

STEPHEN H. DAVIS

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Current Positions

McCormick School (Institute) Professor

Walter P. Murphy Professor of Applied Mathematics

Education

Ph. D., Mathematics, 1964	Rensselaer Polytechnic Institute
M.S., Mathematics, 1962	Rensselaer Polytechnic Institute
B.E.E., Electrical Engineering, 1969	Rensselaer Polytechnic Institute

Professional Employment

- Chair, Department of Engineering Sciences and Applied Mathematics, Northwestern University (1988- 1991)
- Professor, Engineering Sciences and Applied Mathematics, Northwestern University (1979-present)
- Professor, Mechanical Engineering, Northwestern University (1979-1999; 2003-present)
- Director, Center for Multiphase Fluid Flow and Transport, Northwestern University (1986-1988)
- President, SHD Associates, Inc. (1979-1994)
- Professor, Mechanics and Materials Science, the Johns Hopkins University (1975-1978)
- Professor, Earth and Planetary Sciences, the Johns Hopkins University (1975-1978)
- Associate Professor of Mechanics, the Johns Hopkins University (1970-1975)
- Assistant Professor of Mechanics, the Johns Hopkins University (1968-1970)
- Lecturer, Department of Mathematics, Imperial College, University of London (1966-1968)
- Mathematician, RAND Corporation (1964-1966)

Professional Appointments and Activities

- **California Institute of Technology:** *Moore Distinguished Scholar* 2018-2019
- **National Academy of Sciences:** CMC (*Committee on Membership*) 2015- present
- **National Materials and Manufacturing:** *Board Member*, 2013
- **Journal of Fluid Mechanics:** *Assistant Editor* 1969-1975; *Associate Editor* 1975-1989; *Editor* 2000-2010
- **Annual Review of Fluid Mechanics:** *Member*, Editorial Board 1994-1999; *Associate Editor* 1999-2002; *Editor* 2003-present
- **Institute of Mathematical Sciences, Imperial College, London:** *Member*, International Advisory Board 2004-2009

Professional Appointments and Activities, continued

- **SIAM Monographs on Mathematical Modeling and Computation:** *Member*, Editorial Board 1994-1999
- **International Review of Mathematics, United Kingdom:** *Committee Member* 2003
- **Cambridge University Press Monographs in Mechanics:** *General Editor* 1999-present
- **Proceedings of the Royal Society, London:** *Editorial Board* 2004-2007
- **American Physical Society:** *Chair*, Division of Fluid Dynamics 1978-1979, 1987-1988; *Councilor*, Division of Fluid Dynamics, 1980-1981; *Chair*, Fellowship Committee, Division of Fluid Dynamics, 1981-1986; *Member*, Executive Committee, Division of Fluid Dynamics, 1977-1980, 1987-1990
- **National Aeronautics and Space Administration (NASA):** *Member*, Fluid Physics Committee of the Universities Space Research Guidance Committee, 1977-1981; *Chair*, Discipline Working Group on Fluid Dynamics and Transport Phenomena 1991-1997; *Member*, 1997-2005; *Member*, Microgravity Science and Applications Subcommittee of the Space Science and Applications Advisory Committee, 1991-1997
- **National Academy of Engineering:** *Member*, Mechanical Engineering Peer Committee 1998-2001
- **U.S. National Committee on Theoretical and Applied Mechanics:** *Member-at-large* 1978-1979; *Representative*, Society of Industrial and Applied Mathematics 1979-1983; *Representative*, American Physical Society 1983-1987
- **Society for Industrial and Applied Mathematics:** *Visiting Lecturer* 1973 – 1974; *Council Member* 1983-1985
- **National Science Foundation:** *Cited for Achievement* 1974; *Advisory Committee Member*, Mechanics, Structures, and Materials Engineering 1987-1989
- **Environmental Research Guidance Committee:** *Member*, Advisory to the State of Maryland on power plant siting 1975-1978

Visiting Positions

- Eidgenössische Technische Hochschule, Institut für Aerodynamik, Zürich: Visiting Scholar June-August 1971
- Monash University, Department of Mathematics: Visiting Professor June-August 1973
- University of Arizona, Department of Chemical Engineering: Visiting Professor January-June 1977; Department of Aerospace and Mechanical Engineering, Visiting Professor March-August 1982
- Ecole Polytechnic Federale de Lausanne, Department de Mathematiques: Visiting Scholar June-August 1984; Visiting Scholar June-August 1986; Visiting Professor June-July 1987; Visiting Professor January-March 1988; Visiting Professor June-August 1991
- Forschungszentrum Karlsruhe von Humboldt: Research Scholar 1994, 1996, 1999
- Ecole Supérieure de Physique et de Chimie Industriale: Visiting Professor April-May 2003
- University of California Santa Barbara, Department of Mechanical and Environmental Engineering February 2007
- University of California San Diego, Mechanical and Aerospace Engineering, February 2008, 2011, 2014
- California Institute of Technology, Department of Computing and Mathematical Sciences, March 2009, Sept. 2018 – April 2019
- University of Southern California, Department of Aeronautics and Mechanical Engineering, February 2010
- University of California Los Angeles, Department of Mechanical and Aerospace Engineering: Boelter Professor February/March 2012, February 2015

Selected Special Lectures

- Prince Distinguished Lecturer - Arizona State University 1982
- Stewartson Memorial Lecturer - London 1987
- Westinghouse Distinguished Lecturer - University of Michigan 1990
- Richard C. DiPrima Lecturer – Rensselaer Polytechnic Institute 1995
- L.S.G. Kovaszny Distinguished Lecturer – University of Houston 2000
- Chancellor’s Distinguished Lecturer – Louisiana State University 2000
- Ascher H. Shapiro Lecturer – Massachusetts Institute of Technology 2000
- S. S. Penner Lecturer - University of California San Diego 2000
- George K. Batchelor Lecturer - University of Cambridge 2003
- John Laufer Keynote Lecturer - University of Southern California 2010
- Boelter Lecturer - University of California Los Angeles 2012
- Arthur Newell Talbot Lecturer - University of Illinois 2013
- Lighthill (Inaugural) Lecturer - Imperial College 2014

Honors

- Pi Mu Epsilon 1962 Sigma Xi 1964
- Fellow, American Physical Society 1978
- Fluid Dynamics Prize, American Physical Society 1994 Member, National Academy of Engineering 1994
- Humboldt Research Award for Senior Research Scientists 1994 Member, American Academy of Arts and Sciences 1995
- Russell Severance Springer Professor - University of California Berkeley 1996
- G. I. Taylor Medal, Society of Engineering Sciences 2001 D.Sc. (honoris causa), University of Western Ontario 2001 Member, National Academy of Sciences 2004
- Commemorative Volume (647), Journal of Fluid Mechanics 2010 Member, Johns Hopkins Society of Scholars 2010
- Recipient, Royal Society of Engineering (U.K.) Distinguished Researcher Award 2014

Publications: Books

- The Theory of Solidification, 2001, 385 pages, Cambridge University Press, New York
- Frontiers of Fluid Mechanics, 1985 Eds. S. H. Davis and J. L. Lumley, Springer-Verlag.
- Interactive Dynamics of Convection and Solidification, 1992 Eds. S. H. Davis, H. E. Huppert, U. Müller and M. G. Worster, NATO ASI Series E, vol. 219, Kluwer
- Free Boundaries in Viscous Flows, 1994 Eds. R. A. Brown and S. H. Davis, IMA Volumes in Mathematics and Its Applications, vol. 61, Springer-Verlag

Publications: Other

1. 1963 *"Surface Elevation in Bénard cells"* Amer. Math. Soc. Notices 10, 496, ABSTRACT (coauthor L.A. Segel)
2. 1966 *"Inviscid Cone Flows with Surface Mass Transfer"* AIAA J. 4, 1830 - 1832 (co-author J. Aroesty)
3. 1967 *"Convection in a Box: Linear Theory"* J. Fluid Mech. 30, 465-478
4. 1968 *"Effects of Surface Curvature and property variation on cellular convection"* Phys. Fluids 11, 470 -476 (co-author L. A. Segel)
5. 1968 *"Convection in a box: On the dependence of preferred wave number upon the Rayleigh number at finite amplitude"* J. Fluid Mech. 32, 619 - 624
6. 1969 *"On the principle of exchange of stabilities"* Proc. Roy. Soc. 310A, 341 - 358
7. 1969 *"Buoyancy-surface tension instability by the method of energy"* J. Fluid Mech. 39, 347 - 359
8. 1969 *"On the possibility of subcritical instabilities"* Proc. IUTAM Symposium on the Instability of Continuous Systems (H. Liepholz, Ed.), Herrenalb, W. Germany, 222- 227
9. 1969 Comments on *"Thermal instability in fluids layers in the presence of horizontal and vertical temperature gradients"* J. Appl. Mech. 36, 906
10. 1970 *"Thermal instability with radiative transfer"* Phys. Fluids 13, 222 -226 (co-author C. Christophorides).
11. 1971 *"Finite amplitude instability of time-dependent flows"* J. Fluid Mech. 45, 33 -48.
12. 1971 *"Energy stability of the buoyancy boundary layer"* J. Fluid Mech. 47, 381 - 403 (co-author J. J. Dudis).
13. 1971 *"Energy stability of the Ekman boundary layer"* J. Fluid Mech. 47, 405 - 413 (co-author J. J. Dudis).
14. 1971 *"Energy stability of unsteady flows"* Proc. IUTAM Symposium on Unsteady Boundary Layers, (E. A. Eichelbrenner, Ed.), Quebec, Canada 1,206-227
15. 1972 *"On the stability of flows started from Rest"* Quart. J. Mech. Appl. Math. 25, 459 - 465.
16. 1972 *"The instability of Oscillatory Stokes Layers"* Studies in Appl. Math. 51, 239 - 252 (co-author C. von Kerczek).
17. 1973 *"A reformulation of energy stability theory"* Arch. Rat. Mech. Anal. 52, 112 - 117 (co-author C. von Kerczek).
18. 1974 *"Motion driven by surface-tension gradients in a tube lining"* J. Fluid Mech. 62, 737-751 (co-authors A. K. Liu and G. R. Sealy). 1974 Corrigenda 64, 829 -831.
19. 1974 *"A model of maternal blood flow in the placenta"* 27th ACEMB, Philadelphia, 210 (co-authors F. F. Erian, M.A. Yoshinaga and S. Corrsin).
20. 1974 *"Linear stability theory of oscillatory Stokes layers"* J. Fluid Mech. 62, 753 - 773 (co-author C. von Kerczek).
21. 1974 *"On the motion of a line common to three materials"* J. Fluid Mech. 65, 71 - 95 (co-author E. B. Dussan V.).
22. 1974 *"The slow sedimentation of a sphere in a centrifuge"* J. Fluid Mech. 68, 209 -234 (co-authors I. H. Herron, and F. P. Bretherton).
23. 1975 *"Influences of variable permeability and inertia on a model of maternal blood flow in the placenta"* 28th ACEMB, New Orleans, 434 (co-authors F. F. Erian and S. Corrsin)
24. 1975 *"Calculation of transition matrices"* AIAA J. 13, 1400 - 1403 (co-author C. Kerczek).
25. 1975 *"Apparent surface tension hysteresis of a dynamical system"* J. Coll. Interf. Sci. 51, 459 - 476 (co-author L. W. Horn).
26. 1976 *"The stability of time-periodic flows"* Ann. Rev. Fluid Mech. 8, 57 - 74.

Publications: Other, continued

27. 1976 *"The stability of a stratified, periodic boundary layer"* J. Fluid Mech. 75, 287 -303 (co-author C. von Kerczek).
28. 1976 *"Frequency dependence of pressure-volume (P-V) hysteresis and dynamic compliance in isolated dog lobes"* The Physiologist 19, 301 (co-authors W.A. Mitzner and J. B. Grotberg).
29. 1977 *"Viscous attenuation of mean drift in water waves"* J. Fluid Mech. 81, 63 - 84 (co-author A.-K. Liu).
30. 1977 *"Maternal placental blood flows: a model with velocity-dependent permeability"* J. Biomech. 10, 807 - 814 (co-authors F. F. Erian and S. Corrsin).
31. 1977 *"On bifurcating periodic solutions at low frequency"* Studies in Appl. Math. 57, 59 - 76 (co-author S. Rosenblat).
32. 1978 *"Analysis for the prediction of non-equilibrium phase formation in rapid conduction cooling"* Mat. Sci. and Eng. 32, 199 -209 (co-author J. A. Dantzig).
33. 1979 *"Bifurcation from infinity"* SIAM J. Appl. Math. 37, 1- 19 (co-author S. Rosenblat).
34. 1980 *"Energy stability theory for free surface problems: buoyancy- thermocapillary layers"* J. Fluid Mech. 98, 527 - 553 (co-author G. M. Homsy).
35. 1980 *"Fluid-dynamic flapping of a collapsible channel: sound generation and flowlimitation"* J. Biomech. 13, 219 - 230 (co-author J. B. Grotberg).
36. 1980 *"Moving contact-lines and rivulet instabilities. Part I. The static rivulet"* J. Fluid Mech. 98, 225 - 242.
37. 1980 *"A quasi-periodic Mathieu-Hill equation"* SIAM J. Appl. Math. 38, 139 -155 (co-author S. Rosenblat).
38. 1980 *"Energy stability theory of decelerating swirl flows"* Phys. Fluids 23, 432 - 437 (co-author G. P. Neitzel).
39. 1980 *"Frequency dependence of pressure-volume loops in isolated dog lobes"* J. Biomech. 13, 905 - 912 (co-authors J. B. Grotberg and W. A. Mitzner).
40. 1981 *"Centrifugal instabilities during spin-down to rest in finite cylinders. Numerical experiments"* J. Fluid Mech. 102, 329 - 352 (co-author G. P. Neitzel).
41. 1981 *"Moving contact-lines and rivulet instabilities. Part II. Long waves on a dynamic rivulet"* J. Fluid Mech. 107, 261 - 280 (co-author R. H. Weiland).
42. 1981 *"Eigenvalues of the Rayleigh-Bénard and Marangoni problems"* Phys. Fluids 24, 2115 - 2117 (co-authors S. Rosenblat and G. M. Homsy).
43. 1982 *"Stability and bifurcation in a modulated Burgers system"* Quart. Appl. Math. 39, 467 - 477 (co-author W. E. Olmstead).
44. 1982 *"Nonlinear Marangoni convection in bounded layers. Part I. Rectangular containers"* J. Fluid Mech. 120, 91 - 122 (co-authors S. Rosenblat and G. M. Homsy)
45. 1982 *"Nonlinear Marangoni convection in bounded layers. Part II. Rectangular cylindrical containers"* J. Fluid Mech. 120, 123 - 138) (co-authors S. Rosenblat G.M. Homsy).
46. 1982 *"Steady thermocapillary flows in two-dimensional slots"* J. Fluid Mech. 121, 163 - 186 (co-author A. K. Sen).
47. 1982 *"Quasiperiodic bifurcation in nonlinearly-coupled oscillators near a point of strong resonance"* SIAM J. Appl. Math. 42, 1345 - 1368 (co-author P. H. Steen).
48. 1982 *"The instability of sheared liquid layers"* J. Fluid Mech. 121, 187 - 206 (co-author M.K. Smith).
49. 1982 *"One-dimensional liquid fibers"* J. Rheol. 26, 331 -345 (co-author W. W. Schultz).
50. 1982 *"Nonlinear theory of film rupture"* J. Coll. Interf. Sci. 90, 220 - 228 (co-author M.B. Williams).

Publications: Other, continued

51. 1983 *"Rupture of thin liquid films"* Waves on Fluid Interfaces, 291- 302 (R. E. Meyer, Ed., Proc. Symp. Math. Res. Center., Univ. of Wisconsin).
52. 1983 *"Multiple solutions and hysteresis in steady parallel viscous flows"* Phys. Fluids 26, 1177 - 1182 (co-authors G. A. Kriegsmann, R. L. Laurence and S. Rosenblat).
53. 1983 *"Instabilities of dynamic thermocapillary liquid layers. Part 1. Convective instabilities"* J. Fluid Mech. 132, 119 - 144 (co-author M. K. Smith).
54. 1983 *"Instabilities of dynamic thermocapillary liquid layers. Part 2. Surface-wave instabilities"* J. Fluid Mech. 132, 145 - 162 (co-author M. K. Smith).
55. 1983 *"Liquid bridges with thermocapillarity"* Phys. Fluids 26, 2880 - 2886 (co-author J.-J. Xu).
56. 1983 *"Viscous thermocapillary convection at high Marangoni number"* J. Fluid Mech. 135, 175 - 188 (co-author S. J. Cowley).
57. 1983 *"Contact-line problems in fluid mechanics"* J. Appl. Mech. 50, 977 - 162.
58. 1984 *"Effects of boundary conditions on the stability of slender viscous fibers"* J. Appl. Mech. 51, 1- 5 (co-author W. W. Schultz).
59. 1984 *"On the stability of the decelerating laminar boundary layer"* J. Fluid Mech. 138, 297 - 323 (co-authors M. Gad-el-Hak, J. T. McMurray and S. A. Orszag).
60. 1984 *"Bénard convection with time periodic heating"* Phys. Fluids 27, 796 - 803 (co-authors M.N. Roppo and S. Rosenblat).
61. 1984 *"Convective thermocapillary instabilities in liquid bridges"* Phys. Fluids 27, 1102 - 1107 (co-author J.-J. Xu).
62. 1984 *"Pattern selection in single-component systems coupling Bénard convection and solidification"* J. Fluid Mech. 144, 133-151 (co-authors U. Müller and C. Dietsche).
63. 1984 *"How do liquid drops spread?"* Frontiers of Fluid Mechanics, 171-183 (S. H. Davis and J. L. Lumley, Eds.) Springer Verlag, Heidelberg (co-author S. Rosenblat).
64. 1984 *"Nonlinear stability of Newtonian fibers"* J. Fluid Mech. 149, 455 - 475 (co-authors W. W. Schultz, A. Zebib and Y. Lee).
65. 1984 *"Meandering of water rivulets"* AIChE J. 30, 263 -267 (co-author J. B. Culkin).
66. 1985 *"On the asymptotic solutions of boundary-value problems defined on thin domains"* Quart. Appl. Math. 42, 403 - 409 (co-author G. W. Young).
67. 1985 *"Convective fluid flow and diagenetic patterns in domed sheets"* Amer. J. Sci. 285, 207 - 223 (co-authors S. Rosenblat, J. R. Wood and T. A. Hewett).
68. 1985 *"Instability of capillary jets with thermocapillarity"* J. Fluid Mech. 161, 1 - 25 (co-author J.-J. Xu).
69. 1986 *"Bifurcation with memory"* SIAM J. Appl. Math. 46, 171 - 188 (co-authors W. E. Olmstead, S. Rosenblat and W. L. Kath).
70. 1986 *"Secondary bifurcation in convective shells"* Physical Rev. 33A, 4326 - 4333 (co-author P. Metzener).
71. 1986 *"Directional solidification with buoyancy in systems with small segregation coefficient"* Phys. Rev. 34B, 3388 - 3396 (co-author G. W. Young).
72. 1986 *"Stability in systems with moving contact lines"* J. Fluid Mech. 173, 115 - 130 (co-author E. B. Dussan V.).
73. 1986 *"Stability criteria for swirl flows with interfaces"* Z. Angew. Math. Phys. 37, 597 - 607 (co-author M. A. Boudourides).

Publications: Other, continued

74. 1986 *"On the instability of heated film flow with variable surface tension"* Heat Transfer 1986 (Proc. VIII-th Intern. Heat Trans. Conf.) (C. L. Tien, V. P. Carey and J. K. Ferrell, Eds.) 4, 1937 - 1942 (co-authors R. E. Kelly and D. A. Goussis).
75. 1987 *"Coupled Lorenz oscillators"* Physica D 24, 226 - 242 (co-author M. N. Roppo).
76. 1987 *"A plate oscillating across a liquid interface: Effects of contact-angle hysteresis"* J. Fluid Mech. 174, 327 - 356 (co-author G. W. Young).
77. 1987 *"Rivulet instabilities"* J. Fluid Mech. 176, 1 - 31 (co-author G. W. Young).
78. 1987 *"Thermocapillary instabilities"* Ann. Rev. Fluid Mech. 19, 403 - 435.
79. 1987 *"Anisotropic interface kinetics and tilted cells in unidirectional solidification"* J. Crystal Growth 83, 560 - 571 (co-authors G. W. Young and K. E. Brattkus).
80. 1987 *"Instabilities of a liquid film flowing down a slightly inclined plane"* Phys. Fluids 30, 983 - 989 (co-authors J. M. Floryan and R. E. Kelly).
81. 1987 *"Stability of thin films"* Physicochem. Hydrodyn. 9, 5- 7 (co-author S. G. Bankoff)
82. 1987 *"Directional solidification in an imperfect furnace"* Physicochem. Hydrodyn. 9, 7 - 14 (co-author K. Brattkus).
83. 1988 *"Bifurcations of convection states in toroidal shells"* SIAM J. Appl. Math. 48, 749 - 769 (co-author P. Metzener).
84. 1988 *"Flow-induced morphological instabilities: The rotating disc"* J. Crystal Growth 87, 385 - 396 (co-author K. Brattkus).
85. 1988 *"Flow-induced morphological instabilities: Stagnation-point flows"* J. Crystal Growth 89, 423 - 427 (co-author K. Brattkus).
86. 1988 *"Nonlinear stability of evaporating/condensing liquid films"* J. Fluid Mech. 195, 463 - 494 (co-authors J. P. Buelbach and S. G. Bankoff).
87. 1988 *"Crystal growing from the melt"* Interdisciplinary Issues in Materials Processing and Manufacturing, ASME, 2, 593 -598.
88. 1988 *"Directional solidification with heat losses"* J. Crystal Growth 91, 538 - 556 (co-author K. Brattkus).
89. 1988 *"Cellular growth near absolute stability"* Phys. Rev. 38B, 11452 - 11460 (co-author K. Brattkus).
90. 1989 *"Modulated stagnation-point flow and steady streaming"* J. Fluid Mech. 198, 543 - 555 (co-author G. J. Merchant).
91. 1989 *"Morphological instabilities in directional solidification of a binary alloy: End effects"* SIAM J. Appl. Math. 49, 152 - 164 (co-author G. W. Young).
92. 1989 *"Similarity solutions for phase-change problems"* Met. Trans. 20A, 225 - 235 (co-author D.J. Canright).
93. 1989 *"An annulus model of time-space transitions in Bénard convection"* Physica D 36, 235 - 258 (co-author P. Metzener).
94. 1989 *"Flow -induced morphological instabilities due to temporally-modulated stagnation-point flow"* J. Crystal Growth 96, 737 - 746 (co-author G. J. Merchant).
95. 1989 *"Hydrodynamic stability of the melt during the solidification of a binary alloy with small segregation coefficient"* Physica D 39, 231 - 238 (co-author D. S. Riley).
96. 1989 *"Eckhaus instabilities in generalized Landau-Ginzburg equations"* Phys. Fluids 1A, 1745 - 1747 (co-author D. S. Riley).
97. 1989 *"Shallow cells in directional solidification"* Phys. Rev. Lett. 63, 573 - 575 (co-author J. Merchant).

Publications: Other, continued

98. 1989 *"Directional solidification near minimum $c\infty$: Two-dimensional isolas and multiple solutions"* Phys. Rev. 40B, 11140 - 11152 (co-author G. J. Merchant).
99. 1990 *"Hydrodynamic interactions in directional solidification"* J. Fluid Mech. 212, 241 - 252.
100. 1990 *"Steady thermocapillary flows of thin liquid layers. I. Theory"* Phys. Fluids 2A, 313 - 321 (co-authors M. J. Tan and S. G. Bankoff).
101. 1990 *"Steady thermocapillary flows of thin liquid layers. II. Experiment"* Phys. Fluids 2A, 322 - 333 (co-authors J. P. Burelbach and S. G. Bankoff).
102. 1990 *"Long-wave morphological instabilities in the directional solidification of a dilute binary mixture"* SIAM J. Appl. Math. 50, 420 - 436 (co-author D. S. Riley).
103. 1990 *"Long-wave interactions in morphological and convective instabilities"* IMA J. Appl. Math. 45, 267 - 285 (co-author D. S. Riley).
104. 1990 *"Morphological instability in rapid directional solidification"* Acta metall. mater. 38, 2683 - 2693 (co-author G. J. Merchant).
105. 1991 *"The linear stability of plane stagnation-point flow against general disturbances"* Quart. J. Mech. Appl. Math. 44, 135 - 146 (co-author K. Brattkus).
106. 1991 *"Non-isothermal spreading of liquid drops on horizontal plates"* J. Fluid Mech. 229, 365 - 388 (co-author P. Ehrhard).
107. 1991 *"On falling-film instabilities and wave breaking"* Phys. Fluids 3A, 231 - 232 (co-authors S. W. Joo and S. G. Bankoff).
108. 1991 *"Oscillatory instabilities in rapid directional solidification: bifurcation theory"* J. Crystal Growth 112, 670 - 690 (co-author R. J. Braun).
109. 1991 *"The dynamics and stability of thin liquid films during spin coating. I. Films with constant rates of evaporation or absorption"* J. Appl. Phys. 70, 5258 - 5266 (co-authors B. Reisfeld and S. G. Bankoff).
110. 1991 *"The dynamics and stability of thin liquid films during spin coating. II. Films with unit-order and large Peclet numbers"* J. Appl. Phys. 70, 5267 - 5277 (co-authors B. Reisfeld and S. G. Bankoff).
111. 1991 *"Long-wave instabilities of heated falling films: two-dimensional theory of uniform layers"* J. Fluid Mech. 230, 117 - 146 (co-authors S. W. Joo and S. G. Bankoff).
112. 1991 *"Buoyancy effects on a growing, isolated dendrite"* J. Crystal Growth 114, 153, 185 (co-author D. Canright).
113. 1991 *"Morphological instability in epitaxially-strained dislocation-free solid films"* Phys. Rev. Lett. 67, 3696 - 3699 (co-authors B. J. Spencer and P. W. Voorhees).
114. 1992 *"Bénard convection in binary mixtures with Soret effects and solidification"* J. Fluid Mech. 238, 657 - 682 (co-authors G. Zimmermann and U. Müller). Corrigendum: J. Fluid Mech. 254, 720.
115. 1992 *"Growth from a hypercooled melt near absolute stability"* Phys. Rev. 45A, 719 - 7201 (co-author A. Umantsev).
116. 1992 *"The effect of compositionally-generated elastic stresses on morphological instability during directional solidification"* Acta metall. mater. 40, 1599 - 1616 (co-authors B. J. Spencer, P. W. Voorhees and G. B. McFadden).
117. 1992 *"Pulsatile instability in rapid directional solidification: Strongly nonlinear analysis"*
118. 1992 SIAM J. Appl. Math. 52, 1279 - 1302 (co-authors G. J. Merchant, R. J. Braun and K. Brattkus).
119. 1992 *"Instabilities of three-dimensional viscous falling films"* J. Fluid Mech. 242, 529 - 547 (co-author S. W. Joo).

Publications: Other, continued

120. 1992 *"Irregular waves on viscous falling films"* Chem. Eng. Comm. 118, 111 - 123 (co- author S. W. Joo).
121. 1992 *"Pulsatile and cellular mode interaction in rapid directional solidification"* Phys. Rev. 45B, 7002 - 7016 (co-authors R. J. Braun and G. J. Merchant).
122. 1992 *"Cellular instability in rapid directional solidification: Bifurcation theory"* Acta metall. mater. 40, 2617 - 2628 (co-author R. J. Braun).
123. 1993 *"Two- and three-dimensional instabilities and rupture of thin liquid films falling on heated inclined plates"* Nuclear Engineering and Design 141, 225 -236 (co-authors S.W. Joo and S. G. Bankoff).
124. 1993 *"Effects of flow on morphological stability"* HANDBOOK OF CRYSTAL GROWTH1, 859 - 897 (D.T.J. Hurle, Ed.) North Holland.
125. 1993 *"Thermal effects in rapid solidification: linear theory"* Acta metall. mater. 41, 2025 - 2043 (co-author D. A. Huntley).
126. 1993 *"Thermocapillary breakdown of falling liquid films at high Reynolds numbers"* J. Heat Mass Trans. 36, 1875 - 1881 (co-author M. S. Bohn).
127. 1993 *"Nonlinear rupture of free films"* Phys. Fluids a 5, 1117 - 1122 (co- author T. Erneux)
128. 1993 *"Morphological instability in epitaxially-strained dislocation free solid films: linear stability theory"* J. Appl. Phys. 73, 4955 - 4970 (co-authors B. J. Spencer and P.W. Voorhees).
129. 1993 *"Morphological instability in epitaxially-strained dislocation-free solid films: nonlinear evolution"* Phys. Rev. B 47, 9760 - 1777 (co-authors B. J. Spencer and P.W. Voorhees).
130. 1993 *"Thermal effects in rapid directional solidification: weakly-nonlinear analysis of oscillatory instabilities"* J. Crystal Growth 132, 141- 165 (co-author D. A. Huntley).
131. 1993 *"Two-fluid viscous flow in a corner"* J. Fluid Mech. 257, 1 - 31 (co-author D. M. Anderson).
132. 1994 *"Local fluid flow and heat transfer near contact lines"* J. Fluid Mech. 268, 231 - 265 (co-author D. M. Anderson). 1998 Addendum 371, 377 -378.
133. 1994 *"Fluid flow, heat transfer, and solidification near tri-junctions"* J. Crystal Growth 142, 245 - 252 (co-author D. M. Anderson)
134. 1994 *"The influence of oscillatory and steady shears on interfacial stability during directional solidification"* J. Crystal Growth 143, 317 - 333 (co-author T. P. Schulze).
135. 1994 *"Slip over rough and coated surfaces"* J. Fluid Mech. 273, 125 - 139 (co-author M.J. Miksis)
136. 1994 *"Nonlinear long-wave stability of superposed fluids in an inclined channel"* J. Fluid Mech. 277, 55 - 83 (co-authors B. S. Tilley and S. G. Bankoff).
137. 1994 *"Linear stability theory of two-layer fluid flow in an inclined channel"* Phys. Fluids 6, 3906 - 39-22 (co-authors B. S. Tilley and S. G. Bankoff).
138. 1995 *"On long-wave morphological instabilities in directional solidification"* Euro. J. Appl. Math. 6, 639 -652 (co-authors A. C. Skeldon, G. B. McFadden, M. D. Impey, D.S. Riley, K. A. Cliffe and A. A. Wheeler).
139. 1995 *"Shear stabilization of morphological instability during directional solidification"* J. Crystal Growth 149, 253 - 265 (co-author T. P. Schulze).
140. 1995 *"The spreading of volatile liquid drops on heated surfaces"* Phys. Fluids 7, 248 - 265 (co-author D. M. Anderson).
141. 1996 *"Some a-priori estimates for a singular evolution equation arising in thin film dynamics"* SIAM J. Math. Analysis 27, 638 -660 (co-authors E. DiBenedetto and D. Diller).
142. 1996 *"Oscillatory and cellular mode coupling in rapid directional solidification"* Phys. Rev. B53, 3132 - 3144 (co-author D. A. Huntley).

Publications: Other, continued

- 143.** 1996 *"Shear and interfacial instabilities of oil-water flow in an inclined channel"* Chem. Eng. Comm. 141-142, 41 - 49 (co-authors B. S. Tilley and S. G. Bankoff).
- 144.** 1996 *"A mechanism for rivulet formation in heated falling films"* J. Fluid Mech. 321, 279 - 298 (co-authors S. W. Joo and S. G. Bankoff).
- 145.** 1996 *"The case for a dynamic contact angle in containerless solidification"* J. Crystal Growth 163, 329 - 338 (co-authors D. M. Anderson and M. G. Worster).
- 146.** 1996 *"Shear stabilization of a solidifying front: Weakly nonlinear analysis in the long-wave limit"* Phys. Fluids 8, 2319 - 2336 (co-author T. P. Schulze).
- 147.** 1996 *"Effects of flow on morphological stability during directional solidification"* Met. Mater. Trans. 27, 583 - 593 (co-author T. P. Schulze).
- 148.** 1996 *"Capillary instabilities in solid thin films: Lines"* J. Appl. Phys. 79, 7604 - 7611 (co-authors M. S. McCallum, P. W. Voorhees, M. J. Miksis and H. Wong).
- 149.** 1996 *"Thermal singularities in film rupture"* Phys. Fluids 8, 3433 - 3435 (co-authors A. Oron and S. G. Bankoff).
- 150.** 1996 *"Pattern selection with anisotropy during directional solidification"* Phil. Trans. Roy. Soc. A354, 2915 - 2949 (co-author R. Hoyle and G. B. McFadden).
- 151.** 1997 *"Nonlinear instability of a vertical falling film under imposed time-periodic perturbations"* Phys. Rev. E55, 374 - 380 (co-authors L. A. Dávalos-Orozco and S.G. Bankoff).
- 152.** 1997 *"Capillary driven motion of solid film wedges"* Acta mater. 45, 2477 - 2484 (co-authors H. Wong, M. J. Miksis and P. W. Voorhees).
- 153.** 1997 *"Long-scale evolution of thin liquid films,"* Rev. Mod. Phys. 69, 931- 980 (co-authors A. Oron and S. G. Bankoff).
- 154.** 1997 *"Capillary instabilities of a catenoidal hole in a solid film"* J. Appl. Phys. 81, 6091- 6099 (co-authors H. Wong, P. W. Voorhees and M. J. Miksis).
- 155.** 1997 *"On symmetric long-wave patterns in two-layer flows"* Physica D 108, 291 - 314 (co-author B. S. Tilley).
- 156.** 1998 *"Effect of anisotropy on morphological instability in the freezing of a hypercooled melt"* Physica D 116, 363 - 391 (co-author A. A. Golovin).
- 157.** 1998 *"Flow-induced changes of morphological instability in directional solidification: Localized morphologies"* J. Crystal Growth 186, 629 - 647 (co-author L. Bühler).
- 158.** 1998 *"Singularities on viscous interfaces"* Proc. IUTAM Conf. on "Non-Linear Singularities in Deformation and Flow", 111 - 118, Haifa (Eds. D. Durban and J.R.A. Pearson), Kluwer Academic Publ.
- 159.** 1998 *"Universal pinch off of rods by capillary-driven surface diffusion"* Scripta Mater. 39, 55 - 60 (co-authors H. Wong, M. J. Miksis and P. W. Voorhees).
- 160.** 1998 *"Localized morphologies with long-scale forcing"* Phys. Rev. Lett. 80, 4414 -4417 (co-authors A. Class and L. Bühler).
- 161.** 1998 *"A convective Cahn-Hilliard model for the formation of facets and corners in crystal growth"* Physica D 122, 202 - 230 (co-authors A. A. Golovin and A. Nepomnyashchy).
- 162.** 1999 *"Spreading and imbibition of viscous liquid on a porous base"* Phys. Fluids 11, 48 - 57 (co-author L. M. Hocking).
- 163.** 1999 *"The unsteady expansion and contraction of a long two-dimensional vapor bubble between parallel plates"* J. Fluid Mech. 391, 1 - 27 (co-authors S.K. Wilson and S.G. Bankoff).
- 164.** 1999 *"Steps, kinetic anisotropy, and long waves"* Phys. Rev E 59, 5629 –5640 H.P. Grimm and G. B. McFadden).

Publications: Other, continued

165. 1999 *"Modeling the formation of facets and corners using a convective Cahn-Hilliard model"* J. Crystal Growth 198/199, 1245 - 1250 (co-authors A. A. Golovin and A. Nepomnyashchy).
166. 1999 *"Model for facetting in a kinetically controlled crystal growth"* Phys. Rev E. 59, 803 - 825 (co-authors A. A. Golovin and A. Nepomnyashchy).
167. 1999 *"Three-dimensional effects in directional solidification in Hele-Shaw cells"* Proc. Roy. Soc. A 455, 3589 - 3616 (co-author V. S. Ajaev).
168. 1999 *"Morphological instability of a whisker"* Proc. Roy. Soc. A 455, 3825 - 3844 (co-authors D.J. Kirill, M. J. Miksis and P. W. Voorhees).
169. 1999 *"Directional solidification of a binary alloy into a cellular convective flow: Localized morphologies"* J. Fluid Mech. 395, 253 - 270 (co-author Y.-J. Chen).
170. 2000 *"Nonlinear dynamics in horizontal film boiling"* J. Fluid Mech. 402, 163 - 194 (co-authors C. H. Panzarella and S. G. Bankoff).
171. 2000 *"Effective and microscopic angles in thin-film dynamics"* Eur. J. Appl. Math. 11, 181 - 201 (co-authors M. Bertsch, R. Dal Passo and L. Giacomelli).
172. 2000 *"Periodic mass shedding of a retracting solid film step"* Acta mater. 48, 1719- 1728 (co-authors H. Wong, P. W. Voorhees and M. J. Miksis).
173. 2000 *"A simple hydrodynamic model for transition boiling"* J. Fluid Mech. 402, 195 - 210 (co-authors S. W. Joo and S. G. Bankoff).
174. 2000 *"Shear localization with an Arrhenius flow law"* SIAM J. Appl. Math. 60, 1867 - 1886 (co-authors R. P. Flemming and W. E. Olmstead).
175. 2000 *"Spreading and imbibition of a viscous liquid on a porous base. Part II"* Phys. Fluids 12, 1646 - 1655 (co-author L. M. Hocking).
176. 2000 *"Flow-induced patterns in directional solidification: Localized morphologies in three-dimensional flows"* J. Fluid Mech. 421, 369 - 380 (co-author Y.-J. Chen).
177. 2000 *"Interfacial fluid dynamics"* in *Perspectives in Fluid Mechanics* (Eds. G. K. Batchelor, H. K. Moffatt and M. G. Worster). 1-51, Cambridge University Press.
178. 2000 *"Three-dimensional effects in directional solidification in Hele-Shaw cells: Nonlinear evolution and pattern selection"* Phys. Rev. E 61, 1275 (co-author V.S. Ajaev).
179. 2001 *"On a slender dry patch in a liquid film draining under gravity down an inclined plane"* Euro. J. Appl. Math. 12, 233 - 252 (co-authors S. K. Wilson and B. R. Duffy).
180. 2001 *"Unsteady Stokes flow near an oscillating, heated contact line"* J. Fluid Mech. 438, 339 - 362 (co-authors B. S. Tilley and S. G. Bankoff).
181. 2001 *"Convective Cahn-Hilliard models: From coarsening to roughening"* Phys. Rev. Lett. 86, 1550 - 1553 (co-authors A.A. Golovin, A. Nepomnyashchy, and M. Zaks).
182. 2001 *"Do stresses modify wetting angles?"* Acta mater. 49, 1005 - 1007 (co-author (D.J. Srolovitz)).
183. 2001 *"Viscous beads on a thin vertical fibre"* J. Fluid Mech. 429, 381 - 390 (co-authors I. L. Kliakhandler and S. G. Bankoff).
184. 2001 *"Instability of triple junctions in lamellar eutectic growth"* Acta mater. 49, 1363-1372 (co-author Y.-J. Chen).
185. 2002 *"The effect of heat conduction in the vapor on the dynamics of downflowing condensate"* Phys. Fluids 14, 150 - 157 (co-authors I. L. Kliakhandler and S. G. Bankoff).
186. 2002 *"Inertial effects in time-dependent motion of thin films and drops"* J. Fluid Mech. 467, 1 - 17 (co-author L. M. Hocking).

Publications: Other, continued

187. 2002 *"Dynamics and instability of triple junctions of solidifying eutectics: flow-modified morphologies"* Acta mater. 50, 2269 - 2284 (co-author Y.-J. Chen).
188. 2002 *"Morphological instability of pores and tubules"* Interface Free Bound. 4, 1 - 24 (co-authors D. J. Kirill, M. J. Miksis and P.W. Voorhees).
189. 2002 *"Instability of subcooled boiling films on a vertical wall"* Int. J. Heat Mass Tran. 45, 4937 - 4948 (co-authors B. Rubinstein and S. G. Bankoff).
190. 2003 *"Coarsening dynamics for the convective Cahn-Hilliard equation"* Physica D 178, 127 - 148 (co-authors S. J. Watson, F. Otto and B. Rubinstein).
191. 2003 *"Boundary-integral simulations of containerless solidification"* J. Comp. Phys. 187, 492 - 503 (co-author V. A. Ajaev).
192. 2003 *"Stanley Corrsin: 1920-1986"*, Ann. Rev. Fluid Mech. 35, 1 - 10 (co-author J. L. Lumley).
193. 2003 *"Self-organization of quantum dots in epitaxially-strained solid films"* Phys. Rev. E. 68, 056203: 1-11 (co-authors A. A. Golovin and P.W. Voorhees).
194. 2003 *"Faceting of a growing crystal surface by surface diffusion"* Phys. Rev. E 67, 021606 : 1-16 (co-authors T. V. Savina, A. A. Golovin, A. A. Nepomnyashchy and P.W. Voorhees).
195. 2003 *"The effect of tri-junction conditions in droplet solidification"* J. Crystal Growth 264, 452 - 462 (co-author V. S. Ajaev).
196. 2004 *"The effect of surface stress and wetting layers on morphological instability in epitaxially strained films"* J. Appl. Phys. 96, 3127 - 3133 (co-authors T. V. Savina P.W. Voorhees).
197. 2004 *"Faceting instability in the presence of wetting interactions: A mechanism for the formation of quantum dots"* Phys. Rev. B 70, 235342: 1-11 (co-authors T.V. Savina and A. A. Golovin).
198. 2005 *"A new law for thinning in foam dynamics"* J. Fluid Mech. 534, 227 - 236 L.N. Brush).
199. 2006 *"Encapsulation of particles and bubbles by a solidification front"* J. Fluid Mech. 560, 415 - 436 (co-authors M.S. Park and A.A. Golovin).
200. 2006 *"Rupture of thin films with resonant patterning"* J. Coll. Interf. Sci. 303, 532 - 545 (co-authors J.C. Kao and A.A. Golovin).
201. 2006 *"Editorial: JFM at 50"* J. Fluid Mech. 554, 1 (co-author T.J. Pedley).
202. 2007 *"Convection in a mushy zone forced by sidewall heat losses"* Met. Mat. Trans. A 38, 1069 - 1079 (co-authors S.M. Roper and P.W. Voorhees).
203. 2007 *"Steady growth of nanowires via the vapor-liquid-solid method"* J. Appl. Phys. 102, 034304: 1-7 (co-authors S.M. Roper, P.W. Voorhees, A.A. Golovin, and M. Weiss).
204. 2007 *"Intellectual Diversity in Mathematics"* SIAM News January/February 40, #1.
205. 2007 *"Self-assembly of quantum dots in a thin epitaxial film wetting an elastic substrate"* Phys. Rev. B. 75, 205312: 1-11 (co-authors M.S. Levine, A.A. Golovin, and P.W. Voorhees).
206. 2008 *"An analysis of convection in a mushy layer with a deformable, permeable interface"* J. Fluid Mech. 596, 333 - 352 (co-authors S.M. Roper and P.W. Voorhees).
207. 2008 *"Faceted interfaces in directional solidification"* J. Crystal Growth 310, 414 - 427 (co-authors S.A. Norris, P.W. Voorhees, and S.J. Watson).
208. 2008 *"Step-flow growth of a nanowire in the vapor-liquid-solid and vapor-solid-solid processes"* J. Appl. Physics 104, #074301: 1-11 (co-authors A.A. Golovin and P.W. Voorhees).
209. 2008 *"Solidification of free liquid films"* J. Fluid Mech. 617, 87 - 106 (co-author A.M. Anderson)

Publications: Other, continued

210. 2009 *"Particle capture in binary solidification"* J. Fluid Mech. 625, 299 - 320 (co-author J.T.C.Kao and A.A. Golovin).
211. 2010 *"Step-bunching in the absence of an Erlich-Schwoebel barrier during nanowire growth"* J. Appl.Phys. 107, #024308: 1-4 (co-authors A.A.Golovin and P.W.Voorhees).
212. 2010 *"Foam mechanics: spontaneous rupture of thinning liquid films with Plateau borders"* J. Fluid Mech. 658, 63 - 88 (co-authors A.M.Anderson and L.N.Brush).
213. 2010 *"Suppressing van der Waals driven rupture through shear"* J.Fluid Mech. 661, 522 - 539 (co-authors M.J. Davis and M.B. Gratton).
214. 2010 *"Radius selection and droplet unpinning in VLS-grown nanowires"* J. Appl.Phys. 107, #114320: 1-7 (co-authors S.M. Roper, A.M. Anderson and P.W. Voorhees).
215. 2011 *"Localization of convection in mushy layers by weak background flow"* J.Fluid Mech. 675, 518 -528 (co-authors S.M.Roper and P.W.Voorhees).
216. 2011 *"Liquid droplet dynamics and complex morphologies in VLS growth"* J. Mater. Res. 26, 2186 - 2198 (co-authors E.J. Schwalbach, P.W. Voorhees, D. Wheeler, and J.A .Warren).
217. 2012 *"Stability and topological transformations of liquid drops on vapor-liquid-solid- nanowires"* J.Appl.Phys. 111, 024302; doi 1063/1.3676451: 1-10 (co-authors E.J.Schwalbach, P.W.Voorhees, J.A.Warren, and D. Wheeler)
218. 2012 *"Moving boundary problems governed by anomalous diffusion"* Proc. Roy. Soc. Adoi: 10.1098/rspa. 2012.170:3348 - 3369 (co-authors C.J. Vogl and M.J. Miksis).
219. 2012 *"Anomalous diffusion models in the presence of a moving interface"* Interf. & Free Bound. 15, 181 - 202 (co-authors C.A. Gruber, C.J. Vogl, and M.J. Miksis).
220. 2012 *"Fluid flow beneath a semi-permeable membrane during drying processes"* Phys. Rev. E 85016330: 1-17 (co-authors M.J. Blount and M.J. Miksis).
221. 2012 *"Dynamics and stability of metallic foams: Network modelling"* J. Rheol. 56, 543 - 574 (co-author P.S. Stewart).
222. 2012 *"The equilibria of vesicles adhered to substrates by short-range potentials"* Proc. Roy.Soc.A 469, 3348: 1-22 (co-authors M.J. Blount and M.J. Miksis).
223. 2013 *"Local effects of gravity on foams"* J. Fluid Mech. 737, 1 - 18 (co-authors M.J. Davis and P.S. Stewart).
224. 2013 *"Self-similar coalescence of clean foams"* J. Fluid Mech.722, 645 - 664 (co-author P.S. Stewart).
225. 2013 *"Droplet spreading: theory and experiment"* Comte Renduz Phys. 14, 629 - 635 (co- author M.J. Davis).
226. 2013 *"Hydrodynamic theory of liquid slippage on a solid substrate near a moving contact line"* Phys. Rev. Lett. 110, 234503: 1-5 (co-author E. Kirkinis).
227. 2013 *"Viscous Rayleigh-Taylor instability in aqueous foams"* Coll. & Surf. A: Physicochem. Eng. Aspects 436, 898 - 905 (co-authors P.S. Stewart and S. Hilgenfeldt).
228. 2013 *"Nonaxisymmetric droplet unpinning in vapor-liquid-solid-grown nanowires"* J. Appl. Phys. 114, 114305: 1-9 (co-authors S. Muralidharan and P.W. Voorhees).
229. 2014 *"The effect of glass-forming sugars on vesicle morphology and water distribution during drying"* J. Royal Soc. Interf. 11 20140646: 1013 (co-authors C. Vogl, M.J. Miksis, and D. Salac)
230. 2014 *"Moffatt vortices induced by the motion of a contact line"* J. Fluid Mech. 746, R3, doi: 10.1017/jfm 2014.162: 1-8. (Co-author E. Kirkinis).
231. 2014 *"Spreading and arrest of a molten liquid on cold substrates"* Langmuir 30, 10151 DOI: 10.1021 /la5017998, 1015 -10155 (co-authors F.Tavakoli, and H.P. Kavehpour).

Publications: Other, continued

- 232.** 2015 *"Vortex flows impart chirality-specific lift forces"* Nature Comm. 6, #5640, doi: 10.1038/ncomms6640: 1-8 (co-authors (T.M. Hermans, K.J.M. Bishop, P.S. Stewart, and B.A. Grzybowski).
- 233.** 2015 *"Freezing of supercooled water drops on cold solid substrates: initiation and mechanism"* J. Coatings Tech.Res. 12, 869 - 875 (co-authors F. Tavakoli, and H. P. Kavehpour).
- 234.** 2015 *"Thin-film flow beneath a vesicle during adhesion processes"* Procedia IUTAM 16, 33 - 40 (co-authors M.J. Blount and M.J. Miksis).
- 235.** 2015 *"Microstructural effects in aqueous foam fracture"* J. Fluid Mech. 785, 425 - 461 (co-authors P.S. Stewart and S. Hilgenfeldt).
- 236.** 2015 *"Stabilization mechanisms in the evolution of thin liquid films"* Proc.Roy. A 471 20150651; DOI: 10:1098/rspa 2015.0651: 1-19 (co-author E. Kirkinis)
- 237.** 2016 *"Mechanisms of morphological evolution on faceted core-shell nanowire surfaces"* J. Mech. Phys. Solids 91, 73 - 93 (co-authors Q. Zhang, J.-N. Aqa and P.W. Voorhees).
- 238.** 2016 *"Forced versus spontaneous spreading of liquids"* Langmuir 32, 10153- 10158 DOI:10.1021/acs.langmuir.6b00747 (co-authors A.M. Karim and H.P. Kavehpour).
- 239.** 2016 *"Elastic membranes in confinement"* J.Roy Soc.Interf. DOI: 10. 1098/rsif.2016.0408 (co-authors J.B. Bostwick and M.J. Miksis).
- 240.** 2017 *"Mechanisms of surface alloy segregation on faceted core-shell nanowire growth"* J. Mech. Phys. Solids 100, 21-44(co-authors Q. Zhang and P.W. Voorhees).
- 241.** 2017 *"Modeling the growth of GaAs-AlGaAs core-shell nano wires"* Bielstein J. Nanotech. 8, 506-513 (co-authors Q. Zhang and P.W. Voorhees).
- 242.** 2017 *"Catalyst-particle configurations: From nanowires to carbon nanotubes"* (pending publication) (co-authors Q. Zhang and P.W. Voorhees).
- 243.** 2017 *"The importance of being thin"* J. Eng. Math. (In press).
- 244.** 2017 *"Instabilities in the solidification of multi-component alloys"* J. Crystal Growth (in press) (co-author A.L. Altieri).
- 245.** 2017 *"Instabilities in the rapid solidification of multi-component alloys"* (pending publication) (co-author A.L. Altieei).
- 246.** 2017 *"Instabilities in rapid directional solidification under weak flow"* Phys.Rev.E 96, 062802, 1-22 (co-authors K.N. and P.W. Voorhees).
- 247.** 2017 *"Strongly nonlinear theory of rapid solidification near absolute stability"* Phys.Rev.E 96, 042801, 1-14 (co-authors K.N. Kowal and A.L. Altieri).
- 248.** 2017 *"Introduction"* Annual Review Fluid Mechanics 50 (co-author P. Moin).
- 249.** 2018 *"Thermocapillary instability as a mechanism for film boiling collapse"* J. Fluid Mech. 852, 283-312 (co-authors E. Aursand and T. Yttrhus).
- 250.** 2019 *"Inclined film boiling: film stability and heat transfer"* J. Multiph Flow 111, 175 -187 (co-author E. Aursand).
- 251.** 2019 *"Strong shear-flow modulations of instabilities in rapid directional solidification"* Acta Mat. 164, 464-472 (co-author K.N. Kowal)
- 252.** 2019 *"Onset of double-diffusive convection in near-critical gas mixtures"* Phys.Rev E 99, 033132 (co-authors Z.C. Hu and X.R. Zhang).
- 253.** 2019 *"Thermocapillary instabilities in horizontal liquid layer under partial basal slip"* J. Fluid Mech. 855, 839-859 (co-authors K.N. Kowal and P.W. Voorhees).

Publications: Other, continued

- 254.** *“Surface deformations in dynamic thermocapillary convection under partial slip”* PRE (in press) (co-authors K.N. Kowal and P.W. Voorhees).
- 255.** 2019 *“Delay of ice formation on penguin feathers”* (pending publication) (co-authors E. Alizadeh-Birjandi, F. Tavakoli-Dastjerdi, J. St. Leger, and H.P. Kavehpour).