

CURRICULUM VITAE

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POSITIONS HELD

- 7/15 – present Glenn L. Murphy Professor of Engineering, CU-Boulder
4/04 – 12/19 Senior Editor, *Langmuir*
7/12 – 6/16 Chair, Department of Chemical & Biological Engineering, CU-Boulder
7/12 – 6/15 Alfred and Betty Look Professor of Engineering, CU-Boulder
9/04 – 6/12 Professor, Dept. of Chemical & Biological Engineering, CU-Boulder
1/01 – 8/04 Associate Professor, Dept. of Chemical & Biological Engineering, CU-Boulder
7/98 – 12/00 Associate Professor, Department of Chemistry, Tulane University
7/94 – 6/98 Assistant Professor, Department of Chemistry, Tulane University
9/92 – 7/94 Postdoctoral Associate, Dept. of Chemistry and Biochemistry
University of California Los Angeles with Charles M. Knobler
4/91 – 8/92 Postdoctoral Associate, Dept. of Chemical and Nuclear Engineering
University of California Santa Barbara with Joseph A. Zasadzinski

EDUCATION

Ph.D. in Physics, Harvard University (Advisor: Peter S. Pershan) (1991)

A.B. *summa cum laude* in Chemistry and Physics, Harvard University (1984)

SELECTED HONORS AND AWARDS

- Dean's Performance Award for Outstanding Research (2016)
Dean's Award for Outstanding Research (2014)
Fellow of the American Chemical Society (2014)
Fellow of the American Physical Society (2011)
Graduate Teaching Award (student-awarded), CU-Boulder ChBE Dept. (2011, '15, '17, '19)
Faculty Research Award, CU-Boulder College of Engineering (2010)
Boulder Faculty Assembly Award for Excellence in Research (2008)
CU-LEAD Alliance Faculty Appreciation Award (2006)
Camille Dreyfus Teacher-Scholar Award (1999)
NSF/CAREER Award (1998)
Mortarboard Honor Society Salute for Excellence in Teaching (1997, 1998, 1999)
Camille & Henry Dreyfus Foundation New Faculty Award (1994)
Stone and Webster Fellowship, Harvard University (1985)
Detur Prize (given to top first-year students), Harvard University (1981)

SYNERGISTIC ACTIVITIES

- Senior Editor (2004–2019), *Langmuir – the ACS Journal of Fundamental Interface Science*
Chair (2016), American Chemical Society Colloid & Surface Chemistry Division
Founding Director (2003–2012), NSF REU Site Program in Functional Materials
Founding Director (1998–2000), Tulane Science Scholars Program
Curriculum Developer, *Creative Technology*, a course that introduced alternative energy, biotech, and nanoscience concepts to more than 7000 non-science undergraduates.

PUBLICATIONS

1. J.F. Lynch, D.K. Schwartz, and K. Sivaprasad, *J. Acoust. Soc. Am.* **78**, 575 (1985)
"On the use of Focused Horizontal Arrays as Mode Separation and Source Location Devices in Ocean Acoustics"
2. D.K. Schwartz, A. Braslau, B. Ocko, and P.S. Pershan, *Phys. Rev. A* **38**, 5817 (1988)
"X-ray Reflectivity Studies of a Microemulsion Surface"
3. M.L. Schlossman, D.K. Schwartz, E.H. Kawamoto, G.J. Kellogg, P.S. Pershan, B.M. Ocko, M.W. Kim, and T.C. Chung, *Mat. Res. Soc. Symp. Proc.* **177**, 351 (1990)
"X-ray Studies of the Liquid/Vapor Interface: Water and Polymer and Fatty Acid Monolayers on Water"
4. D.K. Schwartz, M.L. Schlossman, E.H. Kawamoto, G.J. Kellogg, P.S. Pershan, and B.M. Ocko, *Phys. Rev. A* **41**, 5687 (1990)
"Thermal Diffuse X-ray Scattering Studies of the Water/Vapor Interface"
5. G. Swislow, D. Schwartz, B.M. Ocko, and P.S. Pershan, *Phys. Rev. A* **43**, 6815 (1991)
"X-ray Studies of the Surface and Bulk Structure of the Isotropic and Nematic Phase of a Lyotropic Liquid Crystal"
6. M.L. Schlossman, D.K. Schwartz, E.H. Kawamoto, G.J. Kellogg, P.S. Pershan, M.W. Kim, and T.C. Chung, *J. Phys. Chem.* **95**, 6628 (1991)
"X-ray Reflectivity of a Polymer Monolayer at the Water/Vapor Interface"
7. M.L. Schlossman, D.K. Schwartz, P.S. Pershan, E.H. Kawamoto, G.J. Kellogg, and S. Lee, *Phys. Rev. Lett.* **66**, 1599 (1991)
"Relaxation and the Reentrant Appearance of Phases in a Molecular Monolayer"
8. D.K. Schwartz, M.L. Schlossman, and P.S. Pershan, *J. Chem. Phys.*, **96**, 2356 (1992)
"Re-entrant Appearance of Phases in a Relaxed Langmuir Monolayer of Tetracosanoic Acid as Determined by X-ray Scattering"
9. J.T. Woodward, J.A.N. Zasadzinski, and D.K. Schwartz, *Phys. Rev. Lett.*, **68**, 2563 (1992)
"Alternative Method of Imaging Surface Topologies of Nonconducting Bulk Specimens" (comment)
10. D.K. Schwartz, J. Garnaes, R. Viswanathan, and J.A.N. Zasadzinski, *Scanning*, **14**, II-3 (1992)
"Atomic Force Microscopy of the Molecular Lattice of Thin Langmuir-Blodgett Films"
11. R. Viswanathan, D.K. Schwartz, J. Garnaes, and J.A.N. Zasadzinski, *Langmuir*, **8**, 1603 (1992)
"Atomic Force Microscopy Imaging of Substrate and pH Effects on Langmuir-Blodgett Monolayers"
12. J. Garnaes, D.K. Schwartz, R. Viswanathan, and J.A.N. Zasadzinski, *Nature*, **357**, 54 (1992)
"Domain Boundaries and Buckling Superstructures in Langmuir-Blodgett Films"
13. D.K. Schwartz, J. Garnaes, R. Viswanathan, and J.A.N. Zasadzinski, *Science*, **257**, 508 (1992)
"Surface Order and Stability in Langmuir-Blodgett Films"
14. D.K. Schwartz, R. Viswanathan, and J.A.N. Zasadzinski, *J. Phys. Chem.*, **96**, 10444 (1992)
"Reorganization and Crystallite Formation in Langmuir-Blodgett Films"

15. D.K. Schwartz, S. Steinberg, J. Israelachvili, J.A.N. Zasadzinski, *Phys. Rev. Lett.*, **69**, 3354 (1992)
"Growth of a Self-Assembled Monolayer by Fractal Aggregation"
16. D.K. Schwartz, J. Garnaes, R. Viswanathan, S. Chiruvolu, and J.A.N. Zasadzinski, *Phys. Rev. E*, **47**, 452 (1993)
"Quantitative Lattice Measurement of Thin Langmuir-Blodgett Films by Atomic Force Microscopy"
17. D.K. Schwartz, R. Viswanathan, and J.A. Zasadzinski, *Phys. Rev. Lett.*, **70**, 1267 (1993)
"Commensurate Defect Superstructures in a Langmuir-Blodgett Film"
18. D.K. Schwartz, R. Viswanathan, and J.A.N. Zasadzinski, *Langmuir*, **9**, 1384 (1993)
"Coexisting Lattice Structures in a Langmuir-Blodgett Film"
19. J. Garnaes, D.K. Schwartz, R. Viswanathan, J.A.N. Zasadzinski, *J. Synth. Metals*, **57**, 3795 (1993)
"Nanoscale Defects in Langmuir-Blodgett Films Observed by Atomic Force Microscopy"
20. D.K. Schwartz, *Nature*, **362**, 593 (1993) [invited editorial]
"Pattern Formation: Instant Patterns in Thin Films"
21. R. Viswanathan, J.A.N. Zasadzinski, and D.K. Schwartz, *Science*, **261**, 449 (1993)
"Strained-Layer van der Waals Epitaxy in a Langmuir-Blodgett Film"
22. D.K. Schwartz, R. Viswanathan, J. Garnaes, J.A.N. Zasadzinski, *J. Am. Chem. Soc.*, **115**, 7374 (1993)
"Influence of Cations, Alkane Chain Length, and Substrate on Molecular Order of Langmuir-Blodgett Films"
23. D.K. Schwartz and C.M. Knobler, *J. Phys. Chem.*, **97**, 8849 (1993)
"Direct Observations of Transitions between Condensed Langmuir Monolayer Phases by Polarized Fluorescence Microscopy"
24. D.K. Schwartz, R. Viswanathan, and J.A. Zasadzinski, *Science*, **263**, 1158 (1994)
"Examining Langmuir-Blodgett Films with Atomic Force Microscopy" [technical comment]
25. D.K. Schwartz, J. Ruiz-Garcia, X. Qiu, J.V. Selinger and C.M. Knobler, *Physica A*, **204**, 606 (1994)
"Tilt Stripe Textures in Langmuir Monolayers of Fatty Acids"
26. J.A. Zasadzinski, R. Viswanathan, L. Madsen, J. Garnaes, D.K. Schwartz, *Science*, **263**, 1726 (1994)
"Langmuir-Blodgett Films"
27. R. Viswanathan, J.A.N. Zasadzinski, and D.K. Schwartz, *Nature*, **368**, 440 (1994)
"Spontaneous Chiral Symmetry-Breaking by Achiral Molecules in a Langmuir-Blodgett Film"
28. J.A. Zasadzinski, R. Viswanathan, D.K. Schwartz, J. Garnaes, L. Madsen, S. Chiruvolu, J.T. Woodward, and M.L. Longo, *Colloids and Surfaces A*, **93**, 305 (1994)
"Applications of Atomic Force Microscopy to Structural Characterization of Organic Thin Films"
29. D.K. Schwartz, R. Viswanathan, and J.A. Zasadzinski, in "Lectures on Thermodynamics and Statistical Mechanics," eds. M. Costas, R. Rodriguez, and A.L. Benavides, p. 132 (World Scientific, Singapore) 1994. "Atomic Force Microscopy of Langmuir-Blodgett Films"

30. B. Fischer, M.-W. Tsao, J. Ruiz-Garcia, T.M. Fischer, D.K. Schwartz, and C.M. Knobler, *J. Phys. Chem.*, **98**, 7430 (1994)
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31. D.K. Schwartz, R. Viswanathan, and J.A. Zasadzinski *J. Chem. Phys.*, **101**, 7161 (1994)
"Head-Tail Competition and Modulated Structures in Planar Surfactant (Langmuir-Blodgett) Films"
32. D.K. Schwartz, M.-W. Tsao and C.M. Knobler, *J. Chem. Phys.*, **101**, 8258 (1994)
"Domain morphology in a two-dimensional anisotropic mesophase: Cusps and boojum textures in a Langmuir monolayer"
33. D.K. Schwartz, C.M. Knobler, and R. Bruinsma *Phys. Rev. Lett.*, **73**, 2841 (1994)
"Direct Observation of Langmuir Monolayer Flow through a Channel"
34. S. Riviere, S. Hénon, J. Meunier, D.K. Schwartz, M.-W. Tsao and C.M. Knobler, *J. Chem. Phys.*, **101**, 10045 (1994)
"Textures and Phase Transitions in Langmuir Monolayers of Fatty Acids: A Comparative Brewster Angle Microscope and Polarized Fluorescence Microscope Study"
35. R. Viswanathan, L.L. Madsen, J.A.N. Zasadzinski, and D.K. Schwartz, *Science*, **269**, 51 (1995)
"Liquid to Hexatic to Crystalline Transition in Langmuir-Blodgett Films"
36. B. Fischer, M.-W. Tsao, J. Ruiz-Garcia, Th.M. Fischer, D.K. Schwartz, and C.M. Knobler, *Thin Solid Films*, **284-285**, 110 (1996)
"The Blooming Transition in Langmuir Monolayers and its Microscopic Origin"
37. H.D. Sikes, J.T. Woodward IV, and D.K. Schwartz, *J. Phys. Chem.*, **100**, 9093 (1996)
"Pattern Formation in a Substrate-Induced Phase Transition during Langmuir-Blodgett Transfer"
38. J.T. Woodward, A. Ulman, and D.K. Schwartz, *Langmuir*, **12**, 3626 (1996)
"Self-Assembled Monolayer Growth of Octadecylphosphonic Acid on Mica"
39. M.L. Kurnaz, D.K. Schwartz, *J. Phys. Chem.*, **100**, 11113 (1996)
"Morphology of Micro-Phase Separation in Arachidic Acid/Cadmium Arachidate Langmuir Blodgett Multilayers"
40. J.T. Woodward, and D.K. Schwartz, *J. Am. Chem. Soc.*, **118**, 7861 (1996)
"In Situ Observation of Self-Assembled Monolayer Growth"
41. M.L. Kurnaz, D.K. Schwartz, *Langmuir*, **12**, 4971 (1996)
"Skeletonization as a Probe of Interlayer Correlations in Langmuir Blodgett Films"
42. D.K. Schwartz, *Surf. Sci. Reports*, **27**, 241-334 (1997)
"Langmuir-Blodgett Film Structure" [review]
43. M.L. Kurnaz, D.K. Schwartz, *Phys. Rev. E* **56**, 3378 (1997)
"Channel Flow in a Langmuir Monolayer: Unusual Velocity Profiles in a Liquid-Crystalline Mesophase"

44. H.D. Sikes, D.K. Schwartz, *Langmuir* **13**, 4704 (1997)
"A Temperature-Dependent Two-Dimensional Condensation Transition during Langmuir-Blodgett Deposition"
45. M.L. Kurnaz, D.K. Schwartz, *Journal of Rheology* **41**, 1173 (1997)
"A Technique for Direct Observation of Particles under Shear in a Langmuir Monolayer"
46. J.T. Woodward, I. Doudevski, H.D. Sikes, D.K. Schwartz, *J. Phys. Chem. B* **101**, 7535 (1997)
"Kinetics of Self-Assembled Monolayer Growth Explored via Submonolayer Coverage of Incomplete Films"
47. H.D. Sikes, D.K. Schwartz, *Science* **278**, 1604 (1997)
"Two Dimensional Melting of an Anisotropic Crystal Observed at the Molecular Level"
48. J.T. Woodward, D.K. Schwartz, *Langmuir* **13**, 6873 (1997)
"Dewetting Modes of Surfactant Solution as a Function of the Spreading Coefficient"
49. J.T. Woodward, D.K. Schwartz, *J. Vac. Sci. Technology B* **16**, 51 (1998)
"Removing Drift from Scanning Probe Microscope Images of Periodic Samples"
50. D.Y. Takamoto, E. TerOvanesyan, D.K. Schwartz, R. Viswanathan, *et al.*, *Acta Physica Polonica*, **93**, 373 (1998)
"Atomic Force Microscopy of Instabilities and Reorganization of Langmuir-Blodgett Films"
51. M. Breen, J.T. Woodward, A.W. Aplett, D.K. Schwartz, *Chem. of Materials* **10**, 710 (1998)
"Direct Evidence for an Ion by Ion Deposition Mechanism in Solution Growth of CdS Thin Films"
52. D.K. Schwartz, *Current Opinion in Colloid and Interface Science* **3**, 131 (1998)
"Scanning Probe Microscope Studies of Thermodynamic and Kinetic Processes in Ultrathin Organic Films" [invited review]
53. D. Gidalevitz, M.L. Kurnaz, O.Y. Mindyuk, B.M. Ocko, D.K. Schwartz, and P.A. Heiney, *Langmuir* **14**, 2910 (1998)
"Thermal Melting in Langmuir Films of Discotic Liquid-Crystalline Compounds"
54. D. Gidalevitz, O.Y. Mindyuk, M.R. Stetzer, P.A. Heiney, M.L. Kurnaz, D.K. Schwartz, B.M. Ocko, J.P. McCauley, Jr., and A.B. Smith, III *J. Phys. Chem. B* **102**, 6688 (1998)
"A Conformational Phase Transition in a Langmuir Film of an Amphiphilic Azacrown"
55. W.A. Hayes and D.K. Schwartz *Langmuir* **14**, 5913-5917 (1998).
"Two Stage Growth of Octadecyltrimethylammonium Bromide Monolayers at Mica from Aqueous Solution Below the Krafft Point"
56. I. Doudevski, W.A. Hayes and D.K. Schwartz *Phys. Rev. Lett.* **81**, 4927 (1998)
"Submonolayer Island Nucleation and Growth Kinetics during Self-assembled Monolayer Formation"
57. C.K. Park, F.J. Schmitt, L. Evert, D.K. Schwartz, J.N. Israelachvili, C. Knobler, *Langmuir* **15**, 202-206 (1999).
"Film Balance and Fluorescence Microscopic Investigation of the Effects of Ca²⁺ on Mixed DMPC/DMPG Monolayers"

58. C.M. Knobler and D.K. Schwartz, *Current Opinion in Colloid and Interface Science* **4**, 46-51 (1999).
“Langmuir and Self-assembled Monolayers” [invited review]
59. I. Doudevski and D.K. Schwartz *Phys. Rev. B* **60**, 14-17 (1999).
“Dynamic scaling of the submonolayer island size distribution during self-assembled monolayer growth”
60. A. Ivanova, M.L. Kurnaz, and D.K. Schwartz, *Langmuir* **15**, 4622-4624 (1999).
“Temperature and flow rate dependence of the velocity profile during channel flow of a Langmuir monolayer”
61. D.K. Schwartz and I. Doudevski, *Mat. Res. Soc. Symp. Proc.* **570**, 163-170 (1999).
“In situ observation of scaling behavior during solution-phase growth of surfactant monolayers”
62. J.T. Woodward, H. Gwin, and D.K. Schwartz, *Langmuir* , **16**, 2957-2961 (2000)
"Contact angles on surfaces with mesoscopic chemical heterogeneity"
63. I. Doudevski, W.A. Hayes, J.T. Woodward, D.K. Schwartz, *Coll. and Surf. A* **174**, 233-243 (2000).
“Atomic force microscope imaging of molecular aggregation during self-assembled monolayer growth”
64. J. Ignes-Mullol and D.K. Schwartz, *Phys. Rev. Lett.* **85**, 1476 (2000).
“Alignment of Hexatic Langmuir Monolayers under Shear”
65. A.T. Ivanova and D.K. Schwartz, *Langmuir* **16**, 9433-9438 (2000).
“Transient Behavior of the Velocity Profile in Channel Flow of a Langmuir Monolayer”
66. I. Doudevski and D.K. Schwartz, *J. Phys. Chem. B* **104**, 9044-9047 (2000).
“Evolution of a Steady State Island Size Distribution during Self-Assembled Monolayer Dissolution”
67. I. Doudevski and D.K. Schwartz, *Langmuir* **16**, 9381-9384 (2000).
“Mechanisms of Self-Assembled Monolayer Desorption Determined using In Situ Atomic Force Microscopy”
68. R.M. Enmon Jr., K.C. O'Connor, D.J. Lacks, D.K. Schwartz, and R.S. Dotson, *Biotechnol. Bioeng.*, **72**, 579-591 (2001).
“Dynamics of Spheroid Self-Assembly in Liquid-Overlay Culture of DU 145 Human Prostate Cancer Cells”
69. I. Doudevski and D.K. Schwartz, *Appl. Surface Sci.* **175-176**, 17-26 (2001).
“Self-Assembled Monolayers in the Context of Epitaxial Film Growth”
70. C. Messerschmidt and D.K. Schwartz, *Langmuir* **17**, 462-467 (2001).
“Growth mechanisms of octadecylphosphonic acid self-assembled monolayers on sapphire (corundum): Evidence for a quasi-equilibrium triple point”
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“Mechanisms and Kinetics of Self-Assembled Monolayer Formation”
72. B.K. Simmons, C. Taylor, S. Li, F. Landis, V.T. John, G.L. McPherson, D.K. Schwartz and R. Moore, *J. Am. Chem. Soc.* **123**, 2414-2421 (2001)
“Microstructure Determination of AOT + Phenol Organogels Utilizing Small-Angle X-Ray Scattering and Atomic Force Microscopy”

73. J. Ignes-Mullol and D.K. Schwartz, *Nature* **410**, 348-351 (2001).
“Shear-induced Molecular Precession in a Hexatic Langmuir Monolayer.”
74. I. Doudevski and D.K. Schwartz, *J. Am. Chem. Soc.* **123**, 6867-6872 (2001).
“Concentration dependence of self-assembled monolayer island nucleation and growth.”
75. A.T. Ivanova, J. Ignes-Mullol, and D.K. Schwartz, *Langmuir* **17**, 3406-3411 (2001).
“Micro-rheology of a sheared Langmuir monolayer: Elastic recovery and inter-domain slippage.”
76. J. Ignes-Mullol and D.K. Schwartz, *Langmuir* **17**, 3017-3029 (2001).
“Molecular Orientation in Langmuir Monolayers under Shear.”
77. D.Y. Takamoto, E. Aydil, J.A. Zasadzinski, A. T. Ivanova, D.K. Schwartz, T. Yang, P.S. Cremer, *Science* **293**, 1292-1295 (2001).
“Stable ordering in Langmuir-Blodgett films”
78. D.K. Schwartz, in *Encyclopedia of Materials: Science and Technology*, K.H.J. Buschow *et al.* eds. Elsevier, Oxford (2001) pp. 4392-4399.
“Langmuir-Blodgett Films: Formation and Structure”
79. J. Ding, H.E. Warriner, J.A. Zasadzinski, D.K. Schwartz, *Langmuir* **18**, 2800-2806 (2002).
“A Magnetic Needle Viscometer For Langmuir Monolayers”
80. R.M. Enmon Jr., K.C.O 'Connor, H. Song, D.J. Lacks, D.K. Schwartz, *Biotechnol. Bioeng.* **80**, 580-588 (2002).
“Aggregation Kinetics of Well and Poorly Differentiated Human Prostate Cancer Cells”
81. B.M. Ocko, M. Kelly, A.T. Nikova, D.K. Schwartz, *Langmuir* **18**, 9810-9815 (2002).
“Structure and phase behavior of mixed monolayers of saturated and unsaturated fatty acids”
82. B. Simmons, S. Li, V.T. John, G.L. McPherson, C. Taylor, D.K. Schwartz and K. Maskos, *Nanoletters* **2**, 1037-1042 (2002).
“Spatial compartmentalization of nanoparticles into strands of a self-assembled organogel”.
83. G.B. Bantchev and D.K. Schwartz *Langmuir* **19**, 2673-2682 (2003).
“Surface rheology of β -casein layers at the air/solution interface: Formation of a two-dimensional physical gel”
84. C.E. Taylor and D.K. Schwartz, *Langmuir* **19**, 2665-2672 (2003).
“Octadecanoic acid self-assembled monolayer growth at sapphire surfaces”
85. D.M. Walba, C.A. Liberko, E. Körblova, M. Farrow, T.E. Furtak, B.C. Chow, D.K. Schwartz, A.S. Freeman, K. Douglas, S.D. Williams, A.F. Klitnick, and N.A. Clark, *Liquid Crystals*, **31**, 481-489 (2004)
“Self-Assembled Monolayers for Liquid Crystal Alignment: Simple Preparation on Glass Using Alkyltrialkoxysilanes.”
86. J.M. Mellott, W.A. Hayes, and D.K. Schwartz, *Langmuir* **20**, 2341-2348 (2004).
“Kinetics of Octadecyltrimethylammonium Bromide Self-Assembled Monolayer Growth at Mica from Aqueous Solution”

87. J.M. Mellott and D.K. Schwartz, *J. Am. Chem. Soc.*, **126**, 9369-9373 (2004)
“Supercritical Self-Assembled Monolayer Growth”
88. G.B. Bantchev and D.K. Schwartz, *Langmuir*, **20**, 11692-11697 (2004)
“Structure of β -casein layers at the air/solution interface: Atomic Force Microscopy studies of transferred layers.”
89. C.R. Vessely, J.F. Carpenter, and D.K. Schwartz *Biomacromolecules*, **6**, 3334-3344 (2005)
“Calcium-Induced Changes to Molecular Conformation and Aggregate Structure of β -Casein at the Air-Water Interface”
90. Mark Nelson, Nicholas Cain, Chad E. Taylor, Benjamin M. Ocko, Douglas L. Gin, Scott R. Hammond, Daniel K. Schwartz *Langmuir* **21**, 9799-9802 (2005)
“Periodic Arrays of Interfacial Cylindrical Reverse Micelles”
91. Andrew D. Price, and Daniel K. Schwartz, *Langmuir*, **22**, 9753-9759 (2006)
“Anchoring of a Nematic Liquid Crystal on a Wettability Gradient”
92. Nicholas Cain, Josh Van Bogaert, Douglas L. Gin, Scott R. Hammond, Daniel K. Schwartz, *Langmuir* **23**, 482487 (2007)
“Self-Organization of a Wedge-Shaped Surfactant in Monolayers and Multilayers”
93. Andrew D. Price, and Daniel K. Schwartz, *J. Phys. Chem. B*, **111**, 1007-1015 (2007)
“Fatty Acid Monolayers at the Nematic/Water Interface: Phases and Liquid Crystal Alignment”
94. Keith Forward, Amanda Moster, Daniel K. Schwartz, and Daniel J. Lacks, *Langmuir*, **23**, 5255-5258 (2007)
“Contact angles of sub-millimeter particles: Connecting wettability to nanoscale surface topography”
95. Eric Karp, Cory S. Pecinovsky, Michael J. McNevin, Douglas L. Gin, and Daniel K. Schwartz, *Langmuir*, **23**, 7923-7927 (2007)
“Langmuir Monolayers of a Photo-isomerizable Macrocycle Surfactant”
96. Siwar Trabelsi, Shishan Zhang, T. Randall Lee, Daniel K. Schwartz, *Soft Matter*, **2**, 1518-1524 (2007)
“Swelling of a Cluster Phase in Langmuir Monolayers Containing Semi-Fluorinated Phosphonic Acids”
97. Siwar Trabelsi, Shishan Zhang, T. Randall Lee, Daniel K. Schwartz, *Phys. Rev. Lett.*, **100**, 037802 (2008)
“Linactants: Surfactant Analogues in Two Dimensions”
98. Andrei Honciuc, Adam Harant, and Daniel K. Schwartz, *Langmuir*, **24**, 6562-6566 (2008)
“Single-Molecule Observations of Surfactant Diffusion at the Solution-Solid Interface”
99. Andrew D. Price, and Daniel K. Schwartz, *J. Am. Chem. Soc.*, **130**, 8188-8194 (2008)
“DNA Hybridization-Induced Reorientation of Liquid Crystal Anchoring at the Nematic Liquid Crystal/Aqueous Interface”
(Highlighted in *Chemistry World*, 6/26/2008, “Liquid crystals stand up for DNA detection”)
100. Stephanie M. Malone and Daniel K. Schwartz. *Langmuir*, **24**, 9790-9794 (2008)
“Polar and Azimuthal Alignment of a Nematic Liquid Crystal by Alkylsilane Self-Assembled Monolayers: Effects of Chain-Length and Mechanical Rubbing”

101. Shishan Zhang, Andrew C. Jamison, Daniel K. Schwartz, and T. Randall Lee, *Langmuir*, **24**, 10204-10208 (2008)
“Self-Assembled Monolayers Derived from a Double-Chained Monothiol Having Chemically Dissimilar Chains”
102. Andrei Honciuc, Alexander L. Howard, Daniel K. Schwartz, *J Phys Chem C* **113**, 2078-2081 (2009)
“Single Molecule Observations of Fatty Acid Adsorption at the Silica/Water Interface: Activation Energy of Attachment”
103. Siwar Trabelsi, Shishan Zhang, Zhongcheng Zhang, T. Randall Lee, Daniel K. Schwartz, *Soft Matter* **5**, 750-758 (2009)
“Semi-fluorinated Phosphonic Acids Form Stable Nanoscale Clusters in Langmuir-Blodgett and Self-Assembled Monolayers”
104. Steve T. Marshall, Daniel K. Schwartz, J. William Medlin, *Sensors and Actuators B: Chemical* **136**, 315-319 (2009)
“Selective Acetylene Detection Through Surface Modification of Metal-Insulator-Semiconductor Sensors with Alkanethiolate Monolayers”
105. Andrei Honciuc, Denver Jn. Baptiste, Daniel K. Schwartz, *Langmuir* **25**, 4339-4342 (2009)
“Hydrophobic Interaction Microscopy: Mapping the Solid/ Liquid Interface using Amphiphilic Probe Molecules”
106. Andrei Honciuc, Daniel K. Schwartz, *J. Am. Chem. Soc.* **131**, 5973-5979 (2009)
“Probing Hydrophobic Interactions using Trajectories of Amphiphilic Molecules at a Hydrophobic/Water Interface”
107. Andrew D. Price, Jordi Ignés-Mullol, Thomas E. Furtak, Yu-an Lo, Stephanie M. Malone, and Daniel K. Schwartz, *Soft Matter*, **5**, 2252-2260 (2009)
“Liquid Crystal Anchoring Transformations Induced by Phase Transitions of a Photoisomerizable Surfactant at the Nematic/Aqueous Interface”
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“Particle Remobilization in Filtration Membranes during Flow Interruption”
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230. Dapeng Wang and Daniel K. Schwartz, *J. Phys Chem C*, **124**, 19880-19891 (2020); doi:10.1021/acs.jpcc.0c05834
“Non-Brownian Interfacial Diffusion: Flying, Hopping, and Crawling”
[Invited Perspective, Cover Article]
231. Haichao Wu and Daniel K. Schwartz, *Accounts of Chemical Research*, **53**, 2130-2139 (2020); doi:10.1021/acs.accounts.0c00408
“Nanoparticle Tracking to Probe Transport in Porous Media”
[Invited Focused Review, Cover Article]
[Highlighted on X-Mol: <https://www.x-mol.com/news/505250>]
232. Andres F. Chaparro Sosa, Sabrina Matos de Oliveira da Silva, Daniel K. Schwartz, and Joel L. Kaar, *J Phys Chem Lett*, **11**, 7417-7422 (2020); doi:10.1021/acs.jpcllett.0c02074
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“Connecting Hindered Transport in Porous Media Across Length Scales: From Single-Pore to Macroscopic”
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“Single molecule characterization of anomalous transport in a thin, anisotropic film”
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“Cadherin Cis- and Trans-Interactions are Mutually Cooperative”
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“Enhanced Diffusive Transport in Fluctuating Porous Media”
240. Héctor Sánchez-Morán, James S. Wertz, Daniel K. Schwartz, and Joel L. Kaar, *ACS Applied Materials and Interfaces*, **13**, 26694-26703 (2021); doi:10.1021/acsami.1c02443
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241. Andres F. Chaparro Sosa, Riley M. Bednar, Ryan A. Mehl, Daniel K. Schwartz, and Joel L. Kaar, *J. Am. Chem. Soc.*, **143**, 7154-7163 (2021); doi:10.1021/jacs.1c02375
“Faster Surface Ligation Reactions Improve Immobilized Enzyme Structure and Activity”
[Highlighted in Science Translational Medicine:
<https://blogs.sciencemag.org/pipeline/archives/2021/05/13/tie-me-proteins-all-down-sport>]
242. Haichao Wu, Benjamin Greydanus, and Daniel K. Schwartz, *Proceedings of the National Academy of Sciences*, **118**, e2101801118 (2021); doi:10.1073/pnas.2101807118
“Mechanisms of Transport Enhancement for Self-Propelled Nanoswimmers in a Porous Matrix”
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“Diffusion of Short Semi-Flexible DNA Diffusion in Strong and Moderate Confinement”
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“Fouling of Microfiltration Membranes by Bidisperse Particle Solutions”
246. Benjamin Greydanus, J. William Medlin, and Daniel K. Schwartz *J. Colloid Interface Sci* **614**, 425-435 (2022); doi:10.1016/j.jcis.2022.01.053
“Probing Surface-Adsorbate Interactions through Active Particle Dynamics”
247. Connor J. Thompson, Daniel F. Kienle, and Daniel K. Schwartz (in review)
“Enhanced Facilitated Diffusion of Membrane-Associating Proteins Under Symmetric Confinement”
248. Ohad Vilka, Erez Aghion, Carsten Beta, Oliver Nagel, Matthias Weiss, Adal Sabri, Diego Krapff, Raphael Sarfati, Daniel K. Schwartz, Ralf Metzler, Ran Nathan, Michael Assafa (in review)
“Unravelling the Origins of Anomalous Diffusion: from Molecules to Migrating Storks”
249. Zachary Blanchette, Daniel K. Schwartz, and J. William Medlin (in review)
“Enhancing Activity through Improved Access to Catalyst Surfaces with Organic Monolayers”
250. Ezra A Baghdady, Daniel K. Schwartz, and J. William Medlin (in preparation)
“Effects of Surface Hydrophobicity on Catalytic Transfer Hydrogenation of Styrene with Formic Acid in a Biphasic Mixture”

COURSES TAUGHT

University of Colorado

CHEN 1211 – General Chemistry for Engineers, S01, S03, S04, F05, S07

CHEN 1000 – Creative Technology, F01, S02, F06, S08, S09, F10

CHEN 3200 – Fluid Mechanics, S21, S22

CHEN 4130 – Chemical Engineering Lab 2, F03, F04, F05

CHEN 5370 – Graduate Thermodynamics, F07, F09, F10, F14, F16, F17, F18, F19, F20, F21

CHEN 4838/5835 – Colloids and Interfaces, F04, S10, F11

Tulane University

Introduction to Quantum Chemistry (graduate level), F94, F95, F96

Physical Chemistry of Surfaces, S95, S99

General Chemistry I (Honors), F00

General Chemistry II, S96, S00

Physical Chemistry II – Thermodynamics, S97

Physical Chemistry I – Quantum Chemistry, F97, F98

PERSONNEL DIRECTED

Name	Dates	
<i>Graduate students</i>		
Ivo Doudevski	1995 – 2000 (Ph.D. 12/00)	NYU Langone Medical Center
Ani Ivanova	1996 – 2000 (Ph.D. 12/00)	Cabot Corp.
Grigor Bantchev	1996 – 2003 (Ph.D. 5/03)	Staff Scientist, USDA
James Mellott	1998 – 2004 (Ph.D. 4/04)	Patent Attorney
Andrew Price	2003 – 2007 (Ph.D. 9/07)	10X Genomics
Nicholas Cain	2003 – 2004 (M.S. 5/04)	Qimonda
Stephanie Malone	2007 – 2011 (Ph.D. 12/11)	Genia/Roche
Keith Britt*	2010 – 2011 (M.S. 1/11)	Amgen
Daniel Kienle	2010 – 2011 (M.S. 5/11)	UC Davis
Patrick Noonan	2010 – 2013 (Ph.D. 12/13)	Soma Logic
Carolyn Schoenbaum*	2010 – 2014 (Ph.D. 5/14)	Intel
Blake Langdon	2010 – 2014 (Ph.D. 12/14)	Roche
Jon Monserud	2010 – 2015 (Ph.D. 1/15)	Soma Logic
Nathan Nelson	2010 – 2015 (Ph.D. 1/15)	DaVita
Aaron McUmbert	2010 – 2015 (Ph.D. 5/15)	Northrop Grumman
Rudy Kahsar*	2011 – 2014 (Ph.D. 5/14)	Rocky Mountain Institute
Joshua Mabry	2011 – 2015 (Ph.D. 5/15)	Bain & Co.
Xun (Chauncy) Yin	2014 – 2015	OSIsoft
Huai-Ying (Heidi) Chin	2014 – 2015 (M.S. 5/15)	WaferTech
Rebecca Falatach*	2016 – 2017	Dharmacon
Kate Macri	2013 – 2019 (Ph.D. 5/19)	KBI Biopharma
Pengxiao Hao*	2014 – 2018 (Ph.D. 8/18)	Northwestern Univ.
Lucas Ellis*	2014 – 2018 (Ph.D. 8/18)	Oregon State University
James Wertz*	2014 – 2019 (Ph.D., 8/19)	Rigid Biotech LLC
Jeremiah Traeger	2015 – 2019 (Ph.D., 12/19)	PNNL
Yu Cai	2015 – 2018 (Ph.D. 9/18)	Pall Corp.
David Faulon Marruecos*	2015 – 2018 (Ph.D. 9/18)	University of Barcelona
Andres Chaparro Sosa*	2016 – 2021 (Ph.D. 3/21)	Infinome Biosciences
Gregory Morrin	2017 – 2020 (Ph.D. 12/20)	Alexion
Haichao Wu	2017 – 2021 (Ph.D. 6/21)	
Connor Thompson	2018 – 2021 (Ph.D. 6/21)	Element Biosciences
Benjamin Greydanus*	2018 –	
Evan Bisirri*	2019 –	
Hector Sanchez-Moran*	2020 –	
Ezra Baghdady*	2020 –	
Albert Velasco Abadia*	2020 –	
Zachary Blanchette*	2020 –	
Victoria Reichelderfer*	2021 –	
Alexander Kanora	2021 –	
Holly Coleman*	2021 –	
Samuel Kennedy*	2022 –	

* co-advised

PERSONNEL DIRECTED (continued)*Postdoctoral fellows*

John Woodward	1994-97	NIST Gaithersburg
M. Levent Kurnaz	1995-97	Bogazici University, Turkey
William Hayes	1997-98	PMC Group
Jordi Ignés-Mullol	1998-2000	University of Barcelona
Christian Messerschmidt	2000	ams AG
Chad Taylor	1999-2001	Western Digital
Chad Braun	2004-2005	Array BioPharma
Adam Harant	2004-2006	Qura
Xiaoling Li	2006-2007	n/a
Siwar Trabelsi	2006-2009	CESI Chemical / Flotek
Andrei Honciuc	2006-2009	Inst. of Macromolecular Chem., Romania
Robert Walder	2008-2012	NIST / CU-Boulder
Indira Sriram	2010-2013	NIST Boulder
Mark Kastantin	2009-2013	Serán Bioscience
Xiang Wang	2012-2013	NIST-JILA
Michael Skaug	2011-2014	Aurora Insight
Patrick Noonan	2013-2014	SomaLogic
Saonti Chakraborty	2013-2016	Front Range CC
Dapeng Wang	2013-2017	Changchun Inst. of Appl. Chem.
Nathan Nelson	2016-2018	DaVita
Raphael Sarfati	2017-2019	CU-Boulder
Ellen Knapp	2019-2020	Pfizer
Daniel Kienle	2016-2021	Ametek

PERSONNEL DIRECTED (continued)

Name	Dates	Position at the time
<i>Undergraduate students</i>		
Hadley Sikes	1994-97 (Sr. Thesis)	Tulane undergrad
Deborah Simon	1996-97	Tulane undergrad
Timothy Kerwin	1997-98	Tulane undergrad
Holly Gwin	1998-99	Tulane undergrad
Roman Raju	1999	Tulane undergrad
Adam Freeman	Summer 2001	Univ of Florida undergrad
Mark Nelson	Summer 2002	CU undergrad
Eszther Horanyi	Fall 2002	CU undergrad
Josh van Bogaert	Summer 2003	Vanderbilt undergrad
Ana Oquendo	Summer 2004	Univ. of Puerto Rico undergrad
David Hutson	Fall 2004	CU undergrad
Keith Beers	Fall 2004	CU undergrad
Robert Mattson	Summer 2005	UT-Austin undergrad
Eric Karp	2006-2007 (Sr. Thesis)	CU undergrad
Ami Patel	Spring 2007	CU undergrad
Alex Howard	Summer 2008	CU undergrad
Denver Jn. Baptiste	Summer 2008	CUNY undergrad
Kevin Daly	Summer 2008	Rice undergrad
Erin Chang	Summer 2009	UPenn undergrad
Amit Shavit	Summer 2009	UMass undergrad
Chris Marbury	Fall 2009	CU Undergrad
Florencia Paredes	Summer 2010	Cornell undergrad
Cherrelle Thomas	Summer 2011	Howard Univ. undergrad
Richard (Rusty) Roberts	Summer 2012	Whitman College undergrad
Brennan Coffey	2012-2015 (Sr. Thesis)	CU undergrad
Roya Mirhossaini	2013-2015 (Sr. Thesis)	CU undergrad
Nora Schweitz	2013-2014	CU undergrad
Alan Bromwell	2013-2014	CU undergrad
Cheyenne Lynsky	Summer 2014	Northwestern undergrad
Stephanie Hart	Summer 2015	Univ. of Minnesota undergrad
Zack Lamberty	Summer 2017	Swarthmore College undergrad
Alexandra Davis	Summer 2018	NC State Undergrad
Michael Durkin	Summer 2018	University of Michigan undergrad
Kiersten Johnson	Fall 2018 – Fall 2019	CU undergrad
Julie Nguyen	Summer 2019	Washington Univ. St Louis ugrad
<i>Other</i>		
Rich Fox	Summer 2002	Science teacher, Las Vegas, NV