," Division of Fluid Dynamics/American Physical Society Meeting, Gallery of Fluid Motion video entry, Dallas TX, November 2002.

147. K.D. Housiadas* and A.N. Beris, "High drag reduction in viscoelastic turbulent channel flow." Paper presented at the 2003 Annual Meeting of the American Physical Society, Austin, Dallas, Texas, March 2003.

148. J. Mukherjee*, S.D. Wilson and A.N. Beris, "Lattice-based modeling of the interlamellar amorphous phase in semicrystalline polymers under flow deformation: Effect of flow on local thermodynamics." Paper presented at the 2003 Annual meeting of the American Physical Society, Austin, Texas, March 2003.

149. K.D. Housiadas and A.N. Beris*, "Direct numerical simulations of rheology effects on polymer induced drag reduction." Paper presented in the Tiger-Hen rheology day, University of Delaware, May 17 2003.

150. K.D. Housiadas and A.N. Beris*, "Direct numerical simulations of polymer induced drag reduction in turbulent channel flows." Paper presented at the XIII International Workshop on Numerical Methods for non-Newtonian Flows", Lausanne, Switzerland, 4-7 June 2003.

151. A.N. Beris* and K.D. Housiadas, "Direct Numerical Simulations of turbulent viscoelastic channel flows: Towards a better understanding of polymer-induced drag reduction." Paper presented at the 7th U.S. National Congress on Computational Mechanics, Albuquerque, New Mexico, July 27-31, 2003.

152. A.N. Beris*, "Thermodynamically consistent multiscale modeling of flow induced crystallization." Paper presented at the 3rd International Workshop on Non-equilibrium Thermodynamics and Complex Fluids, Princeton, New Jersey, August 14-17, 2003.

153. S.D. Wilson*, J. Mukherjee and A.N. Beris, "3-Dimensional lattice modeling of the amorphous interlamellar region in dense semi-crystalline polymers." Paper presented at the 3rd International Workshop on Non-equilibrium Thermodynamics and Complex Fluids, Princeton, New Jersey, August 14-17, 2003.

154. J. Mukherjee*, S.D. Wilson and A.N. Beris, "Mean field lattice models to investigate the flow-induced structure and thermodynamics in semicrystalline polymers.* Poster presented at the 3rd International Workshop on Non-

equilibrium Thermodynamics and Complex Fluids, Princeton, New Jersey, August 14-17, 2003.

155. K.D. Housiadas and A.N. Beris*, "The effect of rheological properties in viscoelastic turbulent channel flow." Paper presented at the 75th Annual Meeting of the Society of Rheology, Pittsburgh, Pennsylvania, October 12-16, 2003.

156. K.D. Housiadas and A.N. Beris*, "Moderate to high drag reduction in viscoelastic turbulent channel flow." Paper presented at the 2003 AIChE Annual Meeting, San Francisco, California, November 16-21, 2003.

157. J. Mukherjee*, S.D. Wilson and A.N. Beris, "3-D lattice models to study the effect of flow deformation on the evolution of semicrystalline morphology in dense semicrystalline polymers." Paper presented at the 2003 AIChE Annual Meeting, San Francisco, California, November 16-21, 2003.

158. R.A. Oswald*, S.D. Wilson, J. Mukherjee and A.N. Beris, "A parallel tempering scheme for lattice based Monte Carlo simulations of dense semicrystalline polymers." Paper presented at the 2003 AIChE Annual Meeting, San Francisco, California, November 16-21, 2003.

159. S.D. Wilson*, J. Mukherjee and A.N. Beris, "Modeling of the structure of the amorphous interlamellar region in semi-crystalline polymers". Paper presented at the 2003 AIChE Annual Meeting, San Francisco, California, November 16-21, 2003.

160. J. Mukherjee* and A.N. Beris, "Multiscale Modeling of Flow-induced Microstructural Changes in Polymer Melts." Paper presented to the 2004 Tiger-Hen (U. of Princeton/University of Delaware) Rheology meeting, Princeton, New Jersey, May 1, 2004.

161. K.D. Housiadas* and A.N. Beris, "An efficient spectral technique for direct numerical simulations of viscoelastic turbulent channel flow." Paper presented at the 3rd International Meeting of the Hellenic Society of Rheology, Athens, Greece, June 27-29, 2004.

162. K.D. Housiadas* and A.N. Beris, "The influence of rheology in viscoelastic turbulent channel flow." Paper presented at the XIVth International Congress on Rheology, 22-27 August 2004, Seoul, South Korea.

163. A.N. Beris*, J. Mukherjee and S.D. Wilson, "Modeling Flow- induced Microstructural Changes in the Amorphous Phase of Semicrystalline Polymers." Paper presented at the XIVth International Congress on Rheology, 22-27 August 2004, Seoul, South Korea..

164. J. Mukherjee*, S.D. Wilson and A.N. Beris, "Multi-scale Modeling of Flow-induced Morphologies in Polymer Processes." Paper [162d] presented at the 2004 AIChE Annual Meeting, Austin, Texas, November 7-12 2004.

165. K.D. Housiadas and A.N. Beris*, "DNS/LES of non-homogeneous viscoelastic turbulent channel flow." Paper [219e] presented at the 2004 AIChE Annual Meeting, Austin, Texas, November 7-12 2004.

166. A.N. Beris and J. Mukherjee, "Non-Equilibrium Thermodynamics of Dense Linear Polymers under Flow." Paper [342d] presented at the 2004 AIChE Annual Meeting, Austin, Texas, November 7-12 2004.

167. K.D. Housiadas* and A.N. Beris, "An efficient fully implicit spectral technique for DNS/LES of viscoelastic turbulent channel flow." Paper [432d] presented at the 2004 AIChE Annual Meeting, Austin, Texas, November 7-12 2004.

168. L. Wang* and A.N. Beris, "Computationally efficient, high accuracy solver for nonseparable Helmholtz equations." Paper [435g] presented at the 2004 AIChE Annual Meeting, Austin, Texas, November 7-12 2004.

169. K.D. Housiadas* and A.N. Beris, "Numerical simulations of non-homogeneous viscoelastic turbulent channel flow." Paper [FD.005] presented at the 57th Annual Meeting of the Division of Fluid Dynamics – (American Physical Society), Seattle, Washington, November 21-23 2004.

170. L. Wang* and A.N. Beris, "A novel efficient pseudospectral method for the DNS of turbulent flow in a wavy channel." Paper [ME.005] presented at the 57th Annual Meeting of the Division of Fluid Dynamics – (American Physical Society), Seattle, Washington, November 21-23 2004.

171. A.N. Beris*, K.D. Housiadas and R.A. Handler, "Direct Numerical Simulations of Viscoelastic Turbulent Channel Flows." Paper presented to the 105th AMS Meeting, Special Session on Frontiers on Complex Fluid Flows, University of Delaware, Newark, Delaware, April 2-3, 2005.

172. K.D. Housiadas* and A.N. Beris, "Direct Numerical Simulations of viscoelastic turbulent channel flows." Paper presented at the 14th International Workshop on Numerical Methods in Non-Newtonian Flows, Santa Fe, New Mexico, June 12-15, 2005.

173. A.N. Beris* and K.D. Housiadas, "Rheology Effects on the Direct Numerical Simulatiuon of Viscoelastic Turbulent Channel Flows," Paper presented at the 14th International Workshop on Numerical Methods in Non-Newtonian Flows, Santa Fe, New Mexico, June 12-15, 2005.

174. A.N. Beris* and J. Mukherjee, "Modeling Strong Extensional Flows of Linear Polymers." Paper presented at the 77th Annual Meeting of the Society of Rheology, Vancouver, Canada, October 16-20, 2005.

175. A.N. Beris* and K.D. Housiadas, "Direct Numerical Simulations of Viscoelastic Turbulent Channel Flows at High Drag Reduction." Paper presented at the 2005 AIChE Annual Meeting, Cincinnati, Ohio, October 30-November 5, 2005.

176. K.D. Housiadas and A.N. Beris*, "An Exponential Mapping for the Conformation Tensor for the Simulation of the Turbulent Channel Flow of Viscoelastic Fluids." Paper presented at the 2005 AIChE Annual Meeting, Cincinnati, Ohio, October 30-November 5, 2005.

177. L. Wang* and A.N. Beris, "A Novel Efficient Pseudospectral Method for the Dns of Turbulent Flow in a Wavy Channel." Paper presented at the 2005 AIChE Annual Meeting, Cincinnati, Ohio, October 30-November 5, 2005.

178. L. Wang* and A.N. Beris, "DNS of Turbulent Flow in a Wavy Channel with a Novel Efficient Pseudospectral Method." Paper presented at the 58th Annual Meeting of the Division of Fluid Dynamics – (American Physical Society), Chicago, Illinois, November 20-22 2005.

179. K.D. Housiadas, L. Wang and A.N. Beris*, "An Exponential Mapping for the Conformation Tensor for the Simulation of the Turbulent Channel Flow of Viscoelastic Fluids." Paper presented at the 58th Annual Meeting of the Division of Fluid Dynamics – (American Physical Society), Chicago, Illinois, November 20-22 2005.

180. G. Oxberry*, R.A. Handler, K.D. Housiadas and A.N. Beris, "Karhunen-Loève Analysis of Coherent Structures in Viscoelastic Turbulent Channel Flows." Paper presented at the 58th Annual Meeting of the Division of Fluid Dynamics – (American Physical Society), Chicago, Illinois, November 20-22 2005.

181. A.N. Beris*, K.D. Housiadas and L. Wang, "Direct Numerical Simulations of Viscoelastic Turbulent Channel Flow at High Drag Reduction." Paper N33-05 presented to the 2006 Annual APS March Meeting (Baltimore, MD), March 13-17, 2006.

182. L. Wang*, K..D. Housiadas and A.N. Beris, "Direct Numerical Simulations of Turbulent Flow in a Wavy Channel." Paper R34-013 presented to the 2006 Annual APS March Meeting (Baltimore, MD), March 13-17, 2006.

183. V.G. Mavrantzas, A.N. Beris*, Frans A.M. Leermakers and Gerald Fleer, "Continuum formulation of the Scheutjens-Fleer lattice statistical theory for homopolymer adsorption from solution." Paper presented at the session:

Simulations in Colloidal Complex Fluids, The 231st ACS National Meeting, Atlanta, GA, March 26-30, 2006.

184. A.N. Beris* and D. Vlassopoulos, "A Thermodynamically Consistent Model for the Thixotropic Rheological Behavior of Concentrated Colloidal Star Polymer Solutions." Paper presented at the International Workshop of Nonequilibrium Thermodynamics, Capsis-Sofitel, Rhodes, Greece, September 3-7, 2006

185. K.D. Housiadas and A.N. Beris*, "A study on the rheology effects in viscoelastic turbulent channel flows based on DNS." Paper FM1 presented at: The Society of Rheology 78th Annual Meeting , October 8-12, 2006 - Portland, Maine.

186. G. Samanta*, G. Oxberry, R.A. Handler, A.N. Beris and K.D. Housiadas, "Dynamic K-L analysis of coherent structures based on DNS of turbulent viscoelastic flows," Paper FM3 presented at: The Society of Rheology 78th Annual Meeting , October 8-12, 2006 - Portland, Maine.

187. A.N. Beris* and D. Vlassopoulos, "A thermodynamically consistent model for the thixotropic rheological behavior of concentrated colloidal star polymer solutions," Paper SC21 presented at: The Society of Rheology 78th Annual Meeting , October 8-12, 2006 - Portland, Maine.

188. G. Samanta* and A.N. Beris, "K-L analysis of coherent structures in turbulent viscoelastic channel flow." Paper presented at the 10th Tiger-Hen-Hawk Rheology Symposium, Bowen Hall, Princeton University, New Jersey, January 27, 2007.

189. G. Samanta, A.N. Beris, G. Oxberry, R.A. Handler and K.D. Housiadas*, "Dynamic K-L analysis of coherent strucures based on DNS of turbulent Newtonian and viscoelastic flows." Paper (A56) presented to the XVth International Workshop for Numerical Methods for Non-Newtonian Flows, Rhodes, Greece, June 6-10, 2007.

190. K.D. Housiadas*, L. Wang and A.N. Beris, "A log-exponential mapping for the preservation of positive definiteness in the numerical integration of viscoelastic constitutive equations." Paper (A55) presented to the XVth International Workshop for Numerical Methods for Non-Newtonian Flows, Rhodes, Greece, June 6-10, 2007.

191. G. Samanta, A.N. Beris*, G. Oxberry, R.A. Handler and K.D. Housiadas, "Direct Numerical Simulation of Turbulent Viscoelastic Flows: Dynamic Karhunen-Loeve Analysis." Paper presented to the 6th International Congress on Industrial and Applied Mathematics (ICIAM' 07), ETH, Zurich, Switzerland, July 16-20, 2007.

192. G. Samanta*, A.N. Beris, K.D. Housiadas and R.A. Handler, "Multi-Scale Analysis of Coherent Structures in Turbulent Dynamics." Paper presented at the "Numerical Analysis – Linear Systems, Numerical PDE and Clustering" session of the 2007 SIAM Conference on Mathematics for Industry, Hyatt Regency Philadelphia at Penn's Landing, Philadelphia, PA, October 9-11, 2007.

193. G. Samanta*, A.N. Beris, R.A. Handler and K.D. Housiadas, "Dynamic K-L Analysis of Turbulent Channel flows." Paper scheduled to be presented at the 2007 AIChE National Meeting, November 4-9 2007, Salt Lake City, Utah.

194. A.N. Beris* and K.D. Housiadas, "A Generalized Constitutive Model for Dilute and Semi-Dilute Flexible Polymer Solutions." Paper scheduled to be presented at the 2007 AIChE National Meeting, November 4-9 2007, Salt Lake City, Utah.

195. G. Samanta*, A.N. Beris, R.A. Handler and K.D. Housiadas, "Dynamic K-L analysis of coherent structures based on DNS of turbulent Newtonian and viscoelastic flows." Paper scheduled to be presented at the 60th Annual Meeting of the Division of Fluid Dynamics – (American Physical Society), Salt Lake City, Utah, November 18-20 2007.

196. David A. Johnson*, Justin Spaeth, Dr. William Rose, Dr. Ulhas Naik, and Dr. Antony Beris,"Contributions from the modeling of arterial circulation to the simulation of wall shear rate in blood flow within large arterial vessels," July 12, 2008, Penn State University. Presented at the 13th International Congress of the Biorheology and 6th International Conference on Hemorheology.

197. G. Samanta*, A.N. Beris, R.A. Handler and K.D. Housiadas, 2008, "Dynamic K-L analysis of the coherent structures in turbulent viscoelastic channel flows," Paper presented at the XV International Congress on Rheology, ICR2008, Monterey, California, August 3-8, 2008.

198. G. Samanta*, A.N. Beris, K.D. Housiadas and R.A. Handler, 2008, "Systematic Velocity Data Reduction and its Effect on Polymer Conformation Statistics in Viscoelastic Turbulent Channel Flows," Paper presented at the Centennial Annual Meeting of the American Institute of Chemical Engineers, Philadelphia Convention Center, Philadelphia, PA. November 17, 2008.

199. David A. Johnson*, Dr. Ulhas Naik, and Dr. Antony Beris, "Contributions from the modeling of arterial circulation to the simulation of wall shear rate in blood flow within large arterial vessels," Paper presented at the Centennial Annual Meeting of the American Institute of Chemical Engineers, Philadelphia Convention Center, Philadelphia, PA. November 18, 2008.

200. G. Samanta*, A. N. Beris, R. A. Handler, and K. D. Housiadas, "Methods to approach velocity data reduction and their effects on conformation statistics in viscoelastic turbulent channel flows", APS March Meeting, Pittsburg, 2009.

201. David A. Johnson*, Dr. Ulhas Naik, and Dr. Antony Beris, "Modeling of arterial circulation to the simulation of wall shear rate in blood flow within large arterial vessels," APS March Meeting, Pittsburg, 2009.

202. G. Samanta*, A. N. Beris, R. A. Handler, and K. D. Housiadas, "Efficient Data Reduction Applied to Viscoelastic Turbulent Channel Flows using Direct Numerical Simulation Data Generated on TeraGrid." Presented at the TERAGRID 2009 conference, Wednesday, June 24, 2009, Washington, DC.

203. G. Samanta*, K. D. Housiadas, R. A. Handler, and A. N. Beris, "The Effect of Viscoelasticity on the Probability Density Functions in Turbulent Channel Flow," Paper presented at the session Non-Newtonian Fluid Mechanics and Stability: The Society of Rheology 81st Annual Meeting , October 18-22, 2009 - Madison, Wisconsin.

204. G. Samanta*, A. N. Beris, K. D. Housiadas, and R. A. Handler, "Effect of Karhunen-Loeve Optimization Criterion on the Reconstructed Conformation Field in Viscoelastic Turbulent Channel flow," Paper presented at the session Non-Newtonian Fluid Mechanics and Stability: The Society of Rheology 81st Annual Meeting , October 18-22, 2009 - Madison, Wisconsin.

205. David Johnson, Ulhas P. Naik and Antony N. Beris, "Effective techniques for the simulating blood flow and cardiovascular disease development." Poster presented at the 2010 Delaware Health Sciences Alliance Research Conference, Christiana Hospital, Newark, Delaware, May 4, 2010.

206. A. N. Beris* and J. Mukherjee, "Multiscale Modeling of Flow-Induced Semi-crystalline Morphologies in Polymer Fiber Spinning," Paper presented at the session CP9 Multiscale Modeling and Computation: SIAM Conference on Mathematical Aspects of Materials Science (MS10), May 23-26, 2010, at the Doubletree Hotel Philadelphia, Philadelphia, Pennsylvania.

207. A.N. Beris*, G. Samanta, K.D. Housiadas and R.A. Handler, " Polymer-Modified Turbulence: Large and Small Scale Analysis." Paper presented to the XVIth International Workshop on Numerical Methods for Non-Newtonian Flows, Northampton, Massachusetts,, June 13-16, 2010.

208. Antony N. Beris*, Gaurab Samanta, Kostas D. Housiadas, Alexander J. Young and Robert A. Handler, "Analysis of Velocity PDFs and Higher Order Statistics in Polymer-Modified Channel Flow Turbulence." Paper presented at the Session on Turbulent Flows of at the 2010 Annual Meeting of the American Institute of Chemical Engineers, Salt Palace Convention Center, Salt Lake City, Utah. November 7-12, 2010.

209. William C. Rose, Jonathan W. Edwards, David A. Johnson, Michael E. Stillabower, David G. Edwards, Antony N. Beris, Ulhas P. Naik, "Identifying and estimating patterns of vascular properties using a one-dimensional model of systemic arteries & noninvasive measurements." Poster presented at the Inaugural Symposium of the Delaware Cardiovascular Research Center (DCRC), at the Delaware Biotechnology Institute (DBI), Newark, Delaware, Monday, November 22, 2010.

210. Antony N. Beris*, David A. Johnson and Ulhas P. Naik, "Wall elasticity effects to the outlet flow conditions in blood flow simulations through asymmetric arterial bifurcations." Seminar presented at the Hellenic Society of Rheology conference HSR 11, that took place in Athens, Greece, June 28-29, 2011.

211. Antony N. Beris*, Gaurab Samanta, Kostas D. Housiadas, Alexander J. Young and Robert A. Handler, "Analysis of Velocity PDFs and Higher Order Statis-tics in Polymer-Modified Channel Flow Turbulence." Seminar presented at the Hellenic Society of Rheology conference HSR 11, that took place in Athens, Greece, June 28-29, 2011.

212. A.N. Beris*, D.A. Johnson and U.P. Naik, "Outlet Flow Conditions in Blood Flow Simulations through Asymmetric Arterial Bifurcations." Paper presented at the 11th U.S. National Congress on Computational Mechanics, Hilton, Minneapolis, Minnesota, July 24-28, 2011.

213. G. Samanta*, K.D. Housiadas, R.A. Handler, and A.N. Beris, "An Analysis of Probability Density Functions and Their Tails in Viscoelastic Turbulent Channel Flow." Paper presented in Session 5: Uncertainty quantification in computational science and engineering, at the 11th U.S. National Congress on Computational Mechanics, Hilton, Minneapolis, Minnesota, July 24-28, 2011.

214. J.P. Bishop*, C.H. Laufer, P.J. Brigandi, N.J. Wagner, and A.N. Beris, "A parametric study of two-layer polymer coextrusion." Paper presented at the Computational Rheology session of the 83rd Annual Meeting of the Society of Rheology, Cleveland, Ohio, October 9-13, 2011.

215. A.N. Beris* and A.J. Giacomin, "Panta rhei." Poster presented at the 83rd Annual Meeting of the Society of Rheology, Cleveland, Ohio, October 9-13, 2011.

216. A.N. Beris*, and K.D. Housiadas, "On the Skin Friction Coefficient in Viscoelastic Turbulent Wall Bounded Flows." Paper 01J10 presented at the Session on Turbulent Flows of the 2011 Annual Meeting of the American Institute of Chemical Engineers, Minneapolis Convention Center, Minneapolis, Minnesota, October 16-20, 2011.

217. S. Edie and A.N. Beris*, "Application of SVD to Enhance PGD in Mildly Non-Linear 2-D PDE Problems." Paper 10D00 presented at the Session on Advances in Computational Methods and Numerical Analysis of the 2011 Annual Meeting of the American Institute of Chemical Engineers, Minneapolis Convention Center, Minneapolis, Minnesota, October 16-20, 2011.

218. Stephen Edie and Antony N. Beris*, "Application of SVD to Enhance PGD in Mildly Non-Linear 2-D PDE Problems." Paper presented at the 2012 International Workshop on Numerical Methods for Non-Newtonian Fluids, IWNMNNF 2012, Blois Castle, March 25-28, 2012, Session Numerical Methods (1), March 26, 2012: 9:40 – 10:00 AM.

219. N. Germann*, L.P. Cook, A.N. Beris, N.J. Wagner, "Non-Equilibrium Thermodynamic Modeling Of Flow-Induced Structural Changes In Worm-Like Micellar Solution." Paper presented at the 86th Colloid & Surface Science Symposium, Baltimore, MD, June 10-13, 2012.

220. N. Germann*, L.P. Cook, A.N. Beris, "Non-Equilibrium Thermodynamic Modeling Of Flow-Induced Structural Changes In Worm-Like Micellar Solution." Paper presented in the session Associative Polymers, Surfactants and Liquid Crystals, at the XVIth International Congress on Rheology, ICR2012, Lisbon, Portugal, August 5-10, 2012, presented on Tuesday, August 7, 2012.

221. A. Apostolidis and A.N. Beris*, "The Effect of the Non-Newtonian Blood Flow Rheology on the Flow through the Arterial Network." Poster 142am presented at the Fluid Mechanics Poster Session of the 2012 Annual Meeting of the American Institute of Chemical Engineers, David L. Lawrence Convention Center, Pittsburgh, Pennsylvania, October 28 – November 2, 2012, presented on Monday, October 29, 2012: 15:15 – 17:00 PM.

222. A.N. Beris*, and K.D. Housiadas, "Modeling Dilute and Semi-Dilute Flexible Polymer Solutions in Extensionally-Dominated Flows." Paper 413i presented at the Session on Complex Fluids of the 2012 Annual Meeting of the American Institute of Chemical Engineers, David L. Lawrence Convention Center, Pittsburgh, Pennsylvania, October 28 – November 2, 2012, presented on Wednesday, October 31, 2012: 10:45 – 11:00 AM.

223. N. Germann*, L. P. Cook, A. N. Beris, N. J. Wagner, "Nonequilibrium thermodynamic modeling of the shear banding phenomenon of concentrated wormlike micellar solutions." Paper SA14 presented in the Session "Self-Assembling, Associating and Gel-Like Systems" on February 12, 2013 5:15 pm at the 84th Annual Meeting of the Society of Rheology, Pasadena, CA, February 10-14, 2013.

224. N. Germann*, L.P. Cook, A.N. Beris, and N.J. Wagner, "Modeling and Simulation of Shear Banding Phenomena in Concentrated Solutions of Wormlike

Micelles." Paper MS12 presented at the Session on Complex Fluids: Modeling and Simulation in the SIAM Conference on Mathematical Aspects of Material Science, June 9-12, 2013 - Philadelphia, PA, presented on Sunday June 9, 2013: 3:30 – 3:55 PM.

225. N. Germann*, L.P. Cook, and A.N. Beris, "Thermodynamic Modeling and Numerical Simulation of the Flow of Wormlike Micellar Solutions." Paper presented in the Minisymposium MS35: AWM - Workshop: Research Talks by Recent Ph.D.s in the 2013 SIAM Annual Meeting, July 8-12, 2013, Town and Country Resort and Convention Center – San Diego, California, presented on Tuesday, July 9, 2013: 10:30 – 10:55 AM.

226. A.N. Beris*, M. Benjes, and A.J. Apostolidis, "Blood Flow Model of the Human Arterial Network: Improvements and Extension to the Circle of Willis." Paper presented at the Minisymposium 2.7: Direct and Inverse Methods for Cardiovascular and Pulmonary Biomechanics in the 12th US National Congress of Computational Mechanics, USNCCM-12, July 22-25, 2013 - Raleigh, North Carolina, presented on Wednesday July 24, 2013: 2:40 – 3:00 PM.

227. Matthew J. Armstrong*, Antony N. Beris, Norman J. Wagner and Min Jung Kim, "Modeling the thixotropic behavior of concentrated suspensions in large amplitude oscillatory shear (LAOS) experiments." Paper SC17 presented in the Session "Suspensions and Colloids" on October 15, 2013 10:50 am at the 85th Annual Meeting of the Society of Rheology, Montreal, Canada, October 13-17, 2013.

228. N. Germann*, L.P. Cook, A.N. Beris, N.J. Wagner, "Transient dynamics of a thermodynamically consistent model for wormlike micellar solutions." Paper GS8 presented in the Session "Gels and Self-assembled Systems" on October 16, 2013 10:50 am at the 85th Annual Meeting of the Society of Rheology, Montreal, Canada, October 13-17, 2013.

229. Alex Apostolidis*, Matthew J. Armstrong and Antony N. Beris, "A structural parameter thixotropic model for the transient shear flow of blood." Paper Number BM11 presented in the Session "Rheology and Processing of Bio-based Materials" on October 16, 2013, 1:55pm, at the 85th Annual Meeting of the Society of Rheology, Montreal, Canada, October 13-17, 2013.

230. Matthew J. Armstrong*, Antony N. Beris and Norman J. Wagner, "Using Paralllel Tempering to Evaluate Optimum Parameter Estimates in Nonlinear Dynamic Simulation Models." Paper 612a presented in the Session "Dynamic Simulation and Optimization" on November 7, 2013 8:30 am at the 2013 AIChE Annual Meeting, November 3-8, 2013, Hilton San Francisco Union Square, San Francisco, California.

231. Alex Apostolidis*, Antony N. Beris, and, David A. Johnson, “Hybrid 1D/3D Blood Flow Simulations of the Arterial Human Network.” Paper 666b presented in the Session “Computational Approaches in Biomedical Engineering” on November 7, 2013 12:50 pm at the 2013 AIChE Annual Meeting, November 3-8, 2013, Hilton San Francisco Union Square, San Francisco, California.

232. P.M. Mwasame*, A.N. Beris and N.J Wagner, “Development of a Microstructure Based Model for Thixotropy in Colloidal Dispersions Based on Population Balances.” Paper presented at the ACS 2014 Colloids & Science Symposium, Rheology and Dynamics Session, Philadelphia, PA, June 2014.

233. Antony N. Beris*, Alex Apostolidis and Matthew J. Armstrong, “Modeling of the blood rheology in transient shear flows.” Paper presented at the 7th International Conference of the Hellenic Society of Rheology, Heraklion, Crete, July 7-10, 2014.

234. Antony N. Beris*, Norman J. Wagner, Matthew J. Armstrong, Paul Mwasame, “Modelling of the thixotropic behavior of concentrated suspensions.” Paper presented at the 7th International Conference of the Hellenic Society of Rheology, Heraklion, Crete, July 7-10, 2014.

235. Matthew J. Armstrong*, Antony N. Beris and Norman J. Wagner, “Modeling thixotropic colloidal dispersions in Large Amplitude Oscillatory Shear (LAOS) experiments.” Paper Number SC29 presented in the Session “Suspensions and Colloids” on October 7, 2014 (Tuesday) 5:15pm, at the 86th Annual Meeting of the Society of Rheology, October 5-9, 2014 - Philadelphia, Pennsylvania.

236. Natalie Germann, Antony N. Beris* and L. Pamela Cook, “Study of diffusion effects in shear banding micellar solutions.” Paper SF20 presented in the Session “Self-assembly and Flow-induced Systems/Gels” on October 8, 2014 (Wednesday) 11:40am, at the 86th Annual Meeting of the Society of Rheology, October 5-9, 2014 - Philadelphia, Pennsylvania.

237. Alex Apostolidis*, Matthew J. Armstrong and Antony N. Beris, “Modeling of human blood rheology in transient shear flows.” Paper Number BB39 presented in the Session “Biomaterials and Biological Systems” on October 8, 2014 (Wednesday) 2:45pm, at the 86th Annual Meeting of the Society of Rheology, October 5-9, 2014 - Philadelphia, Pennsylvania.

238. Alex Apostolidis*, Antony N. Beris and Matthew J. Armstrong, “Modeling the Time-Dependent Shear Flow of Human Blood.” Paper 110h presented in the Session 110: BioFluid Dynamics on Monday, November 17, 2014: 2:15 PM at the 2014 AIChE Annual Meeting, November 16-21, 2014, Atlanta Marriott Marquis and Hilton Atlanta, Atlanta, Georgia.

239. Paul M. Mwasame*, Antony N. Beris and Norman J. Wagner, "A Self-Consistent, Renormalization-Based Semi-Empirical Modeling of Polydispersity Effects on the Viscosity of Non-Brownian Hard Sphere Suspensions." Poster 209p presented in the Poster Session: Fluid Mechanics (Area 1J) on Monday, November 17, 2014: 3:15 PM at the 2014 AIChE Annual Meeting, November 16-21, 2014, Atlanta Marriott Marquis and Hilton Atlanta, Atlanta, Georgia.

240. Paul M. Mwasame*, Antony N. Beris and Norman J. Wagner, "Development of a Microstructure Based Model for Thixotropy in Colloidal Dispersions Based on Population Balances." Poster 418bm presented in the 418 Poster Session: General Topics on Chemical Engineering on Tuesday, November 18, 2014: 6:00 PM at the 2014 AIChE Annual Meeting, November 16-21, 2014, Atlanta Marriott Marquis and Hilton Atlanta, Atlanta, Georgia.

241. Matthew J. Armstrong*, Antony N. Beris and Norman J. Wagner, "Modeling the Transient Shear Flow of Soft Colloidal Systems Using a Scalar Structural Parameter Thixotropic Model." Paper 519c presented in the Session: 519 Particulate and Multiphase Flows II: Structure and Assembly on Wednesday, November 19, 2014: 12:30 PM at the 2014 AIChE Annual Meeting, November 16-21, 2014, Atlanta Marriott Marquis and Hilton Atlanta, Atlanta, Georgia.

242. Paul M. Mwasame*, Matthew J. Armstrong, Simon A. Rogers, Alex J. Apostolidis, Jun Dong Park, Norman J. Wagner, Antony N. Beris, "Solution topologies of thermodynamically consistent models for concentrated suspensions out of equilibrium." Paper presented at the 13th Tiger-Hen-Hawk rheology symposium, on May 9, 2015, at the Department of Chemical Engineering in Lehigh University, Bethlehem, PA.

243. Alex J. Apostolidis, John Fillenwarth, Adam Moyer, Antony N. Beris*, "Investigation of Viscoplastic and Thixotropic Characteristics of Blood Rheology to Arterial Flow." Paper presented on Tuesday, June 30, 2015, at an International Rheology Symposium in honor of Prof. Roger I. Tanner, June 29 - July 2, 2015, Vathi, Samos, Greece.

244. P. M. Mwasame*, N. J. Wagner, A. N. Beris, "A population balance based, coarse grained, evolution equation for microstructure in thixotropic colloidal dispersions." Paper presented on Wednesday, July 8, 2015, at the 7th International Workshop on Nonequilibrium Thermodynamics (IWNET 2015), Hilvarenbeek, The Netherlands (July 5-10, 2015).

245. N. Germann, A. N. Beris*, P. L. Cook, "Modeling of coupled flow-diffusion effects in shear banding, rodlike, micellar solutions." Paper presented on Thursday, July 9, 2015, at the 7th International Workshop on Nonequilibrium Thermodynamics (IWNET 2015), Hilvarenbeek, The Netherlands (July 5-10, 2015).

246. Alex J. Apostolidis, John Fillenwarth, Adam Moyer, Antony N. Beris*, "Viscoplastic and Thixotropic Effects of Blood Rheology to Arterial Flow." Paper presented at the session 111: Direct and Inverse Methods for Cardiovascular and Pulmonary Biomechanics, on Monday July 27 2015, at the 13th US National Congress on Computational Mechanics, San Diego, CA, July 26-30 2015.

247. Alex J. Apostolidis and Antony N. Beris*, "Macroscopic Rheology of Human Blood: Effects of Cholesterol and Triglycerides." Paper BM16 presented on Tuesday October 13 2015, at the Society of Rheology 87th Annual Meeting, October 11-15, 2015 - Baltimore, Maryland.

248. Paul M. Mwasame*, Norman J. Wagner, Antony N. Beris, "A population balance based, coarse grained, evolution equation for microstructure in thixotropic colloidal dispersions." Paper SC28 presented on Tuesday October 13 2015, at the Society of Rheology 87th Annual Meeting, October 11-15, 2015 - Baltimore, Maryland.

249. Paul M. Mwasame*, Antony N. Beris and Norman J. Wagner, "A multiscale tensorial model for the rheology of aggregating thixotropic suspensions with yield stress." Paper F37 presented on Tuesday March 15 2016, at the March 2016 APS Meeting, March 14-18, 2016 – Baltimore, Maryland.

250. Paul Mwasame*, Antony N. Beris, and Norman Wagner, "A Multiscale Model for the Thixotropic Rheology of Colloidal Suspensions." Paper presented at the MS30 Session on Modeling, Analysis and Simulation of Bio/Complex Fluids - Part III of III in the SIAM Conference on Mathematical Aspects of Material Science, May 8-12, 2016 - Philadelphia, PA, presented on Sunday May 8, 2016: 6:30 – 6:55 PM.

251. Antony N. Beris*, Paul Mwasame, and Norman Wagner, "A Non-Affine, Conformation Tensor-Based, Viscoelastic Fluid Model." Poster presented at the PP1 Poster Session in the SIAM Conference on Mathematical Aspects of Material Science, May 8-12, 2016 - Philadelphia, PA, presented on Monday May 9, 2016: 8:00 – 10:00 PM.

252. Paul M. Mwasame, Antony N. Beris* and Norman J. Wagner, "A Multiscale Tensorial Model for the Rheology of Aggregating Thixotropic Colloidal Suspensions with Yield Stress." Paper 5612 presented in the session Non-Newtonian Fluid Mechanics, at the XVIIth International Congress on Rheology, ICR2016, Kyoto, Japan, August 8-12, 2016, presented on Wednesday, August 10, 2016: 5:00 – 5:20 PM.

253. Jeffrey S. Horner, Antony N. Beris* and Norman J. Wagner, "Modeling of viscoplastic steady state shear flow blood rheology in different species." Poster P167 (corresponding to abstract 5717) presented in the poster session of the

XVIIth International Congress on Rheology, ICR2016, Kyoto, Japan, August 8-12, 2016, presented on Thursday, August 11, 2016: 9:20 – 10:20 AM.

254. Matthew J. Armstrong*, Antony N. Beris and Norman J. Wagner, "Modeling the Transient Shear Flow of Soft Colloidal Systems Using a Scalar Structural Parameter Thixotropic Model." Paper 519c presented in the Session: 519 Particulate and Multiphase Flows II: Structure and Assembly on Wednesday, November 19, 2014: 12:30 PM at the 2014 AIChE Annual Meeting, November 16-21, 2014, Atlanta Marriott Marquis and Hilton Atlanta, Atlanta, Georgia.

255. Paul M. Mwasame*, Norman J. Wagner and Antony N. Beris, "Modeling the Viscosity of Polydisperse Suspensions." Poster 471882 presented on Monday, November 14, 2016 in the 230 Poster Session: Fluid Mechanics (Area 1J), at the 2016 AIChE Annual Meeting, November 13-18, 2016, San Francisco, California.

256. Paul M. Mwasame*, Norman J. Wagner and Antony N. Beris, "A New Conformation Tensor Based Macroscopic Model for Emulsions at Finite Reynolds Numbers." Paper 471998 presented on Tuesday, November 15, 2016: 1:45 PM in the session 372 Particulate and Multiphase Flows: Soft and Granular Systems, at the 2016 AIChE Annual Meeting, November 13-18, 2016, San Francisco, California.

257. Paul M. Mwasame*, Antony N. Beris and Norman J. Wagner, "A Population Balance Based Model to Describe the Rheology of Thixotropic Suspensions with a Yield Stress." Poster 472046 presented on Tuesday, November 15, 2016 in the 448 Poster Session: Particle Technology Forum, at the 2016 AIChE Annual Meeting, November 13-18, 2016, San Francisco, California.

258. Norman J. Wagner, Matthew J. Armstrong* and Antony N. Beris, "Modeling the Transient Shear Flow of a Carbon Black Soft Colloidal System Using a Scalar Structural Parameter Thixotropic Model." Paper 455090 presented on Wednesday, November 16, 2016: 1:15 PM in the session 519 Colloidal Hydrodynamics: Structure and Microrheology, at the 2016 AIChE Annual Meeting, November 13-18, 2016, San Francisco, California.

259. Paul M. Mwasame, Norman J. Wagner, and Antony N. Beris*, "Modeling microstructural inertia effects in dilute emulsions." Paper EF5 presented on Monday, February 13, 2017: 11:40 AM in the session Emulsions, Foams & Interfacial Rheology, at the Society of Rheology 88th Annual Meeting, February 12-16, 2017, Tampa, Florida.

260. Paul M. Mwasame*, Norman J. Wagner, and Antony N. Beris, "A thermodynamically consistent macroscopic model for dilute emulsion behavior." Paper EF6 presented on Monday, February 13, 2017: 1:30 PM in the session Emulsions, Foams & Interfacial Rheology, at the Society of Rheology 88th Annual Meeting, February 12-16, 2017, Tampa, Florida.

261. Jeffrey S. Horner*, Antony N. Beris, Norman J. Wagner, and Donna S. Woulfe, “Investigation of the human blood rheology in transient flows.” Paper BA9 presented on Monday, February 13, 2017: 2:45 PM in the session Biorheology & Active Fluids, at the Society of Rheology 88th Annual Meeting, February 12-16, 2017, Tampa, Florida.

262. Paul M. Mwasame*, Norman J. Wagner, and Antony N. Beris, “A multiscale model for the rheology of thixotropic suspensions.” Poster PO26 presented on Wednesday, February 15, 2017: 6 PM in the poster session at the Society of Rheology 88th Annual Meeting, February 12-16, 2017, Tampa, Florida.

263. Jeffrey S. Horner*, Antony N. Beris, Norman J. Wagner, and Donna S. Woulfe, "Connecting human blood rheology to physiology." Poster presented at the 14th Annual Biomechanics Research Symposium, on 1:00 pm Friday May 12, 2017 at STAR Campus - Main Concourse at University of Delaware, Newark, DE.

264. Kostas D. Housiadas, Gaurab Samanta, Alex Young and Antony N. Beris*, “On the Tails of Probability Density Functions in Newtonian and Viscoelastic Turbulent Channel Flows.” Paper presented on Tuesday June 13, 2017 at 11:10 AM in the 18th International Workshop on Numerical Methods for Non-Newtonian Flows, June 13-16, 2017, University of British Columbia, Vancouver, Canada.

265. Jeffrey S. Horner*, Antony N. Beris, Norman J. Wagner, and Donna S. Woulfe, "A thixotropic model for transient blood rheology." Paper presented at the 91st ACS Colloid & Surface Science Symposium, on 2:20 pm Tuesday July 11, 2017 at Shepard Hall 304 at The City College of New York, New York, NY.

266. Antony N. Beris*, Paul M. Mwasame and Norman J. Wagner, “Modeling the rheology of dilute emulsions: Incorporating microstructural inertia effects torheology” Paper presented on Thursday, July 13, 2017: 9:50 AM in the 8th International Conference of the Hellenic Society of Rheology, July 12-14 2017, Curium Palace Hotel, Limassol, Cyprus.

267. Antony N. Beris*, Paul M. Mwasame and Norman J. Wagner, “Macroscopic Modeling of the Flow of Dilute Emulsions in the Presence of Micro-Inertia” Paper presented on Tuesday, August 8, 2017: 10:00 AM in the National Energy Technology Laboratory’s (NETL) 2017 Workshop on Multiphase Flow Science, August 8-10, 2017, Morgantown Marriott at Waterfront Place, Morgantown, West Virginia.

268. Matthew J. Armstrong*, Antony Beris, and Norman J. Wagner “Modeling the transient shear flow and predicting large amplitude oscillatory shear (LAOS) flow of a thermoreversible gel using a scalar structure parameter thixotropic model.” Paper presented at the 89th Annual Meeting of the Society of Rheology, October

8-12, 2017 on Monday, October 9, 2017, at 2:45 pm in Crystal C (Track 3), in Denver, Colorado.

269. Matthew J. Armstrong*, Paul M. Mwasame, Antony Beris, and Norman J. Wagner, “Application of a parallel tempering algorithm towards inverse modeling.” Paper presented at the 89th Annual Meeting of the Society of Rheology, October 8-12, 2017 on Monday, October 9, 2017, at 4:35 pm in Crestone B (Track 5), in Denver, Colorado.

270. Jeffrey S. Horner, Antony N. Beris*, Norman J. Wagner, and Donna S. Woulfe, “Modeling the transient rheology of human blood.” Paper presented at the 89th Annual Meeting of the Society of Rheology, October 8-12, 2017 on Wednesday, October 11, 2017, at 9:50 am in Crystal A (Track 1), in Denver, Colorado.

271. Paul M. Mwasame, Norman J. Wagner, and Antony N. Beris*, “Modeling microstructural inertia effects in material flow.” Paper presented at the 89th Annual Meeting of the Society of Rheology, October 8-12, 2017 on Wednesday, October 11, 2017, at 5:00 pm in Crestone B (Track 5), in Denver, Colorado.

272. Jeffrey S. Horner*, Antony N. Beris, Norman J. Wagner, and Donna S. Woulfe, "Effects of physiology on blood rheology." Poster presented at the 2017 BMES Annual Meeting, on 9:30 am Thursday October 12, 2017 at Convention Center in Phoenix, AZ.

273. Jeffrey S. Horner*, Norman J. Wagner , Antony N. Beris and Donna S. Woulfe, “The Importance of Rheology in Blood Flow Modeling.” Paper 148g presented at the 2017 AIChE Annual Meeting, Monday, October 30, 2017, 02:15 PM - 02:30 PM, Hilton Minneapolis - Marquette I/II/III/VIII/IX.

274. Paul M. Mwasame, Antony N. Beris* and Norman J. Wagner, “A New Conformation Tensor Based Macroscopic Model for Emulsions with Particle Inertia.” Paper 414e presented at the 2017 AIChE Annual Meeting, Tuesday, October 31, 2017, 04:30 PM - 04:45 PM, Hilton Minneapolis - Marquette I/II/III/VIII/IX.

275. Matthew J. Armstrong*, Ryan P. Murphy, Norman J. Wagner and Antony N. Beris, “Modeling the Transient Shear Flow and Predicting Large Amplitude Oscillatory Shear (LAOS) Flow of a Thermoreversible Gel Using a Scalar Structure Parameter Thixotropic Model.” Paper 435b presented at the 2017 AIChE Annual Meeting, Tuesday, October 31, 2017, 03:30 PM - 03:45 PM, Minneapolis Convention Center - M100D.

276. Paul M. Mwasame, Antony N. Beris* and Norman J. Wagner, “A Multiscale Tensor-Based Model for the Rheology of Aggregating Thixotropic Colloidal Suspensions.” Paper 535f presented at the 2017 AIChE Annual Meeting,

Wednesday, November 01, 2017, 01:45 PM - 02:00 PM, Hilton Minneapolis - Conrad D.

277. Antony N. Beris*, Paul M. Mwasame and Norman J. Wagner, "Macroscopic Modeling of Micro-Inertia Effects in Multiphase Flows." Paper Q6.04 presented in the Session Q6: Multiphase Flows: Modeling and Theory of the 70th Annual Meeting of the APS Division of Fluid Dynamics, Sunday–Tuesday, November 19–21, 2017; Denver, Colorado, on 1:29 PM–1:42 PM, Tuesday, November 21, 2017, Room: 406.

278. Jeffrey S. Horner*, Antony N. Beris, and Norman J. Wagner, "Modeling of blood rheology to improve flow simulations," Poster presented at the 2018 Colloidal, Macromolecular and Polyelectrolyte Solutions Gordon Research Conference, Ventura, CA, 02/07/2018.

279. Paul M. Mwasame, Antony N. Beris* and Norman J. Wagner, "Macroscopic modeling of microinertia effects in particulate flows." Paper F03.04 presented in the Session F03: Microinertia Effects in Particulate Flows, of the APS March Meeting 2018 Monday–Friday, March 5–9, 2018; Los Angeles, California, on Tuesday, March 6, 2018, 12:15PM - 12:27PM.

280. Jeffrey S. Horner*, Antony N. Beris and Norman J. Wagner, "Combining Rheology and Simulations to Model Bulk Blood Flow." Paper H53.04 presented in the Session H53: Fluid Mechanics for Soft Matter III: Cells, Particles, and Drops, of the APS March Meeting 2018 Monday–Friday, March 5–9, 2018; Los Angeles, California, on Tuesday, March 6, 2018, 3:30PM - 3:42PM.

281. Jeffrey S. Horner*, Antony N. Beris, and Norman J. Wagner, "Constitutive modeling of transient human blood rheology: homogeneous and inhomogeneous boundary layer effects," Tiger Hen Hawk Black Knight Rheology Symposium, West Point, NY, 04/21/2018.

282. Jeffrey S. Horner*, Antony N. Beris, and Norman J. Wagner, "Modeling thixotropy, viscoelasticity, and slip layer formation in human blood rheology," Paper presented at the 92nd American Chemical Society Colloid & Surface Science Symposium, State College, PA, 06/12/2018

283. Paul M. Mwasame, Antony N. Beris* and Norman J. Wagner, "Macroscopic modeling of microinertia effects in particulate flows." Paper presented at the 8th International Workshop on Nonequilibrium Thermodynamics, Sint-Michielsgestel, The Netherlands, July 1-6, 2018.

284. Jeffrey S. Horner*, Antony N. Beris, Norman J. Wagner, and Donna Woulfe, "Incorporating rheology and concentration gradients in blood flow simulations," Paper presented at the Society for Industrial and Applied Mathematics Conference on the Life Sciences, Minneapolis, MN, 08/07/2018.

285. Jeffrey S. Horner, David Phan, Keith Coasey, Antony N. Beris, and Michael E. Mackay*, "Simulation of rheological effects in processing during material extrusion," Paper AM7 presented at the 90th Annual Meeting of the Society of Rheology, October 14-18, 2018 on Monday, October 15, 2018, at 1:55 pm in Bellaire (Track 3), in Westin Galeria, Houston, Texas.

286. Jeffrey S. Horner*, Antony N. Beris, and Norman J. Wagner, "Transient modeling of viscoelasticity, thixotropy, and flow inhomogeneities (syneresis) in human blood rheology," Paper BA14 presented at the 90th Annual Meeting of the Society of Rheology, October 14-18, 2018 on Tuesday, October 16, 2018, at 9:50 am in Tanglewood (Track 6), in Westin Galeria, Houston, Texas.

287. Matthew J. Armstrong, Norman J. Wagner, Antony N. Beris, Jeffrey S. Horner, Timothy Hill, and Charles Keith*, "Contemporary Modeling and Analysis of Human Blood Rheology with Recently Developed Models, Experimental and Analysis Techniques," Paper BA15 presented at the 90th Annual Meeting of the Society of Rheology, October 14-18, 2018 on Tuesday, October 16, 2018, at 10:15 am in Tanglewood (Track 6), in Westin Galeria, Houston, Texas.

288. Jeffrey S. Horner*, Antony N. Beris, Norman J. Wagner, and Donna S. Woulfe, "An interspecies comparison of blood rheology," Poster presented at the 90th Annual Meeting of the Society of Rheology, October 14-18, 2018 on Wednesday, October 17, 2018, in Westin Galeria, Houston, Texas.

289. Paul M. Mwasame, Norman J. Wagner, and Antony N. Beris*, "Conformation tensor-based macroscopic models of particulate and multiphase systems," Paper SC43 presented at the 90th Annual Meeting of the Society of Rheology, October 14-18, 2018 on Thursday, October 18, 2018, at 10:25 am in Galleria I (Track 1), in Westin Galeria, Houston, Texas.

290. Matthew J. Armstrong*, Norman J. Wagner, and Antony N. Beris, "A viscoelastic modification to the Modified Delaware Thixotropic Model (MDTM)," Paper SC45 presented at the 90th Annual Meeting of the Society of Rheology, October 14-18, 2018 on Thursday, October 18, 2018, at 11:15 am in Galleria I (Track 1), in Westin Galeria, Houston, Texas.

291. Antony N. Beris, Jeffrey S. Horner*, Norman J. Wagner, and Donna Woulfe, "Blood Rheology across Species: Differences and Similarities." Poster 190br presented at the Poster Session: Engineering Fundamentals in Life Science in the 2018 AIChE Annual Meeting, Monday, October 29, 2018, 03:30 PM, David L. Lawrence Convention Center, Exhibit Hall B, Pittsburgh, PA.

292. Antony N. Beris*, Paul M. Mwasame and Norman J. Wagner, "Applications of Conformation Tensor-Based Macroscopic Models to Particulate and Multiphase Systems." Paper 419c presented at the 419 session in the 2018 AIChE Annual

Meeting, Tuesday, October 30 4:00 PM, Omni William Penn Hotel, Phipps, Pittsburgh, PA.

293. Antony N. Beris, Jeffrey S. Horner* and Norman J. Wagner, "Viscoelasticity, Thixotropy, and Wall Effects in Human Blood Rheology." Paper 460c presented at the 460 session in the 2018 AIChE Annual Meeting, Wednesday, October 31 8:45 AM, Omni William Penn Hotel, Frick, Pittsburgh, PA.

294. Jeffrey S. Horner*, Antony N. Beris, Norman J. Wagner, and Donna S. Woulfe, "A comparative study on interspecies blood rheology," Paper presented at the APS March Meeting 2019, Boston, MA, 03/07/2019.

295. Jeffrey S. Horner*, Yu-Jiun Lin, Antony N. Beris, and Norman J. Wagner, "Understanding interspecies blood variations through rheology and microfluidics," Paper presented at the 93rd American Chemical Society Colloid & Surface Science Symposium, Atlanta, GA, 06/18/2019.

296. Paul M. Mwasame, Antony N. Beris, R. Bert Diemer, Soham Jariwala and Norman J. Wagner*, "A constitutive equation for thixotropic suspensions with yield stress by coarse-graining a population balance model & experimental validation," Paper presented on Tuesday, June 25, 2019 09:10 – 09:30 am at the 9th Int. Conference of the Hellenic Society of Rheology, June 23-27, 2019, Samos, Greece.

297. Spyros D. Gkormpatsis*, Evgenios A. Gryparis, Kostas D. Housiadas and Antony N. Beris, "Steady sphere translation in a viscoelastic fluid with Navier slip on the sphere," Poster presented on Tuesday, June 25, 2019 7:25 – 8:00 pm at the 9th Int. Conference of the Hellenic Society of Rheology, June 23-27, 2019, Samos, Greece.

298. Jeffrey S. Horner, Antony N. Beris* and Norman J. Wagner, "Experimental and Theoretical Investigations of Human and Animal Blood Rheology," Paper presented on Wednesday, June 26, 2019 09:50 – 10:10 am at the 9th Int. Conference of the Hellenic Society of Rheology, June 23-27, 2019, Samos, Greece.

299. Tim Van de Vyver, Jeffrey S. Horner, Norman J. Wagner & Antony N. Beris*, "Modeling and Simulation of Blood Flow Syneresis and Pulsatile Pipe Flow Effects," Paper BB1 presented at the 91st Annual Meeting of the Society of Rheology, October 20-24, 2019 on Monday, October 21, 2019, at 09:50 am in Session: Biomaterials and Biofluid Dynamics, Room 306B (Track 6) in Raleigh, NC.

300. Matthew J. Armstrong*, Jeffrey S. Horner, Michael Deegan, Norman J. Wagner, and Antony N. Beris, "Large Amplitude Oscillatory Shear (LAOS) Flow as a Metric of Comparison for Contemporary Human Blood Rheological Models,"

Paper BB5 presented at the 91st Annual Meeting of the Society of Rheology, October 20-24, 2019 on Monday, October 21, 2019, at 11:30 am in Session: Biomaterials and Biofluid Dynamics, Room 306B (Track 6) in Raleigh, NC.

301. Jeffrey S. Horner*, Yu-Jiun Lin, Antony N. Beris, and Norman J. Wagner, "Measurements and modeling of interspecies hemorheology and hemodynamics," Paper BB7 presented at the 91st Annual Meeting of the Society of Rheology, October 20-24, 2019 on Monday, October 21, 2019, at 1:55 pm in Session: Biomaterials and Biofluid Dynamics, Room 306B (Track 6) in Raleigh, NC.

302. Soham Jariwala*, Jeffrey S. Horner, Antony N. Beris and Norman J. Wagner, "A rheological constitutive model for human blood via population balance modeling," Poster PO98 presented at the 91st Annual Meeting of the Society of Rheology, October 20-24, 2019 on Wednesday, October 23, 2019, at 6:30 pm in the Ballroom on 4th floor, in Raleigh, NC.

303. Jeffrey S. Horner*, Soham Jariwala, Yu-Jiun Lin, Antony N. Beris and Norman J. Wagner, "An Inhomogeneous, Nonequilibrium Thermodynamics Approach to Modeling Blood Rheology," Poster 221i presented at the 221 Poster Session: Fluid Mechanics, in the 2019 AIChE Annual Meeting, Monday, November 11 3:30 PM, Hyatt Regency Orlando, Orlando Ballroom M, Orlando, Florida.

304. Jeffrey S. Horner*, Yu-Jiun Lin, Antony N. Beris and Norman J. Wagner, "Interspecies Variations in Hemorheology and Hemodynamics," Paper 408e presented at the 408 Session: Hydrodynamics of Biological Systems, in the 2019 AIChE Annual Meeting, Tuesday, November 12 3:30 – 3:45 PM, Hyatt Regency Orlando, Orlando Ballroom L, Orlando, Florida.

305. Antony N. Beris*, Soham Jariwala and Norman J. Wagner, "Nonequilibrium Thermodynamics of Diffusion and Chemical Reactions in Multicomponent Systems," Paper 414f presented at the 414 Session: Mathematical Modeling of Transport Processes, in the 2019 AIChE Annual Meeting, Tuesday, November 12 4:35 – 4:48 PM, Hyatt Regency Orlando, Plaza International Ballroom I, Orlando, Florida.

306. Jeffrey Horner*, Antony N. Beris and Norman J. Wagner, "A Comparative Study of Blood Rheology across Species Identifying a New Allometric Scaling" Paper presented at the 14th Annual Delaware Space Grant Research Symposium (zoom, online) April 15, 2020, University of Delaware, William H. Matthaeus (director Delaware Space Grant Consortium and Symposium Organizer).

307. Soham Jariwala*, Tim Van de Vyver, Norman Wagner and Antony Beris, "Modeling and simulating transient flows of thixotropic and viscoelastic fluids in microfluidic tubes," Paper U13.00005 presented (virtually) at the 73rd Annual Meeting of the APS Division of Fluid Dynamics, 8:45 AM Tuesday, November 24, 2020.

308. Antony Beris*, Soham Jariwala and Norman Wagner, “Flux-Based Modeling of Coupled Momentum, Mass and Heat Transfer and Chemical Reactions in Multicomponent Systems,” Paper W17.00003 presented (virtually) at the 73rd Annual Meeting of the APS Division of Fluid Dynamics, 10 AM Tuesday, November 24, 2020.

309. Antony N. Beris*, Soham Jariwala and Norman J. Wagner, “Non-equilibrium thermodynamics modeling of shear banding in rodlike micellar solutions,” Paper NF52 presented (virtually) at the ICR2020 - 18th International Congress on Rheology, 15:30 PM Monday, December 14, 2020.

310. Soham Jariwala*, Julie B. Hipp, Antony N. Beris and Norman J. Wagner, “Developing a rheological constitutive model using population balances for thixotropic aggregating suspensions,” Paper CS49 presented (virtually) at the ICR2020 - 18th International Congress on Rheology, 10:10 AM Tuesday, December 15, 2020.

311. Jeffrey S. Horner, Soham Jariwala, Antony N. Beris and Norman J. Wagner*, “Measurements and population balance modeling of hemorheology in humans and across species,” Paper LS23 presented (virtually) at the ICR2020 - 18th International Congress on Rheology, 15:10 AM Wednesday, December 16, 2020.

312. Antony N. Beris*, Soham Jariwala and Norman J. Wagner, “Non-Equilibrium Thermodynamics Modeling of Wormlike Micellar Solutions,” Paper MS13 presented (virtually) at the AERC 2021 - The Annual European Rheology Conference, April 13-15, 2021 – Cyberspace.

313. Soham Jariwala*, Matthew J. Armstrong, Norman J. Wagner and Antony N. Beris, “Modeling the flow of aggregating suspensions using a multiscale tensor approach,” Paper SC23 presented at the 92nd Annual Meeting of the Society of Rheology, October 10-14, 2021 on Tuesday, October 12, 2021, 2:45 pm, in Ballroom 6 (Track 5) at the Cross Insurance Center in Bangor, Maine.

314. Matthew J. Armstrong, Andre Pincot*, Soham Jariwala, Jeffrey Horner, Antony N. Beris and Norman J. Wagner, “Connecting structural thixotropic models with non-equilibrium thermodynamic principles for human blood,” Paper AR29 presented at the 92nd Annual Meeting of the Society of Rheology, October 10-14, 2021 on Wednesday, October 13, 2021, 3:45 pm, in Ballroom 7 (Track 2) at the Cross Insurance Center in Bangor, Maine.

315. Soham Jariwala*, Norman J. Wagner and Antony Beris, “A Multiscale Tensorial Approach for Modeling the Rheology of Thixotropic Aggregating Suspensions,” Paper 326c presented at the 2021 AIChE Annual Meeting, November 7-12, 2021 on Tuesday, Nov 9 1:15 PM, in Constitution A (Particulate and Multiphase Flows: Colloids and Polymers Session) at Sheraton Back Bay, Boston, MA.

316. Andre Pincot, Matthew Armstrong*, Jeffrey S. Horner, and Antony Beris, "Recent Enhanced Structural Stress and Tensor Upgrades to Mhawb Tevp Model for Characterization of Human Blood," Paper 431e presented at the 2021 AIChE Annual Meeting, November 7-12, 2021 on Wednesday, Nov 10 9:12 AM, in John B. Hynes Veterans Memorial Convention Center, 109 (Large-Scale Models in Systems Biology Session) at Sheraton Back Bay, Boston, MA.

317. Soham Jariwala, Norman J Wagner, Antony N Beris*, "Modeling and Simulation of Transient Poiseuille Blood Flow in Microfluidic Tubes." Paper P07.00005 presented virtually on Monday November 22, 2021 4:57 – 5:10 PM, at the 74th Annual Meeting of the APS Division of Fluid Dynamics, Sunday–Tuesday, November 21–23, 2021; Phoenix Convention Center, Phoenix, Arizona.

318. Soham Jariwala, Norman J. Wagner and Antony N. Beris*, "A thermodynamically consistent, microscopically-based, model of the rheology of aggregating particles suspensions," Paper presented to the 10th International meeting of the Hellenic Society of Rheology, HSR2022 held in Skiathos, Greece, June 29 – July 2, 2022.

319. Soham Jariwala*, Norman J. Wagner and Antony N. Beris, "A thermodynamically consistent, microscopically-based model of the rheology of aggregating particles suspensions," Paper presented to the 9th International Workshop on Nonequilibrium Thermodynamics, IWNET2022, held in University of Victoria, Victoria, Canada, July 10 – 15, 2022.

320. Antony N. Beris* and Brian J. Edwards, "Dissipation in Non-Equilibrium Thermodynamics," Paper presented to the 9th International Workshop on Nonequilibrium Thermodynamics, IWNET2022, held in University of Victoria, Victoria, Canada, July 10 – 15, 2022.

321. Sean Farrington*, Norman J. Wagner and Antony N. Beris, "Rheology of human blood and the connection to physiology," Paper AM17, presented at the Society of Rheology 93rdAnnual Meeting, Sheraton Grand Chicago, Chicago, Illinois, October 10 – 13, 2022.

322. Soham Jariwala*, Norman J. Wagner and Antony N. Beris, "A thermodynamically consistent, microscopically-based model of the rheology of aggregating particle suspension rheology," Paper SC21, presented at the Society of Rheology 93rdAnnual Meeting, Sheraton Grand Chicago, Chicago, Illinois, October 10 – 13, 2022.

323. Matthew J. Armstrong, Andre Pincot, Soham Jariwala, Norman J. Wagner and Antony N. Beris*, "Recent advances to the thixo-elasto-viscoplastic (TEVP) modeling of blood rheology," Paper BF23, presented at the Society of Rheology 93rdAnnual Meeting, Sheraton Grand Chicago, Chicago, Illinois, October 10 – 13, 2022.

324. (Symposium organizer (together with Manlio Tassieri and Pier-Luca Maffetone) on “Biorheology and Rheology in the Medical Field”) Sean Farrington*, Antony Beris, Norman Wagner, “Thixotropy of Human Blood and the Role of Rouleaux Formation,” Paper presented on Monday, July 31, 2023 at 11:40 – 12:00 in the symposium “Biorheology and Rheology in the Medical Field” at the 19th International Congress on Rheology, Athens, Greece, July 30, 2023 – August 4, 2023.

325. Soham Jariwala, Matthew Armstrong, Antony Beris*, Norman Wagner, “Population balances and non-equilibrium thermodynamics description of the thixo-elasto-visco-plastic (TEVP) nature of blood rheology,” Paper presented on Tuesday, August 1, 2023 at 10:20 – 10:40 in the symposium “Biorheology and Rheology in the Medical Field” at the 19th International Congress on Rheology, Athens, Greece, July 30, 2023 – August 4, 2023.

326. Kostas Housiadas*, Antony Beris, “The effect of viscoelasticity in channel and tubes with variable geometry using high-order lubrication theory,” Paper presented on Tuesday, August 1, 2023 at 15:30 – 15:50 in the symposium “Microfluidics, nanofluidics, thin films and confined flows” at the 19th International Congress on Rheology, Athens, Greece, July 30, 2023 – August 4, 2023.

327. Sean Farrington*, Soham Jariwala, Matthew Armstrong, Ethan Nigro, Norman Wagner, Antony Beris, “Physiology-Based Parameterization of Human Blood Shear Rheology via Machine Learning,” Paper presented on Friday, August 4, 2023 at 10:00 – 10:20 in the symposium “Machine learning and AI in rheology” at the 19th International Congress on Rheology, Athens, Greece, July 30, 2023 – August 4, 2023.

328. V. Kurian, M. Gee*, A. Okossi, L. Chen, A. N. Beris, “Model-based diagnosis and management of chronic obstructive pulmonary disease (COPD),” Paper 296a presented in the 2024 AIChE annual meeting, Wednesday, November 8, 2023, 8 – 8:24 am, Lobby Level, Hyatt Regency Orlando, Florida.

329. A. N. Beris, S. Jariwala, N. J. Wagner, “Modeling and Simulation of Inhomogeneous Time-Dependent Poiseuille Pipe Flow of Aggregating Concentrated Suspensions,” Paper presented in the X34 session, Non-Newtonian Flows, General, on Tuesday, November 21, 2023, at the 76th Annual Meeting of the APS Division of Fluid Dynamics, Sunday-Tuesday November 19-21, 2023, Washington DC.

330. Kostas Housiadas*, Antony N. Beris, “Inertia and viscoelastic effects on the pressure-drop and Trouton ratio for viscoelastic flow in hyperbolic geometries,” Paper presented on Monday, October 7, 2024, at the Canadian Society of

Chemical Engineers Annual Meeting, CSChE, 6-9 October 2024, Toronto, Canada.

331. Kostas Housiadas, Antony N. Beris*, “Pressure-drop and Trouton ratio for viscoelastic flow with slip in hyperbolic geometries,” Paper presented on Monday, October 7, 2024, at the Canadian Society of Chemical Engineers Annual Meeting, CSChE, 6-9 October 2024, Toronto, Canada.

332. Kostas Housiadas*, Antony N. Beris, “A new theoretical framework for the evaluation of the Trouton ratio of viscoelastic fluids in hyperbolic tubes,” Paper F112 presented on Monday, October 14, 2024, at the Society of Rheology, 95th Annual Meeting, Austin Marriott Downtown, Austin, Texas, October 14-17, 2024.

333. Soham Jariwala, Norman J. Wagner, Antony N. Beris*, “Inhomogeneous Time-Dependent Poiseuille Pipe Flow of Aggregating Concentrated Suspensions,” Paper DP23 presented on Tuesday, October 15, 2024, at the Society of Rheology, 95th Annual Meeting, Austin Marriott Downtown, Austin, Texas, October 14-17, 2024.

334. Sean M. Farrington*, J. Bockrath, Norman J. Wagner, Antony N. Beris, “Blood rheology for astronaut cardiovascular health diagnostics,” Poster PO13 presented on Wednesday, October 16, 2024, at the Society of Rheology, 95th Annual Meeting, Austin Marriott Downtown, Austin, Texas, October 14-17, 2024.

335. Sean M. Farrington*, Findley Moran, Norman J. Wagner, Antony N. Beris, “Step-down transience in human blood at low shear rates,” Paper BL29 presented on Thursday, October 17, 2024, at the Society of Rheology, 95th Annual Meeting, Austin Marriott Downtown, Austin, Texas, October 14-17, 2024.

G. STUDENTS ADVISEMENT & RESEARCH ASSOCIATES

I. Graduate Students

1. Baichen Liu, “Calculations of Time-Dependent Viscoelastic Flow,” Ph.D. thesis defense in August 28, 1989.

2. Stergios Pilitsis, “Calculations of Viscoelastic Flow within an Undulating Tube,” Ph.D. thesis defense in December 11, 1989.

3. Brian Edwards, “Modelling and Calculations of the Flow of Polymeric Liquid Crystals,” Ph.D. thesis defense in May 15, 1991.

4. John Gustafson (with H. Foley), “Reaction and Transport Phenomena in Non-Thermal Equilibrium Plasma,” Ph.D. thesis defense in November 5, 1991.

5. Chiu Chan (with S. Advani), “Modelling of the Flow Behavior of High-Aspect Ratio Fiber Suspensions,” Ph.D. thesis defense in December 2, 1991.

6. Marios Avgousti, “Viscoelastic Flow Instabilities: The Taylor-Couette Problem,” Ph.D. thesis defense in October 2, 1992.

7. Athanassios Souvaliotis, “Simulations of Steady-State Polymeric Flow in Model Porous Media,” Ph.D. thesis defense in December 11, 1992.

8. Vikram Pillai (with P. Dhutjati), “Use of Simulations, in optimization of, and design of knowledge based control system for a composite manufacturing process,” Ph.D. thesis defense in November, 1993.

9. Vlasios Mavrantzas, “Surface effects on the structure and rheology of dilute polymer solutions,” Ph.D. thesis defense in March, 1994.

10. John Richards (with A. Lenhoff), “Fluid mechanics of liquid-liquid systems,” Ph.D. thesis defense in April, 1994.

11. Radhakrishna Sureshkumar, “On Modelling and Simulation of 3-D time-dependent Viscoelastic Flows,” Ph.D. thesis defense in July, 1996.

12. Costas Dimitropoulos, “Efficient Spectral Simuations of Complex Non-Linear and Time-Dependent Flows,” Ph.D. thesis defense in November, 1999.

13. Jaydeep Kulkarni, “On the investigation of Flow-Induced Crystallization in Fiber Spinning,” Ph.D. thesis defense in April, 2000.

14. Dennis Michaud (with P. Dhurjati), “On the Application of Expert Systems to Resin Transfer Molding,” Ph.D. thesis defense in April, 2000.

15. Joydeep Mukherjee, “Multi-scale modeling of the flow-induced semicrystalline morphologies in polymer fiber spinning.” Ph.D. thesis defense in June, 2004.

16. Luo Wang, “Direct Numerical Simulations (DNS) of Turbulent Flows in an undulating Channel,” Ph.D. thesis defense in August 2006.

17. Gaurab Samanta, “Investigation of Viscoelastic Turbulent Channel Flows Using Karhunen-Loeve (K-L) Analysis,” Ph.D. thesis defense in August 31, 2009.

18. David Johnson (with Dr. U. Naik),” Investigating the Effects of Blood Flow in Human Arteries.” Ph.D. thesis defense in August 25, 2010.

19. Matthew J. Armstrong (with Prof. N.J. Wagner), “Continuum Modeling of the Rheology of Thixotropic Concentrated Suspensions Systems.” Ph.D. thesis defense in June 12, 2015.

20. Alex J. Apostolidis, “Low-Dimensional Modeling of the Non-Newtonian Blood Flow Characteristics in Human Arterial Flow.” Ph.D. thesis defense in June 19, 2015.

21. Paul M. Mwasame (with Prof. N.J. Wagner), “Multiscale investigation of fundamental rheological phenomena in particulate suspensions based on flow-microstructure interactions.” Ph.D. thesis defense in August 29, 2017.

22. Jeffrey S. Horner (with Prof. N.J. Wagner), “An experimental and theoretical investigation of blood rheology.” Jeffrey Horner, Ph.D. thesis defense on Friday, June 26, 2020 at 3:00pm.

23. Soham Jariwala (with Prof. N.J. Wagner), “Multiscale rheological constitutive relations for concentrated aggregating suspensions.” Ph.D. thesis defense on Wednesday, April 26, 2023 at 8:30 am.

24. Sean Farrington (with Prof. N.J. Wagner), “An experimental and theoretical investigation of inhomogeneous effects in blood microfluidic flows.” Fourth Year Ph.D. Graduate Student (Spring 2025).

II. Research Associates

1. Francois Thevenin, “Boundary Element Simulations of Polymer Reaction-Mixing Problems with a Knitted-Disks Extruder,” (with K. Bischoff, C. Denson) September 1991-April 1992.

2. Dr. Arthur Kordon, “Rapid Prototyping of Ceramic Preforms using Cold Injection Molding Techniques,” August 1, 1992 - July 1, 1993.

3. Dr. Kyung-sun Chae, “On the investigation of free-surface flows with surfactants,” September 1, 1994 - January 1, 1996.

4. Dr. Brian J. Edwards, “On the investigation of free-surface flows with surfactants,” January 1, 1996 – February 28, 1996.

5. Dr. Peter Wapperom, “On the Simulation of 3-Dimensional Newtonian Flows in Undulating Channel Geometries,” September 1, 2000 – December 31, 2001.

6. Dr. Kostas D. Housiadas, “DNS of Viscoelastic Turbulent Channel Flows,” May 1, 2001 – August 31, 2005.

7. Dr. Stevan Wilson, “On the 3D Lattice-based model Simulation of the Amorphous Phase of Semicrystalline Polymers,” December 1, 2001 – August 31, 2003.

8. Dr. John Bishop, (jointly with N.J. Wagner) “Weld Line Phenomena in Polymer Processing,” Supported through a grant from Dow Chemicals. May 1, 2010 – July 30, 2011.

9. Dr. Natalie Germann, (jointly with P. Cook and N.J. Wagner) “Modeling of Shear-Banding through Non-Equilibrium Thermodynamics.” Supported through an Instructional Fellowship from the Department of Math. Sciences at UD. August 30, 2011 – 2014.

10. Dr. Varghese Kurian, (on behalf of the Late B. Ogunnaike) “Modeling and Simulations of COPD.” February 2022 – August 2023.

III. Master Students

1. Tim van der Vyver, (jointly with W.J. Wagner) “Calculations of blood flow in pulsatile Poiseuille flow,” M.S. (Expected) Spring 2019.

IV. Undergraduate Students

1. Terumi Nagase, “Viscoplastic Flow Past a Sphere,” B.S. 1987.

2. Chris Lastoskie (with H. Foley), “Finite Element Modeling of CVD Transport Phenomena,” B.S. 1989

3. Scott Leap, “Cellular Automata Applications in Reaction-Diffusion Problems,” Research Project, Summer 1990

4. Stevan Wilson, “Domain Decomposition Techniques to Steady State Viscoelastic Flows,” Research Project, Summer 1993 and 1994.

5. Timothy King, “On the Evaluation of a Monte-Carlo Lattice-based Model Simulation for 2D Polymer Chain Conformations,” REU student, June – August 2001.

6. Ryan C. Snyder, “A Novel Monte Carlo Method for Fully Populated Lattice Models of Semi-Crystalline Polymers,” B.S. Thesis defense May 14, 2001.

7. Melody Kelderhouse, “3d Visualization Studies of Turbulent Viscoelastic Flows,” REU student, June – August 2001.

8. Justin Spaeth, “An Input-Parameter Model for Predicting Blood Flow and Pressure in the Human Circulatory System,” B.S. Thesis defense in the Honors program, May 2006.

9. Geoff Oxberry, “Elucidation of the Time Scales of Coherent Structures in Newtonian Turbulent Channel Flows Through Karhunen-Loeve Analysis,” Combined B.S. and M.S. degree, May 2006.

10. Phillip Laker-Ojok, NSF REU Student (from MIT), Summer 2008.

11. Evan Vanarelli, Senior Undergraduate Chemical Engineer, working on research on the application of exergy to the evaluation of internal combustion engines, 2009-2010.

12. Alex Young, NSF REU Student (from Harvey Mudd College), Summer 2009.

13. Mariah Woodroof, “Weld Line Phenomena in Wire Coating Processes.” NSF REU Student (from North Carolina State University), Summer 2010.

14. Clayton Carr, “Lattice Boltzmann Method in Blood Flow Simulations.” Winter Session Research supported by NSF, Winters 2011, 2012, 2013.

15. Alex Hallenbeck, UD CCEI Undergraduate Summer Fellowship 2010: Exergy analysis of biofuels production and end uses; Undergraduate research: "Evaluation of Fuels for the Internal Combustion Engine." Fall 2010 – Spring 2011.

16. Matt Wehrman, UD Junior, Undergraduate Summer Research through a F.T.W. Russell fellowship, in "Biodiesel Production from Used Vegetable Oil Using a Base-Catalyzed Transesterification Reaction," Summer 2011.

17. Colin Sweeney, (2011) UD graduate, Research through a Departmental Senior Lab Support, in "Biodiesel Production from Used Vegetable Oil Using a Base-Catalyzed Transesterification Reaction," Summer 2011.

18. Matt Wiatrowski, UD Sophomore, "One Dimensional Models of Blood Flow through the Human Arterial Network," Winter Session Research supported by NSF, Winter 2012.

19. Stephanie Seyfert, recent (2012) UD graduate, Research through a Departmental Senior Lab Support and thanks to an Agilent Technologies Equipment Grant, in "Biodiesel Production and Advance Product Testing from Vegetable Oil Using a Base-Catalyzed Transesterification Reaction," Summer 2012.

20. Nathan Hess, UD senior (Jointly supervised with Prof. Prasad Dhurjati), CHEG473 research on "Experimental Verification of Newly Proposed Friction Law for Polymer-Induced Drug-Reduced Turbulent Pipe Flows," Fall 2012.

21. Matt Benjes, UD Junior, "Extension of One Dimensional Models of Blood Flow through the Human Arterial Network to Allow for a more Detailed Description of the Brain Arterial Network," Winter Session Research supported by NSF, Winter 2012-13 and Summer Research, Summer 2013.

22. Jack Fillenwarth, UD Senior, "A Novel Reformulation of a One-Dimensional Model of Blood Flow through the Human Arterial Network to Incorporate More Detailed Descriptions through the Brain and Other Tissues" Winter Session Research, Winter 2013-14 & Summer 2014, 2015 & B.S. thesis, May 2016.

23. Xiaoliang Yao, UD Senior, (jointly with Yangchen Liu and Xin Liu), (jointly co-supervised with Prof. Dhurjati), CHEG473 research on "Evaluation of Fluid Mechanics Junior Lab Experiment with Emphasis the Polymer-Induced Drug-Reduction Component," Fall 2015.

24. Yangchen Liu, UD Senior, (jointly with Xiaoliang Yao and Xin Liu), (jointly co-supervised with Prof. Dhurjati), CHEG473 research on "Evaluation of Fluid Mechanics Junior Lab Experiment with Emphasis the Polymer-Induced Drug-Reduction Component," Fall 2015.

25. Xin Liu, UD Senior, (jointly with Xiaoliang Yao and Yangchen Liu), (jointly co-supervised with Prof. Dhurjati), CHEG473 research on “Evaluation of Fluid Mechanics Junior Lab Experiment with Emphasis the Polymer-Induced Drug-Reduction Component,” Fall 2015.

26. Dominic Gallo, UD Sophomore, “On the parameter estimation of blood rheology models based on steady and transient shear flow data.” NSF-supported research, Winter session 2017.

27. Jordan Peel, UD Junior, “On the modeling of reactions in vitrimer polymers in 3D printing.” (Together with Profs. M. Mackey and C. Kloxin), Winter session 2019-2020; Fall semester 2020: CHEG473 research.

28. Ethan Nigro, UD Senior (22-23), “Analysis of blood rheology data.” Summer session 2022, followed by independent CHEG473 research on “An investigation through the use of Neural Nets of the connection between physiological and rheological parameters in human blood” during Fall of 2022.