UNIVERSITY OF MARYLAND
Department of Physics, 4150 Campus Dr.
College Park, Maryland 20742-4111

CURRICULUM VITAE

Theodore L. Einstein
Professor
Office Phone: 301-405-6147
FAX: 301-314-9465
Web: http://www.physics.umd.edu/~einstein

Home Address: 13709 Castle Cliff Way
Silver Spring, MD 20904-5473
Home Phone: 301-384-1438
e-mail: einstein@umd.edu

I. Personal Data:

Birth: January 20, 1947 - Cleveland, Ohio
Married, two sons (12/84, 9/90)

II. Education:

B.A. (summa cum laude, highest honors in physics, Phi Beta Kappa, Sigma Xi associate)	1969	Harvard Univ.
A.M. (4-year joint BA/AM, 1st ever to do so)	1969	Harvard Univ.
Ph.D. (Dissertation: "Some Aspects of Chemisorption: The Indirect Interaction and the Short-Chain Model" Advisor: Prof. J. Robert Schrieffer)	1973	Univ. of Pennsylvania

III. Experience in Higher Education:

1965-68	Physics/Harvard Univ.	National Merit Scholar
1967	Physics/U. of Washington	Summer laboratory asst. for Prof. E. A. Stern
1968-69	Applied Physics/Harvard U.	NSF Graduate Fellow
1969-70	Physics/U. of Pennsylvania	Assistant Instructor
1971-73	" " "	NSF Graduate Trainee
1973-74	" " "	Postdoctoral Research Associate
1975-77	Physics & Astr./U. of Maryland	Visiting Asst. Professor
1977-80	" " " " "	Assistant Professor
1980-87	" " " " "	Associate Professor
1987-	Physics/U. of Maryland	Professor
1985, Apr-June	Chalmers U. of Tech.,Gothenburg, Sweden	NORDITA - guest researcher
1986 (July, 3 wks)	University of Padua, Italy	Guest Researcher and Lecturer
1987 (May-June, 3 1/2 wks)	" " "	Visiting Professor
2006 (Jan., 2.5 wks)	Univ.B. Pascal Clermont-Ferrand, France	Invited Professor
2016 (fall, several wks)	Physics/EFRC, Harvard Univ.	Visiting Scientist

IV. Experience Other than Higher Education:

1966,68,	Summer Clevite Corp. (Cleveland)	Applied physics research
1986, Feb-June	National Bureau of Standards	Physicist (sabbatical)
1986, June-	" " "	Guest Worker
1988, July-Aug.	Sandia Nat'l Labs (Livermore)	Summer Univ. Faculty
1988-89,	Spensley, Horn, Jubas, Lubitz (LA)	Expert consultant in patent case
1989-90, Apr.-Apr.	Nat'l Science Foundation	Expert/Program Director, Cond. Mat. Theory (p.t.,<1 day/week)
1994, '95, '98, 2002 (@ avr.1 mo.)	IGV/ISG3, FZ Jülich, Germany	Guest Research (Humboldt)

V. Publications: See attached

VI. Professional Activities:

Scientific Committee of the Turkish Physical Society 33rd Internat'l Physics Congress (TPS-33), 2017
Physical Electronics Conference Committee, 2013–16, 1991–93, Advisory Member for 1990; Selection group for Nottingham Prize (best work by fresh Ph.D.), 1989, 1998
Organizing Committee of Nanotech-2016, Baltimore, MD, 2015–16
Co-organizer of Nonequilibrium Interface and Surface Dynamics (nid10), 1 week at U. Maryland, 2010
American Physical Society, Comm. on Meetings (2009–11), APS Insurance Trust Board 2005–9 (chair 2006–8), Audit Comm. (2011–14, chair 2013); *Division of Materials Physics:* Councillor, 2009–12, Secretary-Treasurer, 2003–8, co-rep. to Fed'n of Materials Societies, abstract sorter for March mtgs
US-Israel Binational Science Foundation: science advisor/panelist in solid state physics, 2009, 2011.
Co-organizer of SIAM Minisymposium double-session, Philadelphia, May 2008
NSF Panel Reviewing: Condensed Matter Theory, 2008; Research Experiences for Undergraduates (REU) Site Proposals, 1998; POWRE (Professional Opportunities for Women in Research and Education) Awards, 1997; Presidential Young Investigator Awards in Materials Sciences, 1986
Co-organizer of Nonequilibrium Interface Dynamics: (nid07), 1 week at U. Maryland, 2007
External examiner, Univ. of New Hampshire, 2007: Ph.D. dissertation of Bogdan Diaconescu
Primary organizer, DOE-CMSN Workshop, U. of Maryland, Oct. 2006
Editorial Advisory Board, Surface Science, 2005–2010
Co-organizer of Nonequilibrium Interface Dynamics: Theory and Simulation from Atomistic to Continuum Scales (nid03), 1 week of tutorials and 2 weeks of seminars at U. Maryland, 2003
American Physical Society, DMP Focus Session Co-organizer, 2003, 2015,2016
External evaluator of Ph.D. dissertation, Itay Furman, Hebrew University, 2001
Ph.D. dissertation "opponent," Jarrko Heinonen, Helsinki University of Technology, 2001
Program Committee for 15th International Vacuum Congress (2001)
Materials Research Society, Symposium Co-organizer for Fall 1996 and 1998 Meetings
American Vacuum Society, Member of Local Steering Committee (1977–78), Local Committee for National Symposium (Baltimore, Nov. 1982) — Div. of Surface Science, Executive Committee (1983–85, 1997–99), Chairman of Best Student Contribution Award Comm. for 1984 Nat'l Symp.
American Physical Society, Div. of Solid State Physics, Forum on Physics & Society, Local Committee for March Meeting (Baltimore, March, 1985)
Executive secretary of Greater Washington Solid State Physics Colloquium series, 1987–fall90
External examiner, Howard U., 1984: Ph.D. thesis, Henry Neal: A Theoretical Study of Chemisorption
Federation of American Scientists
Local Committee for Int'l Conf. on Solid Films & Surface (Coll. Pk., June, 1981)
Int'l Program Committee for Conf. on Phase Transitions on Surfaces (Orono, Aug.'81)
Member of Program on Chemical Physics, U. of Maryland, 1982–
Member of Applied Mathematics & Statistics, and Scientific Computation Program

VII. Honors Received:

Outstanding Referee, APS Journals, 2008, inaugural group
Fellow, American Physical Society, Division of Condensed Matter Physics, 1995
Fellow, American Vacuum Society, 1995
Alexander von Humboldt Foundation Distinguished Senior U.S. Scientist Award, 1993
Faculty Research Grant for Fall 1979, from General Research Board of the U. of Maryland
Outstanding Young Men of America, 1979; Nomination for Sloan Foundation fellowships
Listing in American Men and Women of Science
Teutsch Award, U. Pennsylvania, 1969 (before matriculating): Highest score on Ph.D. qualifying exam
John Harvard Honorary Scholarship, Harvard College Honorary Scholarship
Detur Prize (book award for scholastic excellence of the highest grouping)

Major Long-Term Service: Chair of Physical Sciences Program/(& Physics Advisor), 1996–2016
NSF-MRSEC Executive Committee, 1996–2013, as physics faculty coordinator of educational outreach, educational outreach subcommittee member, and then international relations.

A. Research Papers Published (or accepted for publication) in Refereed Journals

A Simple Model of Displacive Ferroelectrics, Michael Cohen and TLE, Phys. Rev. B7, 1932–1949 (1973).

Indirect Interaction Between Adatom Pairs on a Tight-Binding Solid, TLE and J. R. Schrieffer, Phys. Rev. B7, 3629–3648 (1973).

Anisotropic Oscillatory Indirect Interaction Between Adatom Pairs on a Tight-Binding Solid, TLE and J. R. Schrieffer, abst., J. Vac. Sci. Technol. 9, 956 (1972).

Changes in Density of States Caused by Chemisorption, with Implications for Photoemission, Surface Sci. 45, 713–720 (1974).

Short-Chain Model of Chemisorption: Exact and Approximate Results, Phys. Rev. B 11, 577–587 (1975).

Changes in Density of States Caused by Chemisorption, Phys. Rev. B12, 1262–1274 (1975).

Multi-Adatom Effects in Chemisorption Energy of Ordered Overlayers, Phys. Rev. B16, 3411–3414 (1977).

Extended Fine Structure above the Vanadium 2s Appearance Potential Edge, W. T. Elam, P. I. Cohen, TLE, Y. Fukuda, and Robert L. Park, abst., J. Vac. Sci. Technol. 15, 655 (1978).

Comment on K. H. Lau and W. Kohn: "Oscillatory Indirect Interaction between Adsorbed Atoms"-Non-Asymptotic Behavior in Tight-Binding Models at Realistic Parameters, Surface Sci. 75, L161–167 (1978).

Extended Fine Structure Above Vanadium L-Shell Appearance Potential Threshold, P. I. Cohen, TLE, W. T. Elam, Y. Fukuda, and Robert L. Park, Applications of Surface Sci. 1, 538–546 (1978).

Extended Fine Structure Analysis Using Electron Beams, Robert L. Park, P. I. Cohen, TLE, and W. T. Elam, J. Crystal Growth 45, 435–438 (1978).

The Shapes of Islands of Chemisorbed Atoms as a Probe of Long-range Interadatom Interactions, Surface Sci. 83, 141–161 (1979).

Adlayer Induced LEED Beams near Order-Disorder Transitions, L. D. Roelofs, TLE, and R. L. Park, J. Vac. Sci. Technol. 16, 478–482 (1979).

The Three-Atom Non-Pairwise ("Trio") Interaction, with Applications to Monte Carlo Simulations of O/W(110), Surface Sci. 84, L497–504 (1979).

Extended Appearance Potential Fine Structure Analysis: Oxygen on Aluminum (100), M. L. den Boer, TLE, W. T. Elam, Robert L. Park, L. D. Roelofs, and G. E. Laramore, Phys. Rev. Lett. 44, 496–500 (1980).

Extended Appearance Potential Fine Structure Analysis of Oxidized Metal Surfaces, M. L. den Boer, TLE, W. T. Elam, Robert L. Park, L. D. Roelofs, and G. E. Laramore, J. Vac. Sci. Technol. 17, 59–62 (1980).

O/Ni(111): Adlayer Phases and Binding Sites, extended abst., L. D. Roelofs, TLE, P. E. Hunter, A. R. Kortan, Robert L. Park, and R. M. Roberts, J. Vac. Sci. Technol. 17, 231–232 (1980).

Effect of the Central Atom Potential on the Extended Fine Structure above Appearance Potential Thresholds, G. E. Laramore, TLE, L. D. Roelofs, and Robert L. Park, Phys. Rev. B21, 2108–2121 (1980).

Two-Dimensional Chemisorbed Phases, L. D. Roelofs, A. R. Kortan, TLE, and Robert L. Park, J. Vac. Sci. Technol. 18, 492–499 (1981).

Oxidation Studies by Extended Appearance Potential Fine Structure (EAPFS), summary abst., TLE, M. L. denBoer, J. F. Morar, and Robert L. Park, J. Vac. Sci. Technol. 18, 490–491 (1981).

Critical Exponents of a 4-State Potts Chemisorbed Overlayer: p(2×2) Oxygen on Ni(111), L. D. Roelofs, A. R. Kortan, TLE, and Robert L. Park, Phys. Rev. Lett. 46, 1465–1468 (1981).

Response to M. Schick, Oxygen on Ni(111): A Transition of the Heisenberg Model with Cubic Anisotropy, L. D. Roelofs, N. C. Bartelt, and TLE, Phys. Rev. Lett. 47, 1348 (1981).

Extended Absorption Fine Structure Analysis of Surface Structure, Appl. Surface Sci. 11/12, 42–63 (1982).

(2×2) Phase Transitions on Honeycomb Lattices, N. C. Bartelt, TLE, and L. D. Roelofs, extended abst., J. Vac. Sci. Technol. A 1, 1217-1218 (1983).

On the Optimization of Data End Points and Taper Width in Extended Absorption Fine Structure Analysis, S. P. Hershfield and TLE, Phys. Rev. B29, 1048–1049 (1984).

Relationship Between Many-Parameter Lattice Gas Systems and Simpler Models: Easy Approximations for T_c, N. C. Bartelt, TLE, and E. D. Williams, extended abst., J. Vac. Sci. Technol. A2, 1006–7 (1984).

Pseudo-Dipole Selection Rules for Extended Fine Structure in APS: Calculations and Applications, M. J. Mehl, TLE, and G. W. Bryant, extended abst., J. Vac. Sci. Technol. A2, 862–863 (1984).

Triangular Lattice Gas with First- and Second-Neighbor Exclusions: Continuous Transitions in the Four-State Potts Universality Class, N. C. Bartelt and TLE, Phys. Rev. B30, 5339–5341 (1984).

Using LEED to Study Specific Heat Anomalies of Adsorbed Overlayers, N. C. Bartelt, TLE, and L. D. Roelofs, Surface Sci. 149, L47–52 (1985).

Measurement of the Specific Heat Critical Exponent Using LEED, N. C. Bartelt, TLE, and L. D. Roelofs, in M. A. Van Hove and S. Y. Tong, ed. The Structure of Surfaces-I (Springer Series in Chemical Physics, Berlin, 1985) [refereed conference paper] 357–360.

Studying Surface Phase Transitions with Probes of Short Range Order, N. C. Bartelt, TLE, and L. D. Roelofs, extended abst., J. Vac. Sci. Technol. A3, 1568–1569 (1985).

Phase Diagram of Selenium Adsorbed on the Ni(l00) Surface: A Physical Realization of the Ashkin-Teller Model, Per Bak, P. Kleban, W. N. Unertl, J. Ochab, G. Akinci, N. C. Bartelt, and TLE, Phys. Rev. Lett. 54, 1539–1542 (1985).

Surface Extended Electron Loss Fine Structure: Dependence on Incident Electron Energy and Collection Solid Angle, Y. U. Idzerda, Ellen D. Williams, TLE, and Robert L. Park, Surface Sci. 160, 75–86 (1985).

Theory and Feasibility of Using LEED to Study Specific Heat Anomalies at Surface Phase Transitions, N. C. Bartelt, TLE, and L. D. Roelofs, Phys. Rev. B 32, 2993–3002 (1985).

Two-Dimensional Ordering of Chlorine on Ag(100), D. E. Taylor, E. D. Williams, R. L. Park, N. C. Bartelt, and TLE, Phys. Rev. B 32, 4653–4659 (1985).

Phase Diagrams for H/Ni(111) Based on Model Interactions: Effects of Strong Long-Range Attractions, L. D. Roelofs, TLE, N. C. Bartelt and J. D. Shore, Surface Sci. 176, 295–318 (1986).

A Transfer Matrix Approach to Estimating Coverage Discontinuities and Multicritical Print Positions in Two-Dimensional Lattice Gas Phase Diagrams, N. C. Bartelt, TLE, and L. D. Roelofs, Phys. Rev. B 34, 1616–1623 (1986).

Finite-Size Effects on the Critical Structure Factor of the Two-Dimensional Ising Model, N. C. Bartelt and TLE, J. Phys. A 19, 1429–1438 (1986)

Comment on "Reliability of Low-Energy Electron Diffraction for Studies of Surface Order-Disorder Phenomena", N. C. Bartelt, TLE, and L. D. Roelofs, Phys. Rev. Lett. 56, 2881 (1986).

Structure Factors Associated with the Continuous Melting of 2-D Lattice Gases: Models with $(\sqrt{3}\times\sqrt{3})R30^{o}$ and p(2×2) Ordered States on Triangular Nets, N. C. Bartelt, TLE, and L. D. Roelofs, Phys. Rev. B 35, 1776–1790 (1987).

On the Universality Class of Planar Self-Avoiding Surfaces with Fixed Boundaries, U. Glaus and TLE, J. Phys. A 20, L105–L111 (1987).

Structure Factors Associated with the Melting of a (3×1) Ordered Phase on a Centered-Rectangular Lattice Gas: Effective Scaling in a Three-State Chiral Clock-Like Model, N. C. Bartelt, TLE, and L. D. Roelofs, Phys. Rev. B 35, 4812–4818 (1987).

Structure Factors Associated with Melting of a p(2×2) Ordered Phase on a Honeycomb Lattice Gas: Possible Critical Scattering at a First-Order Transition, N. C. Bartelt, TLE, and L. D. Roelofs, Phys. Rev. B 35, 6786–6791 (1987).

Structure Factors of 2-d Lattice Gases: Theoretical Investigation of Some Aspects of the Capability of LEED to Measure Critical Phenomena of Surface Phase Transitions, N. C. Bartelt, TLE, and L. D. Roelofs, extended abstract, J. Vac. Sci. Technol. A 5, 647–648 (1987).

Reaction and Structure of Ti on Si Probed by Surface Extended-Loss Fine Structure and Extended Appearance Potential Fine Structure, Y. U. Idzerda, E. D. Williams, TLE, and R. L. Park, J. Vac. Sci. Technol. A 5, 847–851 (1987).

Proposed Decorated Lattice-Gas Model of H/Pd(100), N. C. Bartelt and TLE, Phys. Rev. Lett. 59, 244 (1987) [Comment].

Wavevector Scaling, Surface Critical Behavior, Interface Wetting, and Amplitude Ratios, A. L. Stella, X.-c. Xie, TLE, and N. C. Bartelt, Z. Physik B 67, 357–361 (1987).

Electron-Induced Extended-Fine-Structure Measurements of Thin-Film Growth and Reaction, Y. U. Idzerda, E. D. Williams, TLE, and R. L. Park, Phys. Rev. B 36, 5941–5948 (1987).

Angular Momentum Branching Ratios for Electron-Induced Ionization: Atomic and Model Calculations, M. J. Mehl and TLE, Phys. Rev. B 36, 9011–9024 (1987).

Critical Phenomena of Surface Phase Transitions: Theoretical Studies of the Structure Factor, N. C. Bartelt, TLE, and L. D. Roelofs, The Structure of Surfaces-II, J. F van der Veen and M. A. Van Hove, eds. (Springer, Berlin, 1988) [refereed conference paper], 475–479.

An Unexpected Low-Coverage c(2×2) Phase, N. C. Bartelt, L. D. Roelofs, and TLE, Surface Sci. Letters, 221, L750–L758 (1989).

Phase Diagram and Critical Properties of a 2-d Lattice Model of Oxygen Ordering in $YBa_2Cu_3O_z$, N. C. Bartelt, TLE, and L. T. Wille, Phys. Rev. B 40, 10759–10765 (1989).

Phase Diagram and Critical Properties of a 2-d Lattice Model of Oxygen Ordering in $YBa_2Cu_3O_z$, N. C. Bartelt, TLE, and L. T. Wille, Physica C 162–164, 871–872 (1989).

Indirect Interactions of H/Ni(111) Using Embedded Atom Method, TLE, M. S. Daw and S. M. Foiles, Surface Sci. 227, 114–122 (1990).

Disordering of the (3×1) Reconstruction on Si(113) and the Chiral Three-state Potts Model, Y.-N. Yang, E. D. Williams, R. L. Park, N. C. Bartelt, and TLE, Phys. Rev. Lett. 64, 2410–2413 (1990).

The Influence of Step-Step Interactions on Step Wandering, N. C. Bartelt, TLE, and E. D. Williams, Surface Sci. Letters 240, L591–598 (1990).

Diffraction from Stepped Surfaces in Thermal Equilibrium, N. C. Bartelt, TLE, and E. D. Williams, Surface Sci. 244, 149–159 (1991).

Disordering of the (3×1) Reconstruction of Si(113): Realization of the Chiral Three-State Potts Model, Y.-N. Yang, N.C. Bartelt, TLE, R. L. Park, and E. D. Williams, in S. Y. Tong, M. A. Van Hove, X. Xide, and K. Takayanagi, eds., The Structure of Surfaces-III (Springer Series in Chemical Physics, Berlin, 1991) [refereed conference paper] 497–501.

Simulation & STM Studies of Equilibrium Properties of Vicinal Surfaces, TLE, N. C. Bartelt, J. L. Goldberg, B. Joós, X.-S. Wang, and E. D. Williams in S. Y. Tong, M. A. Van Hove, X. Xide, and K. Takayanagi, eds. The Structure of Surfaces-III (Springer Series in Chemical Physics, Berlin, 1991) [refereed conference paper] 486–491.

Terrace Width Distributions on Vicinal Si(111), X.-S. Wang, J. L. Goldberg, N. C. Bartelt, TLE, and E. D. Williams, Phys. Rev. Lett. 65, 2430–2433 (1990).

First-order Transitions between Surface Phases with Different Step Structures, N. C. Bartelt, TLE, and C. Rottman, Phys. Rev. Lett. 66, 961 (1991) [Comm't].

Distribution of Terrace Widths on a Vicinal Surface in the One-Dimensional Free-Fermion Model, B. Joós, TLE, and N. C. Bartelt, Phys. Rev. B 43, 8153–8162 (1991).

Self-Avoiding Random Surfaces: Monte Carlo Study with Oct-tree Data-structure, J. O'Connell, D. Libes, F. Sullivan, E. Orlandini, M. C. Tesi, A. L. Stella, and TLE, J. Phys. A 24, 4619–4635 (1991).

Step-Doubling and Related Transitions on Vicinal Surfaces, TLE, T. M. Jung, N. C. Bartelt, E. D. Williams, and C. Rottman, J. Vac. Sci. Technol. A 10, 2600–2605 (1992).

The Equilibration of Terrace Width Distributions on Stepped Surfaces, N. C. Bartelt, J. L. Goldberg, TLE, and E. D. Williams, Surface Sci. 273, 252–260 (1992).

The Role of Step Collisions on Diffraction from Vicinal Surfaces, N. C. Bartelt, TLE, and E. D. Williams, Surface Sci. 276, 308–324 (1992).

Self-Avoiding Surfaces, Topology, and Lattice Animals, A. L. Stella, E. Orlandini, I. Beichl, F. Sullivan, M. C. Tesi, and TLE, Phys. Rev. Lett. 69, 3650–3653 (1992).

Simple Formula for Miller Indices of Periodically Kinked and Stepped fcc Surfaces, David R. Eisner and TLE, Surface Sci. 286, L559–L563 (1993).

Thermodynamics and Statistical Mechanics of the Faceting of Stepped Si(111), E. D. Williams, R.J. Phaneuf, Jian Wei, N. C. Bartelt, and TLE, Surface Sci. 294, 219–242 (1993); 318, 451–452 (1994).

Energies of Steps, Kinks, and Defects on Ag{100} and {111} Using Embedded Atom Method, and Some Consequences, R. C. Nelson, TLE, S. V. Khare, and P. J. Rous, Surface Sci. 295, 462–484 (1993).

The Brownian Motion of Steps on Si(111), N. C. Bartelt, J. L. Goldberg, TLE, E. D. Williams, J. C. Heyraud, and J. J. Métois, Phys. Rev. B48, 15453–15456 (1993).

Novel Critical Behavior in Inhomogeneous Systems, A. L. Stella, Michael R. Swift, Jacques G. Amar, TLE, M. W. Cole, and Jayanth R. Banavar, Phys. Rev. Lett.71, 3818–3821 (1993).

Terrace-Width Distributions on Vicinal Ag(110): Evidence of Oscillatory Interactions, W. W. Pai, J. S. Ozcomert, N. C. Bartelt, TLE, and J. E. Reutt-Robey, Surface Sci. 307–309, 747–754 (1994).

Measuring Surface Mass Diffusion Coefficients by Observing Step Fluctuations, N. C. Bartelt, TLE, and E. D. Williams, Surface Sci. 312, 411–421 (1994).

Energetics of Steps and Kinks on Ag and Pt Using Equivalent Crystal Theory (ECT), S. V. Khare and TLE, Surface Sci. 314, L857–L865 (1994).

Theory of Electromigration on Metals: Application to Self-Electromigration on Cu(111), P. J. Rous, TLE, and E. D. Williams, Surface Sci. 315, L995–L1002 (1994).

Dynamics of Step Doubling: Simulations for a Simple Model and Comparison with Experiment, S. V. Khare, TLE, and N. C. Bartelt, Surface Sci. 339, 353–362 (1995).

Diffusion of Monolayer Adatom and Vacancy Clusters: Langevin Analysis and Monte Carlo Simulations of Their Brownian Motion, S. V. Khare, N. C. Bartelt, and TLE, Phys. Rev. Lett. 75, 2148–51 (1995).

Phase Diagram of a 2-d Lattice Model of Oxygen Ordering in $YBa_2Cu_3O_z$, with Realistic Interactions, D. J. Liu, TLE, P. A. Sterne, and L. T. Wille, Phys. Rev. B 52, 9784–9792 (1995).

Bending-Rigidity-Driven Transition and Crumpling-Point Scaling of Lattice Vesicles, E. Orlandini, A. L. Stella, TLE, M. C. Tesi, I. Beichl, and F. Sullivan, Phys. Rev. E 53, 5800–5807 (1996).

Oscillatory Interaction of Steps on W{110}, Wei Xu, James B. Adams, and TLE, Phys. Rev. B 54, 2910–2916 (1996).

Brownian Motion and Shape Fluctuations of Single Layer Adatom and Vacancy Clusters on Surfaces: Theory and Simulations, S. V. Khare and TLE, Phys. Rev. B 54, 11752–11761 (1996).

Characterization of p-n Junctions and Surface States on Silicon Devices by Photoemission Electron Microscopy, M. Giesen, R. J. Phaneuf, E. D. Williams, TLE, and H. Ibach, Appl. Phys. A 64, 423–430 (1997).

Stress Relief in Reconstruction, C. E. Bach, M. Giesen, H. Ibach, and TLE, Phys. Rev. Lett. 78, 4225–4228 (1997).

Unified View of Step-Edge Kinetics and Fluctuations, S. V. Khare and TLE, Phys. Rev. B 57, 4782–4797 (1998).

Photoemission Electron Microscopy of Schottky Contacts, M. Giesen, R. J. Phaneuf, E. D. Williams, and TLE, Surface Sci. 396, 411–421 (1998).

Evolution of Surface Morphology of Vicinal Si(111) Surfaces After Aluminum Deposition, C. Schwennicke, X.-S. Wang, TLE, and E. D. Williams, Surface Sci. 418, 22–31 (1998).

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Edge Diffusion During Growth: the Kink Ehrlich-Schwoebel Effect and Resulting Instabilities, O. Pierre-Louis, M. R. D'Orsogna, and TLE, Phys. Rev. Lett. 82, 3661–3664 (1999).

Analysis of Terrace Width Distributions on Vicinal Copper Surfaces Using the Wigner Surmise: Comparison with Gaussian Approximation, M. Giesen and TLE, Surface Sci. 449, 191-206 (2000).

Thermal Decay of Silicon Mounds on the Si(111)7×7 Surface, A. Ichimiya, K. Hayashi, E.D. Williams, TLE, M. Uwaha, and K. Watanabe, Phys. Rev. Lett. 84, 3662–3665 (2000).

Extraction of Step-Repulsions Strengths from Terrace Width Distributions: Statistical and Analytic Considerations, H. L. Richards, Saul D. Cohen, TLE, and M. Giesen, Surface Sci. 453, 59–74 (2000).

Electromigration of Single-Layer Clusters, O. Pierre-Louis and TLE, Phys. Rev. B 62, 13697–13706 (2000).

Influence of the Electrochemical Potential on Energy Landscapes Near Step and Island Edges: Ag(100) and Ag(111), M. I. Haftel and TLE, Appl. Surf. Sci. 175–6, 49–54 (2001).

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Terrace-Width Distributions and Step-Step Repulsions on Vicinal Surfaces: Symmetries, Scaling, Simplifications, Subtleties, and Schrödinger, TLE, H. L. Richards, S. D. Cohen , and O. Pierre-Louis, Surf. Sci. 493, 460-474 (2001). [cond-mat/0012274].

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Surface-state Mediated Three-adsorbate Interaction, P. Hyldgaard and TLE, Europhys. Lett. 59, 265-271 (2002).

Dynamics of Step Fluctuations on a Chemically Heterogeneous Surface of Al/Si(111) - (√3×√3), I. Lyubinetsky, D. B. Dougherty, TLE, and E. D. Williams, Phys. Rev. B 66, 085327 [5pp.] (2002).

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University of Washington, Seattle, Jan. 1986: Simulations of Two-Dimensional Lattice Gases: Looking at and beyond Landau Theory
National Bureau of Standards, Gaithersburg, Spring 1986: 5-lecture series on phase transitions at surfaces
University of Padua, Italy, June 1986: 3-lecture series on phase transitions in two dimensions
10th John Hopkins Workshop on Current Problems in Particle Theory: Infinite Lie Algebras and Conformal Invariance in Condensed Matter and Particle Physics, Bad Honnef, Fed. Rep. of Germany, Sept. 1986:
1) Numerical Corroborations of Some Predictions of Conformal Invariance, Background on Critical Phenomena of 2-D Phase Transitions, and Illustrative Monte Carlo Calculations
2) Theoretical View of Current Experimental Studies of Critical Properties Related to Conformal Invariance
IFF, KFA Jülich, West Germany, Sept. 1986: Phase Diagrams and Critical Properties of Chemisorbed Atoms
University of Mainz, West Germany, Sept. 1986: Critical Phenomena of Chemisorbed Atoms: Monte Carlo Assessment of What is Measurable
U. of California, Berkeley, Jan. 1987: Phase Transitions of Chemisorbed Atoms: What Can Be Learned about and from 2-D Critical Properties?
Sandia, Livermore, CA, Jan. 1987: Phase Diagrams of Chemisorbed Atoms: What Can Be Learned about Lateral Interactions?
University of Padua, June 1987: 10-hour course on 2-d Lattice Gas Models and Physical Realizations
Exxon, Annandale, NJ, May 1988: Search for Simplicity in Surface Science: Phase Transitions of Chemisorbed Atoms and of Vicinal Si(111)
Seventh Colloquium on Group Theoretical Methods in Physics, Montreal, June 1988-invited but could not attend: Impact of Ideas from Conformal Invariance on Surface Physics
SIAM Symposium, Minneapolis, MN, July 1988: Scaling in Ordering at Surfaces: Prospects for Experimental Observation
Case Western Reserve U., Cleveland, Nov. 1989: Critical Behavior of 2-d Systems: Theory and Experiment for Chemisorption, Surface Reconstruction, Coadsorption, and Oxygen Ordering in $Y_1Ba_2Cu_3O_{7-\delta}$
Temple U., Philadelphia, Feb. 1990: Ordering and Structure on Surfaces: Checkerboards, Stairways, and Perestroika in Nature (colloq.)
Clarkson U., Potsdam, NY, Mar, 1990: Stepped Surfaces from a Surface Science Perspective: Using Simple Models to Understand LEED and STM Data
Case Western Reserve U., Cleveland, Nov. 1990: Equilibrium Properties of Stepped Surfaces
Boston U., Boston, Jun. 1991: Equilibrium Properties of Stepped Surfaces: Wandering, Pairing, and Bunching of Steps and 1-d Quantum Mechanics
Whiskered Microstructures Workshop, Pittsburgh, Oct. 1991: Thoughts and Questions for Theorists Regarding the Effect of Gravity on the Deposition of Thin Films
Rensselaer Polytechnic Institute, Troy, NY, Jan. 1992: Stepped Surfaces of Solids: Novel Phase Transitions, Familiar Physics (colloq.)
U. of Maryland, Baltimore County, Mar. 1992: Phase Transitions on Flat and Stepped Surfaces: An Overview
6th Nordic Symposium on Computer Simulation, Nyborg, Denmark, May 1992: Computational Statistical Physics of Surfaces and 2-D Systems: Accomplishments and Limitations [keynote speaker]
Danish Technical University, Lyngby, Denmark; NORDITA, Copenhagen, Denmark; and Chalmers University of Technology, Gothenburg, Sweden, May 1992: Equilibrium Statistical Mechanics of Stepped Surfaces: Familiar Physics in a New Guise
CPiP, Peterborough, Ont., Canada, June 1992:
American Physical Society, Seattle, March 1993: Semiempirical and Monte Carlo Calculations of Vicinal Surfaces

Pennsylvania State Univ., State College, April 1993: Parametrizing Simple Models of Stepped Surfaces: Energy Estimates and Implications for Morphology, Transport, and Doubling Transitions
IGV, Forschungszentrum Jülich, Germany, Aug. 1993: Confronting Experiments on Stepped Surface with Model Calculations: From Statics toward Kinetics
Howard U., Washington, D.C., Oct. 1993: Stepped Surfaces of Si and Ag: Familiar Behavior in a Novel Guise
American Physical Society, Columbia, S.C., Nov. 1993: Statistical Mechanical Description of Steps
American Vacuum Society, Orlando, FL, Nov. 1993: Step Behavior on Silicon Surfaces (E.D. Williams, R.J. Phaneuf, N.C. Bartelt, Y.-N. Yang, TLE, & E. Bauer)
Case Western Reserve U., Cleveland, Nov 1993: Phase Separation and Brownian Motion...on Stepped Surfaces!
Workshop on Dynamical Phenomena at Crystal Surfaces, U. of California, Irvine, June 1994: Step Fluctuations as Brownian Motion: Langevin Analysis and Monte Carlo Simulations
IGV, Forschungszentrum Jülich, Germany, Aug. 1994: Confronting Experiments on Stepped Surface with Theory, Revisited: New Results from Maryland, Mostly Dynamics
University of Mainz, Germany, August 1994: Using Monte Carlo Simulations to Understand Equilibrium and Kinetic Properties of Stepped Surfaces
University of Cologne, Germany, Aug. 1994: Stepped Crystal Surfaces: Fermion Description, Phase Transitions, and Brownian Motion
Florida State U., Tallahassee, Oct. 1994: Physics of Stepped Surfaces: Fermions, Phase Transitions, and Brownian Fluctuations (colloq.)
U. of Florida, Gainesville, Oct. 1994: Physics of Stepped Surfaces: Fermions, Phase Transitions, and Brownian Fluctuations (colloq.)
Michigan State U., East Lansing, Nov. 1994: Stepped Surfaces: Confronting Experiment with Theory
University of Virginia, Charlottesville, Dec. 1994: Survey of Stepped Surfaces
FOM, Amsterdam, Netherlands, June 1995: Dynamics of Steps: Fluctuations, Doubling Transitions, and Diffusion of Monolayer Clusters
U. of Ulm, Germany, June 1995: Dynamics of Steps: Fluctuations on Vicinal Surfaces, Doubling Transitions, and Diffusion of Monolayer Adatom/Vacancy Clusters
IGV, Forschungszentrum Jülich, Germany, June 1994: Step Fluctuations and Island Diffusion: Langevin Analysis and Monte Carlo Simulations
U. of Hannover, Germany, June 1995: Physics of Stepped Surfaces: Fermions, Phase Transitions, and Brownian Motion
Fritz Haber Institute, Berlin, Germany, June 1995: Stepped Surfaces of Metals and Semiconductors: From Equilibrium Statistical Mechanics to Dynamics
Institute for Physical Science and Technology, U. of Maryland, College Park, Feb. 1996: Fluctuations of Steps on Surfaces: From Equilibrium Analysis to Step Unbunching and Cluster Diffusion
Cornell University, Ithaca, April 1996: Fluctuations of Steps on Surfaces: From Equilibrium Analysis to Step Unbunching and Cluster Diffusion
Workshop on Determination of Surface Morphology by High Resolution Diffraction, Schloss Wohldenberg, Hildesheim, Germany, Sept. 1996: Phase Transitions on Surfaces: From Flat to Vicinal to Kinetics
Case Western Reserve U., Cleveland, Nov. 1996: Brownian Motion of Adatom or Vacancy Islands on Surfaces: Experiments and Theoretical Voronoi cell patterns: Theoretical model and applications, Diego Luis González and TLE, Phys. Rev. E 84, 051135 [10 pp] (2011) [pdf]; arXiv 1110.3994. s
Catholic University, Washington, DC, Feb. 1997: Statistical Physics of Stepped Surfaces: Fermions, Phase Transitions, and Brownian Fluctuations (colloq.)
Hong Kong University of Science and Technology, Mar. 1997: Fluctuations of Steps on Surfaces: Unified Approach to Equilibrium Analysis, Step Unbunching, and Cluster Diffusion
U.S.–Japan Seminar on Surface Dynamics & Structure in Epitaxial Growth, Nagoya, Japan, Mar. 1997:
1) Diffusion of Single-Layer Island Clusters
2) Long-Range Interactions on Vicinal Surfaces
Japanese Physical Society, Mar. 1997: Step Fluctuations and Island Diffusion: A Unified View

CECAM Workshop, Lyon, France, Sept. 1997: Fluctuations of Steps on Vicinal Surfaces: Crossover Between Simple Limits and Implications for Experiments (TLE and S.V. Khare)
Materials Research Society, San Francisco, April 1998: Fluctuations of Step Edges: Revelations about Atomic Processes Underlying Surface Mass Transport (TLE, S.V. Khare, and O. Pierre-Louis)
University J. Fourier, Grenoble, France, July 1998:
IGV, Forschungszentrum Jülich, Germany, Aug. 1998: Terrace-Width Distributions on Vicinal Surfaces Revisited: Wigner-Ibach Surmises, Related Useful Results for Extracting Step-Step Interactions, and Physical Applications
Twente University, Enschede, Netherlands, Aug. 1998: Unified Treatment of Step Fluctuations on Vicinal Surfaces: Limiting Cases and Crossover Behavior
University of Essen, Germany, Aug. 1998: Step Fluctuations on Vicinal Surfaces: Theory Confronts Experiment
Texas A&M, College Station, Oct. 1998: Fermions, Phase Transitions, and Brownian Fluctuations on Stepped Surfaces: Familiar Physics in a Novel Guise (colloq)
Rice Univ., Houston, Oct. 1998: Step Fluctuations on Vicinal Surfaces: Revelations about Step Interactions and Transport Properties
U. of Maryland Frontiers in Physics series, Nov. 1998: Surface Physics: Steps on Tilted Crystals
Nagoya (Japan) Univ., Jan. 1999: Deducing Interactions Between Steps from Terrace-Width Distributions: Review and New Results from Random Matrix Theory
George Mason Univ., Apr. 1999: Statistical Properties of Stepped Surfaces: Melding Quantitative Experiments, Simple Analytical Models, and Computer Simulations
Simon Fraser University, Burnaby, BC, Canada: July 1999: Terrace-Width Distributions on Stepped Surfaces: Familiar Physics in a Novel Guise
University of Washington, Seattle, Oct. 1999: Interpreting Terrace-Width Distributions of Stepped Surfaces: From Simple to Subtle 1D Models
Technion, Haifa, Israel, Apr. 2000: Decay of Nanomounds on Si(111) [informal]
Hebrew University, Jerusalem, Apr. 2000: Terrace Width Distributions on Stepped Surfaces
Weizmann Institute, Rehovot, Israel, Apr. 2000: Implications of Random Matrix Theory for Terrace Width Distributions [invited informal discussions]
Case Western Reserve U., Cleveland, June, 2000: Terrace-Width Distributions on Stepped Surfaces: Simple Results, Subtleties, and Mysteries
International Symposium on Surface and Interface--Properties of Different Symmetry Crossing--2000, Nagoya, Japan, Oct. 2000: Terrace-Width Distributions and Step-Step Repulsions on Vicinal Surfaces: Symmetries, Scaling, Simplifications, Subtleties, and Schrödinger
Helsinki University of Technology, Helsinki, Finland, Jan. 2001: 1) Terrace-Width Distributions and Step Interactions on Stepped Surfaces: Familiar Physics in a Novel Guise [dept. colloq.]; 2) Aspects of Unstable Growth and Decay of Nanostructures on Crystalline Surfaces [group seminar]
American Physical Society, Seattle, Mar. 2001: Unstable Growth and Decay of Nanostructures on Crystalline Surfaces
Pennsylvania State Univ., April 2001: Terrace-Width Distributions on Stepped Surfaces: Familiar Physics in a Novel Guise
Sandia National Labs, Albuquerque, Oct. 2001: New Theoretical and Experimental Results on Step Fluctuations: Step-Step Correlation Functions and Analysis of Steady-State High-T Vicinal Si(111)
Int'l Workshop on Atomic-Scale Surface Dynamics of Advanced Materials, Izu-nagaoka, Japan, Nov. 2001: Si(111) Step Fluctuations at High Temperature: Is Steady-State Evaporation-Adsorption the Same as Equilibrium?
Keio University, Yokohama, Japan, Nov. 2001: Terrace-Width Distributions on Stepped Surfaces: Simple and Subtle Models
University of Tokyo, Japan, Nov. 2001: Indirect Interactions Mediated by Surface States: Adatom-Adatom and Step-Step Effects
Nagoya (Japan) Univ., Nov. 2001: Progress and Problems in the Study of Step Correlations on Vicinal Surfaces
[Workshop on Morphological Evolution of Crystalline Surfaces, Rosh Pina, Israel, originally scheduled for June 2001, postponed to April 2002, then cancelled]

ISG-3, Research Center, Jülich, Germany, July 2002: Step Continuum Model: A Consistent Picture of Surface Structure Coarser than Atomic Scale

Rhineland-Westphalia Tech. Univ., Aachen, Germany, July 2002: Terrace-Width Distribution on Stepped Surfaces as a Many-Particle Correlation Function: From Mean Field to "Wigner Surmise"

U. of Maryland, Informal Statistical Physics Seminar, Oct. 2002: Terrace-Width Distributions on Stepped Surfaces: From Mean Field to "Wigner Surmise"

Frontiers in Condensed Matter Theory, State College, PA, April 2003: Distribution of Fermions in 1D: From Random Matrix Theory to Stepped Surfaces, with Nods to Nanotubes and Econophysics

Nonequilibrium Interface Dynamics: Theory and Simulation from Atomistic to Continuum Scales, U. Maryland, Oct. 2003: 1) Distribution of Step Spacings on Misoriented Surfaces: Fermions in in 1D, From Simple Models to Random Matrix Theory (tutorial); 2) Fluctuations of Steps and Island Edges: Langevin Analysis Confronts Experimental and Numerical Data (tutorial); 3) Asymmetry and Subtleties of Step Stiffness: Novel Findings and Their Implications

Brown U., Feb. 2004: Parametrizing the Step-Continuum Model: Melding Statistical Mechanics with Energy Calculations and Experiments on Stepped Surfaces

Lorentz Workshop on Collective Aspects of Stochastic Non-Equilibrium Phenomena at Surfaces and Interfaces, Leiden, Netherlands, June 2004: 1) Interactions Mediated by Surface States: From Pairs and Trios to Adchains and Ordered Overlayers; 2) Terrace Width Distributions: A Y

ISG-3, Research Center, Jülich, Germany, June 2004: Distributions and Fluctuations of Steps on Misoriented Surfaces: Similarities to & Differences from Polymers in 2 D

George Mason Univ., School of Computational Sciences Colloq., Oct. 2004: Distribution of Terrace Widths on Misoriented Surfaces: Combining Computational and Analytical Approaches to Investigate Universal Properties

Nanoscale Material Interfaces: Experiment, Theory and Simulation, National University of Singapore, Jan. 2005: Distributions of Terrace Widths on Misoriented Surfaces: Multipronged Theory Approaches to Studying Fluctuations in Conjunction with Quantitative Experiments

Hong Kong U. of Science & Technology, Jan. 2005: Understanding Experimental Distributions of Terrace Widths on Misoriented Surfaces: From Simple to Sublime Theory, Equilibrium and Beyond

Vth Stranski-Kaischew Surface Science Workshop (SK-SSW'2005): "Nanophenomena at Surfaces - Fundamentals of Exotic Condensed Matter Properties", Pamporovo Ski Center, Bulgaria, Feb. 2005: Effects of Metallic Surface States on Surface Morphology, Growth, and Nanostructure

CMSN Workshop, Madison, WI, Oct. 2005: Straddling Atomistic/Discrete and Nano/Mesoscale Perspectives on Vicinal Surfaces: Using the Step-Continuum Model to Study the Statistical Mechanics of Steps

U. Central Florida, Orlando, Oct. 2005: Ways to View Steps on Crystalline Surfaces: Using Familiar Models to Transcend Atomic Scale (colloq)

IPAM, Los Angeles, Nov. 2005: Straddling Atomistic/Discrete/Lattice Gas and Nano/Mesoscale Perspectives on Islanded and Vicinal Surfaces: Using the Step-Continuum Model to Study the Statistical Mechanics of Steps (poster since post-deadline)

U. Blaise-Pascal, Clermont-2, Aubière, France, Jan. 2006: Manière de Regarder des Marches sur les Surfaces Cristallines: Une Physique Familière sous une Nouvelle Apparence (in French)

95th Statistical Mechanics Conference, Rutgers, Piscataway, May 2006: Ferrari, Prähofer, and Spohn's Remarkable Scaling Results Results for Facet-Edge Fluctuations (with Alberto Pimpinelli, M. Degawa, T.J. Stasevich,W.G. Cullen, and E.D. Williams)

Iowa State U., Ames, June 2006: Step Fluctuations on Pb(111) and Similar Crystals: Recent Results

2nd International Workshop on Physics and Technology of Thin Films (IWTF2), Prague, Czech Republic, June 2006: Going Beyond Minimal Models of Step Fluctuations and Lattice-Gas Interactions: Confronting Reality in the Step-Continuum Model

CMSN Workshop, College Park, MD, Oct. 2006: Scaling of Capture-Zone Distributions: Applying Ideas from Universality of Fluctuation Phenomena to Islanding

Nonequilibrium Interface Dynamics: Theory and Simulation from Atomistic to Continuum Scales (nid07), U. Maryland, April 2007: Application of the Wigner Distribution to Non-equilibrium Problems at Surfaces: Relaxation, Growth, and Scaling of Capture Zones

U. New Hampshire, Durham, NH, April 2007: Steps on Crystalline Surfaces: From Elementary Models to Universal Fluctuation Phenomena

Fluctuations and Scaling in Materials, Todi, Umbria, Italy, satellite meeting to Statphys23, July 2007: Fluctuations and Scaling of Steps on Crystal Surfaces: Revelations from Random Matrix Theory

CMSN Workshop, Iowa State U, Ames, IA, Oct. 2007: Impurity Decoration for Crystal Shape Control: C_{60} on Ag(111)

Howard U., Washington, DC, Nov. 2007: Steps on Crystalline Surfaces: Practical Applications and Intriguing Physics

SIAM Minisymposium, Philadelphia, May 2008: Application of the Wigner Surmise to Stepped Surfaces: Theoretical and Practical Issue

Chalmers University of Technology, Gothenburg, Sweden, June 2008: Steps on Crystal Surfaces: From Elementary Models to Universal Fluctuation Phenomena: *What does the time between buses in Cuernavaca have to do with step separations?*

Cargèse Summer School on NanoSteps: Self-organized nanostructures on crystal surfaces, Corsica, France, July 2008: 1) Interactions Between Steps: Entropic, Elastic, and Electronic, and Implications for Spatial Correlations 2) Step Fluctuations in Equilibrium 3) Applications of the Generalized Wigner Distribution to Nanostructures on Surfaces: Universal Fluctuation Phenomena (with Alberto Pimpinelli, Rajesh Sathiyanarayanan, Ajmi BHadj Hammouda, and Kwangmoo Kim) 4) Influence of Impurities on Capture Zones and Scaling in Thin-film Growth (with Ajmi BH. Hamouda, R. Sathiyanarayanan, A. Pimpinelli), 5) Effects of Short-range Behavior on Interaction Strength Measurements: A Study Using Monte Carlo Simulations (with Rajesh Sathiyanarayanan, Ajmi BHadj Hammouda, and Alberto Pimpinelli)

CMSN Workshop, Gatlinburg, TN, Oct. 2008: Small Pyramidal Mounds on Cu(001): Role of Impurities in Growth

Hebrew University, Jerusalem, May 2009: Evolution of Size Distributions during Relaxation and Growth on Surfaces

Technion, Haifa, Israel, June 2009: Evolution of Size Distributions during Relaxation and Growth on Surfaces

Virginia Tech, Blacksburg, Aug. 2009: Steps on Surfaces and Their Evolution: From Elementary Models to Universal Fluctuation Phenomena: What does the time between buses in Cuernavaca have to do with step separations?

CMSN Workshop, Denver, Oct. 2009: Adsorption contours, interactions, and assembly of benzene on Cu(111): Application of van der Waals DFT and of surface-state-mediated interactions en route to study of quinone photovoltaics

Virginia Commonwealth U., Richmond, February 2010: Steps on Surfaces, Their Significance, and Their Evolution: From Elementary Models to Universal Properties

German Physical Society (DPG), Symposium on Crystal Growth Kinetics, Regensburg, Germany, March 2010: Modeling the Role of Co-deposited Impurities in Growth: What Causes the Distinctive Step Meandering and Pyramidal Mounds on Cu(001)

SIAM Minisymposium, Philadelphia, May 2010: Uses and Shortcomings of One-Dimensional Models of Step-Flow Growth: Some Examples

U. California–Riverside, Colloquium, June 2010: Steps on Surfaces, Their Significance, and Their Evolution: From Elementary Models to Universal Properties

Pennsylvania State U., June 2010: Adsorption of and Interactions Between Benzenes on Cu(111): First Step to Understanding Remarkable Structures Underpinned by Surface-State Mediated Interactions

27th Max Born Symposium on Multiscale Modeling of Real Materials, Wrocław, Poland, Sept. 2010: Distinctive Features in Growth on Vicinal Cu(100): Understanding the Role of Impurities by Calculating Key Energies and Simulating Morphology

Non-equilibrium Interface and Surface Dynamics (nid10), College Park, MD, Oct. 2010: Modeling Capture Zone Distributions: Recent Progress

CMCSN Workshop, Dallas, Jan. 2011: Ordering of Giant Molecular Honeycomb Networks: Closed-Shell Quantum Dots or Metallic Surface States?

U. California–Irvine, Colloquium, April 2011: Steps and Islands on Surfaces, Their Significance, and Their Evolution: From Elementary Models to Universal Properties

Hebrew U., Jerusalem, June 2011: Self-Organization of Aromatic Hydrocarbons on Cu(111): Role of Surface-State Mediated Interactions (also given at Ben Gurion U., Beer Sheva, in abbreviated, informal fashion)
U. of Toledo, Colloquium, Oct. 2011: From Elementary Models of Steps on Surfaces to Universal Properties of Spacing and Area Distributions: Waltzes with Wigner
U. of Utah (Materials Science & Engineering), Nov. 2011: Pattern Formation of Benzene and Related Organics on Cu(111): How Important Are Surface-State Mediated Interactions?
Zhengzhou University, China, June 2012: 1) Interactions Between Steps: Entropic, Elastic, and Electronic; 2) Metallic Surface States: Their Role in Pattern Formation of Molecules on Surfaces; 3) Applying to Physics Graduate School in the USA
Peking University ICQM, Beijing, June 2012: Generalized Wigner Surmise in the Nanoworld and the Real World: Applications to Stepped Surfaces, Capture Zones of Growing Islands, Subway Stations, and Areal Size Distributions of Political Units
Institute of Physics, Chinese Acad. of Sci., Beijing, June 2012: Pattern Formation of Benzene and Related Organics on Cu(111): How Important Are Surface-State Mediated Interactions?
SIAM Conf. Math. Aspects of Mat. Sci., Philadelphia, June 2013: Analyzing Capture Zone Distributions (CZD) in Growth: Theory and Applications
SUNY Stony Brook, March 2014: Generalized Wigner Surmise in the Nanoworld and the Real World: Applications to Stepped Surfaces, Submonolayer Islands, Subway Stations, and County Size Distributions [flight cancellation due to snowstorm, so material transmitted in informal discussions]
International Max Planck Research School (IMPRS) for Functional Interfaces in Physics and Chemistry "Micro to Macro," Castle Ringberg, Tegernsee, Bavaria, Germany, Feb. 2015: Organic Molecules on Substrates with 2D Metallic States: Formation and Impact of Submonolayer Patterns
University of Cologne, Germany, Feb. 2015: Generalized Wigner Surmise in the Nanoworld & the Real World: Applications to Stepped Surfaces, Submonolayer Islands, Metro Stations, & Landkreise/Arrondissements
Technical University of Munich, Germany, Feb. 2015: Aspects of Adsorbed Organic Molecules: Universal Island-Related Distributions and Remarkable Superlattice Patterns
Nanotech-2016, Baltimore, MD, April 2016: Giant regular arrays via adsorbed organic molecules: Experimental "parallel computing"?
Virginia Tech, Blacksburg, VA, May 2016: Unifying Description of Fluctuations in the Nanoworld & the Real World: From Steps & Islands on Surfaces to County Areas & Paris Metro Stations
Turkish Physical Society, Bodrum, Turkey, 32nd International Physics Congress, plenary talk, Sept 2016: Universal Distributions of Fluctuating Quantities in the Nanoworld & Society: Applications to Stepped Surfaces, Submonolayer Islands, Subway Stations, & Ilçeler
Universidad del País Vasco/Euskal Herriko Unibertsitatea, San Sebastian, Spain, Sept. 2016: Quantitative Understanding of Stepped Surface: Spinless Fermions and Beyond
Harvard EFRC-IMASC: Universal Distributions of Fluctuating Quantities: Applications in Surface Science, Cambridge, MA, Oct. 2016
Tufts U. Chemistry Dept., Sykes Group Meeting: Sub-ML AQ on Cu(111) and Au(111), the role of metallic surfaces; and hot precursors for 6P on mica, a conversation starter, Oct. 2016
Harvard Physics Kaxiras Group: Aspects of Adsorbed Organic Molecules, Nov. 2016
COMSTECH-CIIT Joint International Workshop on Rational Design of Materials for Energy Needs: Computation and Experimentation, Islamabad, Pakistan, May 2017: 1) Multiscale View of Crystal Structure and Growth: From Lattice Gas Models to Continuum Shapes; 2) Patterns on Surfaces and Distributions of Size-Related Properties: Applications From Nanoscale to Societal Scales
[8th International Symposium on Surface Science (ISSS-8), Tsukuba, Japan, Oct. 2017: Patterns of Organics on Substrates with Metallic Surface States: Why?, So?? (with J. Morales-Cifuentes, Z. Cheng, J. Wyrick, and L. Bartels)]
[Workshop on Step Dynamics on Crystals, Osaka, Japan, Oct. 2017]
[Kyushu University, Fukuoka, Japan, Oct. 2017]

2. Contributed Talks

American Vacuum Society, Boston, 1971: Anisotropic Oscillatory Indirect Interaction between Adatom Pairs on a Tight-Binding Solid
Mid-Winter Solid State Conference, Newport Beach, 1974
Conference on Physical Electronics, Murray Hill, 1974: Changes in Photoemission Yields Caused by Chemisorption: A Model Interpretation
American Chemical Society, Atlantic City, 1974: What Model Calculations Reveal About the Nature of the Chemisorption Bond, Changes in Density of States, and Photoemission Difference Spectra
American Physical Society, Denver 1975: Short-Chain Model of Chemisorption Conference on Physical Electronics, University Park, Pa., 1975: Multi-Adatom Effects in Chemisorption
American Physical Society, Atlanta, 1976: Multi-Adatom Effects in Chemisorption
Conference on Physical Electronics Stanford, 1977: Adatom Island Shapes and the Indirect Interaction
American Physical Society, Washington, March 1978:
1) Adatom Island Shapes
2) Asymptotic Nature of the Indirect Interaction (with L.D. Roelofs)
Conference on Physical Electronics, Gatlinburg, June 1978: Three Adatom Non-Pairwise Interactions: A Quantity of New Interest
American Vacuum Society, San Francisco, Nov. 1978:
1) Adlayer Induced LEED Beams near Order-Disorder Transitions (with L.D. Roelofs & R.L. Park)
2) Recent Progress in Extended Appearance Potential Fine Structure Analysis (with L.D. Roelofs, W.T. Elam, and G.E. Laramore)
American Physical Society, Chicago, March 1979:
1) Recent Progress in Extended Appearance Potential Fine Structure Analysis (with L.D. Roelofs and R.L. Park)
2) Model Calculations of Three-Adatom Non-Pairwise ("Trio") Interactions, with Implications for O/W(110) (with P. E. Hunter)
3) Adlayer-Induced LEED Beams Near Order-Disorder Transitions (with L.D. Roelofs and Robert L. Park)
4) Singularities in the Surface Local Density of States in Model Lattices: Some Exact Results (with P. E. Hunter)
Conference on Physical Electronics, College Park, Maryland, June 1979:
1) Analysis of Extended Appearance Potential Fine Structure from Oxidized Metal Surfaces (with M. L. den Boer, W. T. Elam, R.L. Park, L.D. Roelofs, and G.E. Laramore)
2) Multicritical Phase Diagrams: Oxygen on Ni(111) (with L.D. Roelofs, P. E. Hunter, A. R. Kortan, and R. M. Roberts)
American Vacuum Society, New York, October 1979:
1) Analysis of Extended Appearance Potential Fine Structure from Oxidized Metal Surfaces (with M. L. den Boer, W. T. Elam, Robert L. Park, L.D. Roelofs, and G.E. Laramore)
2) O/Ni(111): Adlayer Phases and Binding Sites (with L.D. Roelofs, P. E. Hunter, A. R. Kortan, Robert L. Park, and R. M. Roberts)
3) Effect of Central Atom Potential on the Extended Fine Structure above Appearance Potential Thresholds (with G.E. Laramore, L.D. Roelofs, and Robert L. Park)
American Physical Society, New York, March 1980:
1) Measurement of Critical Exponents of a Chemisorbed Overlayer: Ni(111)-p(2×2)-0 (with A. R. Kortan, and Robert L. Park)
2) Multicritical Behavior in Chemisorbed Overlayers: Ni(111)-p (2×2)-O (with L.D. Roelofs, A. R. Kortan, and Robert L. Park)
3) Mean Field Calculations for 2-d Systems with Complicated Interactions (with R. M. Roberts and L.D. Roelofs)
4) Interactions Between Two and Three Adatoms on BCC and FCC Model Surfaces (with P. E. Hunter and L. R. Roelofs)
5) Theoretical Comments on Extended Appearance Potential Fine Structure (EAPFS) (with G.E. Laramore and L.D. Roelofs)

6) EAPFS Determination of Interatomic Spacings at Oxidized Metal Surfaces (with M. L. den Boer, A. R. Kortan, and Robert L. Park)

Second Symposium on Applied Surface Analysis, Dayton, June 1980: Short Range Order of Si/O Surfaces (with John Morar and Robert L. Park)

Conference on Physical Electronics, Ithaca, June 1980:
1) Phase Transitions of a 2-d System, O/Ni(111): II. Theory (with L.D. Roelofs)
2) New Results in Extended Appearance Potential Fine Structure Analysis (with G.E. Laramore, M. L. den Boer, and R.L. Park)

Int'l Conference on Thermodynamics and Statistical Mechanics (Statphys 14), Edmonton, August 1980: Multi-critical Phase Diagram of a 2-d Lattice System: O/Ni(111) (with A. R. Kortan, R.L. Park, and L.D. Roelofs)

Int'l Conference on X-Ray Processes and Inner-Shell Ionization, Stirling, Scotland, August 1980: Extended Appearance Potential Fine Structure (EAPFS) as a Method for Analyzing the Geometrical Properties of Solid Surfaces (with G.E. Laramore and Robert L. Park)

American Vacuum Society, Detroit, October 1980: Oxidation Studies by Extended Appearance Potential Fine Structure (EAPFS) (with M. L. denBoer, A. R. Kortan, and R.L. Park)

American Physical Society, Phoenix, March 1981:
1) Critical Exponent Determination in a Chemisorption System (with L.D. Roelofs, A. R. Kortan, and R.L. Park)
2) Phase Boundary Asymmetries, Low-Energy Excitations, and Trio Interactions (with N.C. Bartelt and P. E. Hunter)

Second International Conference on Solid Films and Surfaces, College Park, Md., June 1981: The Role of Three-Adatom Interactions in Two-Dimensional Phase Diagrams (with N.C. Bartelt and P. E. Hunter)

Phase Transitions on Surfaces, Orono, Maine, Aug. 1981: The Role of Three-Adatom Interactions in Two-Dimensional Phase Diagrams (with N.C. Bartelt and P. E. Hunter)

American Physical Society, Dallas, March 1982: EAPFS Matrix Elements: Angular Momentum Sums and Pseudo-Selection Rules (with M.J. Mehl)

American Vacuum Society, Baltimore, Nov. 1982: (2×2) Phase Transitions on Honeycomb Lattices (with N.C. Bartelt and L.D. Roelofs)

American Physical Society, Los Angeles, March 1983:
1) Critical Exponents of p(2×2) O/Ni(111): Explanations (with N.C. Bartelt and L.D. Roelofs)
2) Phase Transitions of (2×2) Overlayers on Honeycomb Lattices: Transfer Matrix Scaling (TMS) Results (with N.C. Bartelt, M. C. Yalabik, K. Kaski, and J. D. Gunton)
3) New Results in Extended Appearance Potential Fine Structure: Auger Monitored Extended Fine Structure (AMEFS) (with J. F. Morar, M.J. Mehl, and R.L. Park)
4) Model Calculations for Extended Fine Structure in APS (with M.J. Mehl, G.E. Laramore, and G. W. Bryant)

American Vacuum Society, Boston, Nov. 1983:
1) Relationship Between Many-Parameter Lattice Gas Systems and Simpler Models: Easy Approximations for Tc (with N.C. Bartelt and E.D. Williams)
2) Pseudo-Dipole Selection Rules for Extended Fine Structure in APS: Calculations and Applications (with M.J. Mehl and G.W. Bryant)

American Physical Society, Detroit, March 1984:
1) Monte Carlo Calculation of the Structure Factor for the p(2×2) Over-layer on Triangular and Honeycomb Lattices (with N.C. Bartelt and L.D. Roelofs)
2) Pseudo-Dipole Selection Rules for Extended Appearance Potential Fine Structure (EAPFS) (with M.J. Mehl and G. W. Bryant)
3) Extended Energy Loss Fine Structure (EXELFS) of Clean Ni(001) and Epitaxially Grown Cu on Ni (001) (with R.L. Park, H. Iwasaki, Y.U. Idzerda, J. Vahakangas, and E.D. Williams)

Conference on Physical Electronics, Princeton, June 1984: Critical Exponents Using LEED: Simulation Results and Techniques for More Convenient Measurements (with N.C. Bartelt and L.D. Roelofs)

Summer Institute on X-Ray Absorption and Related Core Spectroscopies, U. of Washington, June 1984: Calculations of Angular Momentum Branching Ratios for Electron Induced Ionization

International Conference on the Structure of Surfaces, Berkeley, Aug. 1984: Measurement of the Specific Heat Critical Exponent Using LEED (with N.C. Bartelt and L.D. Roelofs)

American Vacuum Society, Reno, Dec. 1984: Studying Surface Phase Transitions with Probes of Short Range Order (with N.C. Bartelt and L.D. Roelofs)

Washington Area Statistical Physics Symposium, NBS, March 1985: Phase Transitions of Chemisorbed Atoms: Realizations of 2-d Universality Classes Studied by Monte Carlo and Transfer Matrix Techniques

American Physical Society, Baltimore, March 1985:

1) Surface Phase Transitions with Probes of Short-Range Order: Measurement of the Specific Heat Exponent (with N.C. Bartelt and L.D. Roelofs)

2) Electron-Induced Extended Fine Structure Measurements of Surface Layers (with Y.U. Idzerda, E.D. Williams, and R.L. Park)

3) The Ashkin-Teller Model and the Ordered Phases of Se/Ni(100) (with J. Ochab, W.N. Unertl, P.H. Kleban, G. Akinci, P. Bak, and N.C. Bartelt)

American Physical Society, Las Vegas, March 1986:

1) Simulations of Structure Factors of 2-d Lattice Gases: Implications for LEED Analysis (with N.C. Bartelt and L.D. Roelofs)

2) Phase Diagrams of Lattice Gases with a Strong Longer-Range Interaction (with L.D. Roelofs and N.C. Bartelt)

3) Wavevector Scaling, Surface Critical Behavior, Interface Wetting, and Amplitude Ratios in the Chiral Clock Model (with A.L. Stella, X.-c. Xie, and N.C. Bartelt).

4) Finite-Size Effects on the Critical Structure Factor of the 2-d Ising Model (with N.C. Bartelt and P.H. Kleban).

Washington Area Statistical Physics Symposium, NBS, May 1986: A Transfer Matrix Approach to Estimating Coverage Discontinuities and Multicritical Point Positions in 2-D Lattice Gas Phase Diagrams (with N.C. Bartelt and L.D. Roelofs).

Int'l Conference on Thermodynamics and Statistical Mechanics (Statphys 16), Boston, Aug 1986:

1) A Transfer Matrix Approach to Estimating Coverage Discontinuities and Multicritical Point Positions in Two-Dimensional Lattice Gas Phase Diagrams (with N.C. Bartelt and L.D. Roelofs)

2) Theoretical Assessment of Capability of LEED to Measure Critical Phenomena of Surface Phase Transitions (with N.C. Bartelt and L.D. Roelofs)

American Vacuum Society, Baltimore, Oct. 1986:

1) Theoretical Assessment of Capability of LEED to Measure Critical Phenomena of Surface Phase Transitions (with N.C. Bartelt and L.D. Roelofs);

2) Structure of the Ti/Si System as Probed by SEELFS and EAPFS (with Y.U. Idzerda, E.D. Williams, and R.L. Park).

American Physical Society, New York, March 1987:

1) Transfer-Matrix Approach to Estimating Coverage Discontinuities and Multicritical-Point Positions in 2-D Lattice-Gas Phase Diagrams (with N.C. Bartelt and L.D. Roelofs).

2) Structure Factors Associated with the Melting of: 1) (3×1)/Centered Rectangular and 2) p(2×2)/Honeycomb Lattice Gases.

Second Int'l Conf. on the Structure of Surfaces, Amsterdam, June 1987: Critical Phenomena of Surface Phase Transitions: Theoretical Studies of the Structure Factor (with N.C. Bartelt and L.D. Roelofs)

Materials Research Society, Boston, Nov 1987: Quantum Monte Carlo Simulation of an Extended Hubbard Model of High T_c Superconductors (with A. Bhattacharya, P.G. McQueen, and C.S. Wang)

American Physical Society, New Orleans, March 1988:

1) Decorated Lattice-Gas Model of H/Pd(100) (with N.C. Bartelt)

2) Effects of Ultrametric Bond Distributions on Critical Properties of 2-d Ising Systems (with R. Schmolke and A.L. Stella)

3) Possible Phase Diagrams of Vicinal Silicon Surfaces (with N.C. Bartelt and E.D. Williams)

4) Quantum Monte-Carlo Simulation of an Extended Hubbard Model of High T_c Superconductors (with A. Bhattacharya, P.G. McQueen, and C.P. Wang)

American Physical Society, St. Louis, March 1989:

1) Phase Diagram and Critical Properties of a 2-d Lattice Model of Oxygen Ordering in $YBa_2Cu_3O_z$ (with N.C. Bartelt and L.T. Wille)
2) Interactions Between Hydrogen Atoms on Ni(111) by the Embedded Atom Method (EAM) (with M.S. Daw and S.M. Foiles)
3) Critical Properties of a Self-Dual Square Ising Lattice with an Ultrametric Bond Distribution (with A.L. Stella, J.G. Amar, and R. Schmolke)

61st Stat. Mech. Mtg., Rutgers, May 1989: Novel Behavior in Simple 2-d Lattice-Gas Models at Non-Stoichiometric Densities

Physical Electronics Conference, Seattle, June 1989: Unexpected *Low-Coverage* c(2×2) Phase in a Lattice Gas System: Example of a Novel Phase with Long-Range Order but No Corresponding Short-Range Order (with N.C. Bartelt and L.D. Roelofs)

Int'l Conference on Materials and Mechanisms of Superconductivity: High-temperature Superconductors, Stanford, July 1989: Phase Diagram and Critical Properties of a Two-dimensional Lattice Model of Oxygen Ordering in $YBa_2Cu_3O_z$ (with N.C. Bartelt and L.T. Wille)

First Pennsylvania Surface Science Workshop, State Coll., Aug. 1989:
1) Indirect Interactions of H/Ni(111) and H/Pd(100) Using Embedded Atom Method (with M.S. Daw and S.M. Foiles)
2) Monte Carlo Calculations of the Diffraction from Vicinal Surfaces in Thermal Equilibrium (with N.C. Bartelt)
3) An Unexpected Low-Coverage c(2×2) Lattice-Gas Phase (with L.D. Roelofs and N.C. Bartelt)

American Vacuum Society, Boston, Oct. 1989:
1) Unexpected Low-Coverage c(2×2) Phase: Long-Range Order Without Corresponding Short-Range Order (with N.C. Bartelt and L.D. Roelofs)
2) Monte Carlo Calculations of the Diffraction from Vicinal Surfaces in Thermal Equilibrium (with N.C. Bartelt)

Washington Area Statistical Physics Symposium, Catholic U., Nov. 1989: Unexpected Low-coverage c(2×2) Phase and Other Examples of Ordering in 2-d at Non-stoichiometric Densities: Long-range Order Without Corresponding Short-range Order

62nd Stat. Mech. Mtg., Rutgers, Dec 1989: Models of Vicinal Surfaces: Comparison of Monte Carlo and Free-Fermion Calculations with Experimental Data (with N.C. Bartelt, J.L. Goldberg, and E.D. Williams)

American Physical Society, Anaheim, CA, March 1990:
1) Monte Carlo Calculations of Diffraction from Vicinal Surfaces in Thermal Equilibrium (with N.C. Bartelt and J.L. Goldberg)
2) Disordering of the (3×1) Reconstruction and the Chiral Three-State Potts Model (with Y.-N. Yang, E.D. Williams, R.L. Park, and N.C. Bartelt)

Physical Electronics Conference, Gaithersburg, June 1990: Analysis of the Terrace Width Distribution of Vicinal Surfaces Using Free-Fermion Models: Some Universal Features (with B. Joós and N.C. Bartelt)

NATO Advanced Studies Institute on Phase Transitions in Surface Films, Erice, Italy, June 1990: Distribution of Terrace Widths on a Vicinal Surface within the 1-d Free-Fermion Model (with B. Joós and N.C. Bartelt)

American Physical Society, Cincinnati, March 1991:
1) Phase Transitions Involving Doubling in Step Height and Vicinal Ge(111) (with T.M. Jung, R.J. Phaneuf, N.C. Bartelt, and E.D. Williams)
2) Distribution of Terrace Widths on a Vicinal Surface within the One-Dimensional Free-Fermion Model (with B. Joós and N.C. Bartelt)

Physical Electronics Conference, Rutgers, June 1991: The Role of Step Collisions on Diffraction from Vicinal Surfaces: Scaling of the Structure Factor Perpendicular to the Splitting Direction (with N.C. Bartelt and E.D. Williams)

American Vacuum Society, Seattle, Nov 1991: Step-Doubling Transitions on Vicinal Surfaces (with N.C. Bartelt and E.D. Williams)

American Physical Society, Indianapolis, March 1992: Energies of Steps, Kinks, and Defects on Vicinal Ag(111) by the Embedded Atom Method (with R.C. Nelson and P.J. Rous)

Physical Electronics Conference, U. California - Irvine, June 1992: Parametrizing Simple Models of Vicinal Ag Surfaces Using the Embedded Atom Method: General Trends and Implications for Experiments (with R.C. Nelson, S.V. Khare, N.C. Bartelt, and P.J. Rous)

American Physical Society, Seattle, March 1993:
1) Equilibrium Fluctuations of Steps on Vicinal Si(111) (with N.C. Bartelt, E.D. Williams, J.-J. Métois, J.C. Heyraud, C. Alfonso, and J.M. Bermond)
2) Self-Avoiding Surfaces: Role of Topology (with A.L. Stella, E. Orlandini, I. Beichl, F. Sullivan, and M.C. Tesi)

Physical Electronics Conference, Rensselaer Polytechnic Institute, June 1993:
1) Fluctuations of Steps on Si(111): A Novel Example of Brownian Motion (with N.C. Bartelt, J.L. Goldberg, and E.D. Williams)
2) Dynamics of Step Doubling in Model Systems (with S.V. Khare and N.C. Bartelt)

European Conference on Surface Science – 13, Univ. of Warwick, U.K., Aug. 1993:
1) Fluctuations of Steps on Si(111): Brownian Motion (with N.C. Bartelt, J.L. Goldberg, and E.D. Williams
2) Terrace-Width Distributions and Step Interactions on Vicinal Ag(110) (with W.W. Pai, J.S. Ozcomert, N.C. Bartelt, and J.E. Reutt-Robey)

American Physical Society, Pittsburgh, March 1994:
1) Oscillatory Indirect Interactions Between Steps on Vicinal Metal Surfaces: Surface States on Ag(110) (with W.W. Pai, J.S. Ozcomert, N.C. Bartelt, and J.E. Reutt-Robey)
2) Energies of Steps and Kinks in Equivalent Crystal Theory (with S.V. Khare and N.C. Bartelt)
3) Dynamics of Step Doubling: Simulations for a Simple Model and Comparison with Experiment (with S.V. Khare and N.C. Bartelt)
4) Measuring Surface Mass Diffusion Coefficients of Vicinal Surfaces by Observing Step Fluctuations: Monte Carlo Illustration (with N.C. Bartelt and E.D. Williams)
5) The Electron Scattering Force for Surface Electromigration on Metals (with P.J. Rous and E.D. Williams)
6) Phase Diagram of a 2-D Lattice-Gas Model of Oxygen Ordering in YBCO, with Realistic Interactions (with D. Liu, P.A. Sterne, and L.T. Wille)

Physical Electronics Conference, U. of Tennessee, Knoxville, June 1994: Semiempirical Calculation of Adatom Diffusion Barriers near, and Energetics of, Steps and Kinks: EAM and ECT Studies of Vicinal Ag and Similar Metals (with S.V. Khare)

American Physical Society, San Jose, March 1995:
1) Dynamics of Step-Doubling Transitions on Vicinal Surfaces (with S.V. Khare and N.C. Bartelt)
2) On the Theory of Brownian Motion of Monolayer Pits on Surfaces (with S.V. Khare and N.C. Bartelt)

Physical Electronics Conference, Arizona, June 1995: Brownian Diffusion of Adatom Islands and Vacancy Clusters: Langevin Analysis and Monte Carlo Simulations (with S.V. Khare and N.C. Bartelt)

American Vacuum Society, Minneapolis, Oct. 1995: Brownian Diffusion of Adatom/Vacancy Clusters: Langevin Analysis and Monte Carlo Simulations (with S.V. Khare)

74th Stat. Mech. Mtg., Rutgers, Dec. 1995: Diffusion of Adatom or Vacancy Single-layer Clusters: Langevin Analysis Adapted from Straight Steps

American Physical Society, St. Louis, March 1996:
1) Bending-Rigidity Dependence of the Phase Boundary of Lattice Vesicles: Critical Scaling and Novel Universality at the Crumpling Point (with E. Orlandini, A.L. Stella, M.C. Tesi, I. Beichl, and F. Sullivan)
2) STM Studies of Equilibrium Step Fluctuations and Step-Step Interactions on a Vicinal Ag(001) Surface (with P. Wang, H. Pfnür, S.V. Khare, E.D. Williams, W.W. Pai, and J.E. Reutt-Robey)
3) Oscillatory Interaction of Steps on W {110} (with Wei Xu and J.B. Adams)

American Vacuum Society, Philadelphia, Oct. 1996: STM Studies of Equilibrium Step Fluctuations and Step-Step Interactions on a Vicinal Ag(001) Surface (with P. Wang, H. Pfnür, S.V. Khare, E.D. Williams, W.W. Pai, and J.E. Reutt-Robey)

Materials Research Society, Boston, Dec. 1996: Brownian Motion of Single-Layer Adatom and Vacancy Clusters on Surfaces: Langevin Theory and Monte Carlo Simulations (with S.V. Khare)

American Physical Society, Kansas City, March 1997:
1) A Unified View of Step-Edge Fluctuations on Vicinal Surfaces (with S.V. Khare)
2) Approximate Dependence of Diffusion Barriers on Nearest-Neighbor Configurations on fcc(100) Metals, and Some Consequences (with J. Jacobsen and C. Schiff)
3) Simulations of Growth on Cu(100) Using Improved Algorithm (with C. Schiff, J.G. Amar, I. Beichl, and F. Sullivan)

American Physical Society, Los Angeles, March 1998:
1) Unified Treatment of Step-Edge Fluctuations: Limiting Cases and Crossover Behavior (with S.V. Khare, M.R. D'Orsogna, and O. Pierre-Louis)
2) Growth on Cu(100) Using Improved Simulation Algorithm: Further Work (with M.R. D'Orsogna, J.G. Amar, I. Beichl, and F. Sullivan)
3) Responses of Monolayer Vacancy Clusters to Electromigration (with O. Pierre-Louis)

Physical Electronics Conference, State College, PA, June 1998:
1) New Results for Analytical Approximants of Terrace-Width Distributions on Vicinal Surfaces, and Some Consequences (with O. Pierre-Louis)
2) Responses of Monolayer Clusters to Electromigration (with O. Pierre-Louis)
3) Growth on Cu(100) Using Improved Simulation Algorithm (with M.R. D'Orsogna & J.G. Amar)

Int'l Conference on Thermodynamics and Statistical Mechanics (Statphys 20), Paris, July 1998: Unified View of Step Fluctuations and Crossover Effects

American Vacuum Society, Baltimore, Nov. 1998:
1) New Results for Analytical Approximants of Terrace-Width Distributions on Vicinal Surfaces, and Some Consequences (with O. Pierre-Louis)
2) Electromigration and Cluster Motion (with O. Pierre-Louis)
3) Growth on Cu(100) Using Improved Simulation Algorithm (with M.R. D'Orsogna & J.G. Amar)

Materials Research Society, Boston, Dec. 1998:
1) Advances in Studying Terrace-Width Distributions on Vicinal Surfaces: Improved Approximations and Exact Results from Random-Matrix Theory (with O. Pierre-Louis)
2) Responses of Monolayer Clusters to Electromigration (with O. Pierre-Louis)

American Physical Society, Atlanta, March 1999:
1) New Results for Terrace-Width Distributions on Vicinal Surfaces: Wigner Surmise and Extraction of Step-Step Repulsions (with O. Pierre-Louis and M. Giesen)
2) Electromigration on Surfaces: Responses of Atom and Vacancy Clusters (with O. Pierre-Louis)
3) Growth on Cu(100) Using Improved Simulation Algorithm (with M.R. D'Orsogna & J.G. Amar)

Monte Carlo and Structure Optimization Methods for Biology, Chemistry, and Physics, Tallahassee, March 1999: Projected Dynamics Monte Carlo for Step-Edge Fluctuations (with H.L. Richards)

International Conference on the Structure of Surfaces 6, Vancouver, BC, July. 1999:
1) Electromigration of Atom and Vacancy Islands on Surfaces: Results and Implications (with O. Pierre-Louis)
2) New Results for Terrace-Width Distributions on Vicinal Surfaces: Wigner Surmise and Extraction of Step-Step Repulsions (with O. Pierre-Louis and M. Giesen)
3) Edge Diffusion During Growth: Kink Ehrlich-Schwoebel Effect and Resulting Instabilities (with O. Pierre-Louis)

American Vacuum Society, Seattle, Oct. 1999: Edge Diffusion During Growth: Kink Ehrlich-Schwoebel Effect and Resulting Instabilities (with O. Pierre-Louis)

Materials Research Society, Boston, Dec. 1999: Influence of the Electrochemical Environment on Diffusion Near Step and Island Edges: Ag(111) and Ag(100) (with M.I. Haftel)

American Physical Society, Minneapolis, March 2000:
1) Progress in Using the Generalized Wigner Distribution in the Analysis of Terrace-Width Distributions of Vicinal Surfaces (with S.D. Cohen and H.L. Richards)
2) The Kink Ehrlich-Schwoebel Effect and Resulting Instabilities (with O. Pierre-Louis and M.I. Haftel)
3) Thermal Decay of Silicon Mounds on the Si(111)7×7 Surface (with A. Ichimiya, K. Hayashi, E.D. Williams, M. Uwaha, and K. Watanabe)

4) Mean-Field Theories for Terrace-Width Distributions of Vicinal Surfaces: Beyond the Generalized Wigner Distribution (with H.L. Richards)

International Conference on the Structure of Surfaces 10, Princeton, July. 2000:
1) New Results for Terrace-Width Distributions on Vicinal Surfaces: Generalized Wigner Surmise and Extraction of Step-Step Repulsions (with H. L. Richards, S. D. Cohen, O. Pierre-Louis, M. Giesen)
2) Decay of Silicon Mounds: Scaling Laws and Description with Continuum Step Parameters (with A. Ichimiya, K. Hayashi, E.D. Williams, M. Uwaha, and K. Watanabe)
3) Electromigration of Single-Layer Clusters (with O. Pierre-Louis)
4) Influence of the Electrochemical Potential on Energy Landscapes Near Step and Island Edges: Ag(100) and Ag(111) (with M. Haftel)

American Physical Society, Seattle, Mar. 2001:
1) Further Progress Applying the Generalized Wigner Distribution to Analysis of Vicinal Surfaces (with H.L. Richards and S.D. Cohen)
2) Determining Step Interaction Functions from Terrace Width Distributions of Vicinal Crystal Surface (with H.L. Richards, M. Giesen, and R. van Gastel)

Gordon Conference, Williams Coll., July 2001 (posters):
1) Steady-State Step Fluctuations of High-T Vicinal Si(111) Using REM: Comparison with Equilibrium, and Novel Investigation of Step-Step Correlation Functions (with Saul D. Cohen, Robert Schroll, Hailu Gebremariam Bantu, J.-J. Métois, Ellen D. William
2) Determining Step Interaction Functions from Terrace Width Distributions (TWDs) of Vicinal Crystal Surface (with H.L. Richards, M. Giesen, and R. van Gastel)

American Vacuum Society/Int'l Vacuum Congress-15, San Francisco, Oct. 2001: Si(111) Step Fluctuations at High Temperature: Is Steady-State Evaporation-Adsorption the Same as Equilibrium? (with S.D. Cohen, R.D. Schroll, J.-J. Métois, Hailu G. Bantu, H.L. Richards, and E.D. Williams)

86th Stat. Mech. Mtg., Rutgers, Dec 2001: Step-Step Correlations on Vicinal Surfaces: an Alternative to Terrace-Width Distributions (with Howard L. Richards, Hailu Gebremariam Bantu, and Saul D. Cohen)

American Physical Society, Indianapolis, Mar. 2002:
1) Step-Step Correlation Function: Theory and Application to REM Data of High-T Si(111) (with R.D. Schroll, S.D. Cohen, J.-J. Métois, Hailu Gebremariam Bantu, H.L. Richards, and E.D. Williams)
2) Surface-state Mediated Interactions: Analytic and Numerical Results for 3 Adatoms (with P. Hyldgaard)
3) Extracting the Form of Step-Step Interaction Potentials from Experimental TWDs (with H.L. Richards, M. Giesen, and R. van Gastel)

Thermodynamics-2002, U. of Maryland, College Park, April 2002:
1) Terrace-Width Distributions and Step Interactions on Stepped Surfaces
2) Steps on Si(111) in Steady State at High Temperature: Expected and Anomalous Findings (poster by Robert Schroll)
3) Monte Carlo Studies of Step Distributions on Vicinal Surfaces (poster by Hailu Gebremariam Bantu)

ECOSS21/NANO-7, Malmö, Sweden, June 2002: Surface-State Mediated Three-Adsorbate Interaction: Electronic Nature and Nanoscale Consequences (with Per Hyldgaard)

International Conference on Solid Films and Surfaces-11, Marseilles, July 2002:
1) Step Fluctuations in Reflection Electron Microscopy at 1100 C: Anomalous Apparent Step-Step Repulsion (with S. D. Cohen, R. D. Schroll, J.-J. Métois, Hailu Gebremariam Bantu, H. L. Richards, and E. D. Williams)
2) Surface-State Mediated 3-Adsorbate Interaction: Exact and Numerical Results and Simple Asymptotic Expression, poster with Per Hyldgaard

American Physical Society, Austin, Mar. 2003:
1) Orientation Dependence of Step Stiffness: Non-Ising Experimental Behavior and Implications (with S. Dieluweit, H. Ibach, and M. Giesen)
2) Application of Generalized Wigner Distribution to Extracting Step Repulsions on Vicinals: Progress Report(with Hailu Gebremariam and H. L. Richards)

3) Step Fluctuations on a Multiple Phase Al/Si(111) Surface(with I. Lyubinetsky, D.B. Dougherty, and E.D. Williams)
4) Fluctuations of Anisotropic Islands at Equilibrium and During Slow Decay (with Ferenc Szalma and M. I. Haftel)
5) Extracting Step-Step Interaction Potentials from Experimental TWDs(with H. L. Richards, J. Yancey, M. Giesen, and R. van Gastel)

American Vacuum Society, Baltimore, Nov. 2003:
1) Fluctuations of Islands on Anisotropic Surfaces (with Ferenc Szalma)
2) Interactions Mediated by Surface-States: Lines and Ordered Overlayers (with Per Hyldgaard)
3) Using Island Step-Edge Fluctuations to Determine Absolute Step Energies: Application to Pb(111) (with T. J. Stasevich and F. Szalma)
4) Persistence Exponent for Terrace-Diffusion Limited Step Fluctuations: Numerical Simulation (with H. Gebremariam and C. Dasgupta)
5) Modeling Nano-Structure Evolution in the Continuum Step Model: Decay of Pb Crystallites (with M. Degawa, D. B. Dougherty, K Thürmer, J. E. Reutt-Robey, E. D. Williams, and T. J. Stasevich)

American Physical Society, Montreal, Mar. 2004:
1) Analysis of Terrace Width Distributions Using the Generalized Wigner Surmise: Calibration Using Monte Carlo and Transfer-Matrix Calculations (with Hailu Gebremariam and H. L. Richards)
2) Orientation Dependence of Step Stiffness: Solid-on-solid and Ising Models Confront Experiment (with T.J. Stasevich)
3) Fluctuations, Step Free Energy, and Correlation Times of Islands on (111) fcc Surfaces (with Ferenc Szalma, T. J. Stasevich, and Hailu Gebremariam)
4) Surface-State Mediated Interactions between Adatoms and Adchains (with Per Hyldgaard and Jascha Repp)
5) Self-assembly of Acridine Carboxylic Acid on Ag (111): UHV STM Investigations (with Diane Evans, Bo Xu, and J. E. Reutt-Robey)

14th International Conference on Crystal Growth & 12th International Conference on Vapor Growth and Epitaxy, Grenoble, Aug. 2004:
1) Effects of Anisotropy on Orientation-dependence of Step Stiffness and Fluctuations: Implications for (111) fcc Metals (with F. Szalma, T. J. Stasevich, and Hailu Gebremariam)
2) Interactions Mediated by Surface States: From Pairs and Trios to Adchains and Ordered Overlayers (with Per Hyldgaard) [to be published in J. Crystal Growth—see refereed publications]

American Physical Society, Los Angeles, Mar. 2005:
1) Lattice-Gas Modeling of Stiffness on fcc(111) Surfaces: General Results (with T. J. Stasevich)
2) Surface Step Stiffness: Next-Nearest Neighbor Interactions and Beyond (with T. J. Stasevich)
3) Step Evolution Toward Equilibrium: Fokker-Planck Equation and the Wigner Surmise (with A. Pimpinelli and Hailu Gebremariam
4) Survival Probability in the Fluctuations of Interacting Steps (with Hailu Gebremariam and C. Dasgupta)

Gordon Conference, Mt. Holyoke Coll., South Hadley, MA., June 2005 (posters):
1) Step Evolution Toward Equilibrium: Fokker-Planck Equation and the Wigner Surmise (with Alberto Pimpinelli, Hailu Gebremariam, and Howard L. Richards)
2) Extended Lattice Gas Interactions: Ab-initio Evaluation on Cu Surfaces & Implications (with T. J. Stasevich and S. Stolbov)

American Physical Society, Baltimore, Mar. 2006:
1) Step Evolution Toward Equilibrium: Fokker-Planck Approach (with Ajmi Ben Hamouda, Alberto Pimpinelli, and Hailu Gebremariam)
2) Anisotropy of Step Stiffness and Its Implications (with T. J. Stasevich and F. Szalma)
3) Ab-initio Evaluation of Extended Lattice Gas Interactions of Cu on Cu(111) and Cu(001) (with T. J. Stasevich)
4) Transport in Nano-scale step Fluctuations (with F. Szalma)
5) Persistence Properties of Interacting Steps: Qualitative Failure of Mean Field (with Hailu Gebremariam and C. Dasgupta)

NNIN/C conference "Synergy between Experiment and Computation in Nanoscale Science," Harvard U., June 2006: Multi-site Interactions—Implications and Sensitivity to Relaxation of Adatoms: Density Functional Theory Calculations (with Rajesh Sathiyanarayanan and T. J. Stasevich)

Physical Electronics Conference, Princeton, June 2006: Step Stiffness Anisotropy: From Experiment to Theory and Back Again (with Timothy J. Stasevich)

European Conference on Surface Science, Paris, Sep. 2006:
1) Step Dynamics Out of Equilibrium: Fokker-Planck Approach to the Terrace Width Distribution (with Ajmi Bhadj-Hamouda, Alberto Pimpinelli, and Hailu Gebremariam)
2) Observation of Novel Fluctuation Behavior for Facet Edges (with M. Degawa, T. J. Stasevich, W.G. Cullen, A. Pimpinelli, and E.D. Williams)

American Vacuum Society, San Francisco, Nov. 2006:
1) Capture-Zone Scaling in Island Nucleation: Analytic Results and Their Relation to Other Fluctuation Phenomena (with Alberto Pimpinelli-- Surface Science Post-deadline Session)
2) Anisotropy in the Continuum Step Model: From Step Stiffness to Step-Edge Mobility (with T. J. Stasevich, C. Tao, and E. D. Williams)
3) Ag Islands Decorated by C_{60} (with C. Tao, T. J. Stasevich, and E. D. Williams)

American Physical Society, Denver, Mar. 2007:
1) Distinctive Fluctuations of Facet Edges (with M. Degawa, T. J. Stasevich, W. G. Cullen, Alberto Pimpinelli, and E. D. Williams)
2) Multisite Interactions in Lattice-Gas Models of Adsorbates: Reconciling Adatom Relaxations at Steps (with Rajesh Sathiyanarayanan and T. J. Stasevich)
3) Free Energy of a 1D Metal-Molecule Interface C_{60}-Decorated Ag Islands (with T. J. Stasevich, C. Tao, and E. D. Williams)
4) Ab-initio Evaluation of Extended Lattice Gas Interactions of Cu on Cu(111) and Cu(001) (with T. J. Stasevich)
5) Capture-Zone Areas & the Wigner Distribution: New Case of Universal Scaling of Spacings in Fluctuating Systems (with Alberto Pimpinelli)

Nonequilibrium Interface Dynamics: Theory and Simulation from Atomistic to Continuum Scales (nid07), U. Maryland, April 2007: Quarto Interactions between Cu Adatoms on Cu(110) Surface (with Suriyanarayanan Vaikuntanathan and Rajesh Sathiyanarayanan)

Statphys23, Genoa, Italy, July 2007: Application of the Generalized Wigner Surmise to Non-equilibrium Problems at Surfaces: Relaxation, Growth, and Capture-Zone Scaling (with Alberto Pimpinelli)

AVS (formerly American Vacuum Society), Seattle, Oct. 2007:
1) Capture-Zone Scaling and Universal Fluctuation Phenomena (with Alberto Pimpinelli)
2) Impurity Decoration for Crystal Shape Control: C_{60} on Ag(111) (with T. J. Stasevich, C.G. Tao, W.G. Cullen, and E. D. Williams-- Surface Science Post-deadline Session)

American Physical Society, New Orleans, Mar. 2008:
1) Characterizing Capture-Zone Distributions: Generalized Wigner vs. Alternative Forms, and Experimental Fits (with Alberto Pimpinelli)
2) Terrace-width Distributions on Vicinal Surfaces: Effective Attraction Between Noninteracting Touching Steps (with Rajesh Sathiyanarayanan and Ajmi BHadj Hamouda)
3) Impurity Decoration for Crystal Shape Control: C_{60} on Ag(111) (with T. J. Stasevich, C.G. Tao, W.G. Cullen, and E. D. Williams)
4) Growth Instabilities and Adsorbed Impurities: Nanostructuring of Vicinal Surfaces Controlled by Adsorbates (with Ajmi BHadj Hamouda, P.E. Hoggan, and Alberto Pimpinelli)
5) Super-oscillations in the Interlayer Lattice Relaxation of Quantum Pb Films (with Yu Jia, Biao Wu, H.H. Weitering, Zhenyu Zhang)

AVS, Boston, Oct. 2008: Short vs. Long-Range Interactions: Consequences for Distributions (with Alberto Pimpinelli, Kwangmoo Kim, Ajmi BHadj Hamouda, and Rajesh Sathiyanarayanan)

100^{th} Statistical Mechanics Conference, Rutgers, Piscataway, Dec. 2008: Touching Steps on Vicinal Surfaces: Corrections to the Fermion Picture (with Kwangmoo Kim and Rajesh Sathiyanarayanan)

American Physical Society, Pittsburgh, Mar. 2009:
1) Narrowing of Terrace-width Distributions During Growth on Vicinals (with Ajmi BH. Hamouda and Alberto Pimpinelli)

2) Relaxation of Terrace-width Distributions: Novel Analysis and Features (with Ajmi BH. Hamouda and Alberto Pimpinelli)
3) Role of Adatom Relaxations in Computing Lattice-gas Energies: Multisite Interactions (with Rajesh Sathiyanarayanan)
4) Monte Carlo Study of the Honeycomb Structure of Anthraquinone Molecules on Cu(111) (with Kwangmoo Kim and Ludwig Bartels)
5) Impurities in Vacuum Deposition: Effect on Island Nucleation and Surface Morphologies (with Alberto Pimpinelli and Ajmi BH. Hamouda)

17th American Conference on Crystal Growth and Epitaxy (ACCGE-17), Lake Geneva WI, Aug. 2009:
1) Evolution of Size Distributions during Relaxation and Growth on Surfaces (with Alberto Pimpinelli and Ajmi BH. Hamouda)
2) Reconciling Calculated and Experimental Key Energies in Modeling Growth: Effects of Impurities and of Lateral Relaxations (with Rajesh Sathiyanarayanan)

American Physical Society, Portland (OR), Mar. 2010:
1) Benzene on Cu(111): I. Application of van der Waals-Density Functional Formalism to Determine Binding Sites and Energy (with Kristian Berland and Per Hyldgaard)
2) Benzene on Cu(111): II. Molecular assembly due to Lateral van der Waals and Surface-State-Mediated Indirect Interactions (with Kristian Berland and Per Hyldgaard)
3) Role of Codeposited Impurities in Growth: Explaining Cu(0 0 1) (with Ajmi BH. Hamouda, Rajesh Sathiyanarayanan, and A. Pimpinelli)
4) Role of Codeposited Impurities in Growth: Dependence of Morphology on Binding and Barrier Energies (with Rajesh Sathiyanarayanan, Ajmi BH. Hamouda, and A. Pimpinelli)
5) Terrace-Width Distributions of Touching Steps: Modification of the Fermion Analogy, with Implications for Measuring Step-Step Interactions (with Rajesh Sathiyanarayanan, Ajmi BH. Hamouda, Kwangmoo Kim)
6) Monte Carlo Study of the Diffusion of CO Molecules inside Anthraquinone Hexagons on Cu(111) (with Kwangmoo Kim, Jon Wyrick, and Ludwig Bartels)

German Physical Society (DPG), Regensburg, Germany, March 2010:
1) Benzene on Cu(111): Adsorption and Assembly by Lateral van der Waals and Surface-State-Mediated Interactions (with Kristian Berland and Per Hyldgaard)
2) Terrace-Width Distributions (TWDs) of Touching Steps: Modification of the Fermion Analogy, with Implications for Measuring Step-Step Interactions on Vicinal Surfaces (with Rajesh Sathiyanarayanan, Ajmi BH. Hamouda, and Kwangmoo Kim

American Physical Society, Dallas, Mar. 2011:
1) One-dimensional Model of Interacting-Step Fluctuations on Vicinal Surfaces: Analytical Formulas and Kinetic Monte-Carlo Simulations (with Paul Patrone and D. Margetis)
2) Spacing Distribution Functions for 1D Point Island Model with Irreversible Attachment (with Diego Luis González and A. Pimpinelli)
3) Response of the Shockley surface state on Cu(111) to an external electrical field : A density-functional theory study (with Kristian Berland and Per Hyldgaard)
4) Formation of Molecular Networks: Tailored Quantum Boxes and Behavior of Adsorbed CO in Them (with Jon Wyrick et al.)
5) Origin of the Giant Honeycomb Network of Quinones on Cu(111) (with Kwangmoo Kim, Jon Wyrick, Zhihai Cheng, Ludwig Bartels, Kristian Berland , and Per Hyldgaard)
6) Mechanical Properties of a vdW molecular monolayer at a metal surface: Structural Polymorphism leading to facile compression (with Dezheng Sun et al.)
7) Monte Carlo Study of the Fish-like Patterns of Anthracenes on Cu(111) (with Kwangmoo Kim Dezheng Sun, Dae-Ho Kim, Ludwig Bartels)
8) Modeling Island-Growth Capture Zone Distributions (CZD) with the Generalized Wigner Distribution (GWD): New Developments in Theory and Experiment (with Alberto Pimpinelli, Diego Luis González, Rajesh Sathiyanarayanan and Ajmi BH. Hamouda
9) Wrinkling of graphene membranes supported by silica nanoparticles on substrates (with Mahito Yamamoto et al.)

American Physical Society, Boston, Feb/Mar. 2012:

1) Voronoi Cell Patterns: theoretical model and application to submonolayer growth (with D.L. González)
2) Voronoi Cell Patterns: Application of the size distribution to societal systems (with D.L. González, R. Sathiyanarayanan, & A. Pimpinelli)
3) Nucleation of C_{60} on ultrathin SiO_2 (with B. Conrad, M. Groce, et al.)
4) The Relaxation of Vicinal (001) with ZigZag [110] Steps (with M. Hawkins et al.)
5) Anisotropic Surface State Mediated RKKY Interaction Between Adatoms on a Hexagonal Lattice (with P. Patrone)
6) Effect of physisorbed molecules and an external external fields on the metallic Shockley surface state of Cu(111): A density functional theory study (with K. Berland & P. Hyldgaard)
7) Simulation of Nanowires on Metal Vicinal Surfaces: Effect of Growth Parameters and Energetic Barriers (with A. Hamouda & S. Blel)
8) Effect of charged impurities and morphology on oxidation reactivity of graphene (with M. Yamamoto, W. Cullen, & M. Fuhrer)
9) Wrinkling instability in graphene supported on nanoparticle-patterned SiO_2 (with W. Cullen, M. Yamamoto, O. Pierre-Louis, and M. Fuhrer)
10) Graphene symmetry-breaking with molecular adsorbates: modeling and experiment (with M. Groce, M. Hawkins, et al.)

American Physical Society, Baltimore, Mar. 2013:
1) Developments in Characterizing Capture Zone Distributions in Island Growth (with A. Pimpinelli, D.L. González, R. Sathiyanarayanan)
2) Distribution of Steps with Finite-Range Interactions: Analytic Approximations and Numerical Results (with D.L. González, D.F. Jaramillo, G. Téllez)
3) Molecular adsorbates on HOPG: Toward modulation of graphene density of states (with Michelle Groce, W.G. Cullen)
4) Wrinkling instability in nanoparticle-supported graphene: implications for strain engineering (with W.G. Cullen, M. Yamamoto, O. Pierre-Louis, J. Huang, M.S. Fuhrer)
5) Oxidation of atomically thin MoS_2 on SiO_2 (with M. Yamamoto, W.G. Cullen, M.S. Fuhrer)
6) A theoretical study of symmetry-breaking organic overlayers on single- and bi-layer graphene (with Josue R. Morales-Cifuentes)
7) On the Connection between Kinetic Monte Carlo and the Burton-Cabrera-Frank Theory (with Paul N. Patrone, D. Margetis)
8) Capture Zone Distributions and Island Morphologies in Organic Epitaxy and Graphene Formation (with A. Pimpinelli)

Physical Electronics Conference, Raleigh, June 2013: Pattern Formation of Benzene and Related Organics on Cu(111): How Important Are Surface-State Mediated Interactions?
(with K. Berland, P. Hyldgaard, K. Kim, P.N. Patrone, J. Wyrick, Z. Cheng, D. Sun, D. Kim, Y. Zhu, M.M. Luo, W.Lu, and L. Bartels)

17th International Conference on Crystal Growth and Epitaxy (ICCGE-17), Warsaw, Aug. 2013: Analyzing Capture Zone Distributions (CZD) in Growth: Theory and Applications
(with A. Pimpinelli, D.L. González, and R. Sathiyanarayanan)

AVS, Long Beach, CA, Oct. 2013:
1) Analyzing Capture Zone Distributions (CZD) in Growth: Theory and Applications
(with A. Pimpinelli, D.L. González, and R. Sathiyanarayanan)
2) "Princess and the Pea" at the Nanoscale: Wrinkling and Unbinding of Graphene on Nanoparticles
(with M. Yamamoto, O. Pierre-Louis, J. Huang, M.S. Fuhrer, W.G. Cullen)

American Physical Society, Denver, Mar. 2014:
1) Further Developments in Characterizing Capture Zone Distributions (CZD) in Island Growth
(with A. Pimpinelli, D.L. González)

2) Few-layer and Symmetry-Breaking Effects on the Electrical Properties of Ordered CF_3Cl Phases on Graphene (with J. Morales-Cifuentes, Y. Wang, J. E. Reutt-Robey)
3) Diffusion of anthracene derivatives on Cu(111) studied by STM and DFT (with J. Wyrick and L. Bartels)

Physical Electronics Conference, Eau Claire, WI, June 2014: Few-layer and Symmetry-Breaking Effects on the Electrical Properties of Ordered $CClF_3$ Phases on Graphene (with J. Morales-Cifuentes, Y. Wang, J. E. Reutt-Robey).

XXVI IUPAP Conference on Computational Physics, CCP2014**,** Boston, Aug. 2014: Characterizing Capture Zone Distributions (CZD) in Island Growth on Surfaces: Simulations Confront Experiments (with A. Pimpinelli and D.L. González)

AVS, Baltimore, Oct. 2014:
1) Progress in Characterizing Submonolayer Island Growth: Capture-Zone Distributions, Growth Exponents, and Hot Precursors (with A. Pimpinelli, J. Morales-Cifuentes, and, D.L. González)
2) Few-layer and Symmetry-Breaking Effects on the Electrical Properties of Ordered $CClF_3$ Phases on Graphene (with J. Morales-Cifuentes, Y. Wang, J. E. Reutt-Robey).

American Physical Society, San Antonio, Mar. 2015:
1) Characterizing Submonolayer Growth of 6P on Mica: Capture Zone Distributions vs. Growth Exponents and the Role of Hot Precursors (with J.R. Morales-Cifuentes and A. Pimpinelli)
2) How Hot Precursor Modify Island Nucleation: A Rate-Equation Model (with J. Morales-Cifuentes and A. Pimpinelli)

Physical Electronics Conference, New Brunswick, NJ, June 2015:
1) Progress in Characterizing Submonolayer Island Growth: Capture-Zone Distributions, Growth Exponents, & Hot Precursors (with A. Pimpinelli, D.L. González, and J.R. Morales-Cifuentes)
2) Hot Precursors Modify Island Nucleation: A Rate-Equation Model (with J. Morales-Cifuentes & AP)

20th American Conference on Crystal Growth and Epitaxy, 17th Biennial Workshop on Organometallic Vapor Phase Epitaxy, and 2nd 2D Electronic Materials Symposium, Big Sky, MT, Aug. 2015: Reconciling Capture-Zone Distributions and Growth Exponents: Role of Hot Precursors in Submonolayer Growth of Hexaphenyl on Mica (with J. Morales-Cifuentes and A. Pimpinelli)

AVS, Long Beach, CA, Oct. 2015: Reconciling Complimentary Analyses of Epitaxial Growth: Role of Transient Mobility for para-Hexaphenyl on Mica (with J. Morales-Cifuentes and A. Pimpinelli)

American Physical Society, Baltimore, Mar. 2016:
1) Progress in Application of Generalized Wigner Distribution to Growth Problems and Social Phenomena (with J.R. Morales-Cifuentes, A. Pimpinelli, and D.L. González)
2) Role of Transient Mobility on Submonolayer Island Growth: Extensions and Testing (with J.R. Morales-Cifuentes and A. Pimpinelli)
3) Coverage Dependent Assembly of Anthraquinone on Au(111) (Brad Conrad, A. Deloach, and D.B. Dougherty)
4) Magnetism and Raman Spectroscopy of Pristine and Hydrogenated '$TaSe_2$ Monolayer Tuned by Tensile and Pure Shear Strain (Sugata Chowdhury, J. Simpson, and A.R. Hight-Walker)

ICSFS-18: International Conference on Solid Films and Surfaces, Chemnitz, Germany, Aug. 2016: Submonolayer Island Growth of Organics: Capture-Zone Distributions, Growth Exponents, & Transient Mobility (with A. Pimpinelli, D.L.González, and J.R. Morales-Cifuentes)

32nd European Conference on Surface Science (ECOSS-32), Grenoble, France, Sept. 2016: Submonolayer Island Growth of Organics: Capture-Zone Distributions, Growth Exponents, & Transient Mobility (with A. Pimpinelli, D.L.González, and J.R. Morales-Cifuentes)

17th Workshop on Dynamical Phenomena at Surfaces: (WDPS17), Milan, Italy, Sept. 2016: Transient Mobility Revisited: Impact on Signatures of Island Growth on Surfaces (with J. Morales-Cifuentes and A. Pimpinelli)

Non-equilibrium dynamics of thin films - solids, liquids and bioactive materials, CECAM Workshop, Lausanne, Switzerland, Sept. 2016: Subtleties in Fluctuations of Steps and Islands on Surfaces, with Implications for Their Analysis

AVS, Nashville, TN, Nov. 2016: Progress in Characterizing Submonolayer Island Growth: Capture-Zone Distributions, Growth Exponents, and Transient Mobility (with A. Pimpinelli, J. Morales-Cifuentes, and D.L.González)

American Physical Society, New Orleans, Mar. 2017:

1) Using Curved Crystals to Study Terrace-Width Distributions

2) Transient Mobility on Submonolayer Island Growth: An Exploraton of Asymptotic Effects in Modeling (with J. Morales-Cifuentes and A. Pimpinelli)

3) Low-Frequency Raman Modes of 2H-TaSe2 in the Charge Density Wave Phase (with S. Chowdhury, Jeffrey Simpson, and A. R. Hight Walker)

ECSCD17 (European Conference on Surface Crystallography and Dynamics), San Sebastian, Spain, June 2017: Structure and electronic states of vicinal noble metal surfaces with densely kinked steps (with G. Vasseur, J. Lobo-Checa, I. Piquero-Zulaica, F. Schiller, , and J. E. Ortega)

C. Books or Contributions to Edited Books

"Theory of Interaction Between Chemisorbed Atoms," Chemistry and Physics of Solid Surfaces, II, Ralf Vanselow, ed. (CRC Press, Boca Raton, 1979), 181–208.

"Theoretical Issues in Chemisorption," TLE, J. A. Hertz and J. R. Schrieffer, in The Theory of Chemisorption (Topics in Current Physics series), John R. Smith, ed. (Springer-Verlag, Berlin, 1980), 183–235. Translated into Russian (Mir, Moscow, 1983), 256–327.

"Critical Phenomena of Chemisorbed Overlayers," Chemistry and Physics of Solid Surfaces, IV, R. Vanselow and R. Howe, eds. (Springer-Verlag, Berlin, 1982), 251–280.

"Fine Structure Using Electron Beams," R. L. Park and TLE, Extended X-ray Absorption Fine Structure, R. W. Joyner, ed. (Plenum, New York, 1985??), Chap. 10.

"Extended Fine Structure in APS," TLE, M.J. Mehl, J. F. Morar, R. L. Park, and G. E. Laramore, EXAFS and Near Edge Structure, A. Bianconi, L. Incoccia, and S. Stipcich, eds. (Springer, Berlin, 1983), 391–393.

"Critical Phenomena of Chemisorbed Atoms and Reconstruction--Revisited," Chemistry and Physics of Solid Surfaces, VII, R. Vanselow and R. Howe, eds. (Springer-Verlag, Berlin, 1988), 307–339.

"Extended X-ray Absorption Fine Structure and Related Techniques," M. L. denBoer, TLE, and J. J. Rehr, The Encyclopedia of Advanced Materials, David Bloor, Richard J. Brook, Merton C. Flemings, and Subhash Mahajan, eds. (Pergamon Press, Oxford, 1994), 771–783.

"Interactions Between Adsorbate Particles," in Physical Structure of Solid Surfaces, W.N. Unertl, ed. (Elsevier, Amsterdam, 1996), Handbook of Surface Science, vol. 1, S. Holloway and N.V. Richardson, series eds., invited pedagogical review chapter, 577–650.

"Survey of Self-Avoiding Random Surfaces on Cubic Lattices: Issues, Controversies, and Results," TLE and A. L. Stella, Topology and Geometry in Polymer Science (IMA Volumes in Mathematics and Its

Applications, vol. 103), S.G. Whittington, D. Sumners, and T. Lodge, eds. (Springer-IMA series, Berlin, 1997), 159–174.

"Step Fluctuations: From Equilibrium Analysis to Step Unbunching and Cluster Diffusion in a Unified Picture," TLE and S.V. Khare, Dynamics of Crystal Surfaces and Interfaces, P.M. Duxbury and T.J. Pence, eds. (Plenum, New York, 1997), 83–96.

Structure and Evolution of Surfaces (Proc. Fall 1996 MRS Mtg., vol. 440), R.C. Cammarata, E.H. Chason, TLE, and E.D. Williams, eds. (Materials Research Society, Pittsburgh, 1997).

Thin Films—Structure and Morphology (Proc. Fall 1996 MRS Mtg., vol. 441), S.C. Moss, D. Ila, R.C. Cammarata, E.H. Chason, TLE, and E.D. Williams, eds. (MRS, Pittsburgh, 1997).

"Fluctuations of Step Edges: Revelations about Atomic Processes Underlying Surface Mass Transport," TLE, S.V. Khare, and O. Pierre-Louis, Mechanisms and Principles of Epitaxial Growth in Metallic Systems (Proc. Spring 1998 MRS Mtg., vol. 528), L.T. Wille, C.P. Burmester, K. Terakura, G. Comsa, and E.D. Williams, eds. (Materials Research Society, Pittsburgh, 1998), 237–252 [refereed].

"Influence of the Electrochemical Environment on Diffusion Processes Near Step and Island Edges: Ag(111) and Ag(100)," M.I. Haftel and TLE, Nucleation and Growth Processes in Materials (Proc. Fall 1999 MRS Mtg., vol. 580), A. Gonis, P.E.A. Turchi, and A.J. Ardell, eds. (Materials Research Society, Pittsburgh, 2000), 195 [refereed].

Critical introduction to 4 papers on surface physics, TLE and J. W. Davenport, in Selected Papers of J. Robert Schrieffer, N.E. Bonesteel and L.P. Gor'kov, eds. (World Scientific, Singapore, 2002).

"Multisite Interactions in Lattice-Gas Models," TLE and Rajesh Sathiyanarayanan, in Nanophenomena at Surfaces: Fundamentals of Exotic Condensed Matter Properties (or Surface Nanoscale Physics), M. Michailov, ed. (Springer Series in Surface Science, Berlin, 2011).

"Equilibrium Shape of Crystals," TLE, in Handbook of Crystal Growth, Fundamentals, 2nd ed., T. Nishinaga, P. Rudolph, and T. Kuech, eds. (Elsevier, Amsterdam, 2014--ISBN 978044456 3699/eBook:9780444593764), vol. 1A (Thermodynamics and Kinetics), chap. 5; arXiv 1501.02213.

G. Extended or Major University Service

1996–2016	Director/chair of Physical Sciences* Program & Physics Advisor
1996–2005	Coordinator of physics educational outreach of NSF-MRSEC
2003–13	Executive committee of NSF-MRSEC
2005–13	International Relations coordinator, NSF-MRSEC
1980–83,86-93,09-10	Executive Committee, Physics (Chair,09-10, Vice-Chair Fall 82)
1987–88,93-94,99–01,11-13	Physics Appointments, Promotion, & Tenure Committee (Chair 2000-01)
1996–99, 01-04,06-07,08-11	Physics Dept Priorities Committee (Chair 97-98, 07-08)
1982–84,95-96	Faculty Salary Advisory Committee
1999–2009	Physics Dept General Committee on Graduate Education
2009–14	Chair of Physics Dep't General Committee on Graduate Education
2014–17	Chair of Physics Dep't General Committee on Education
1983–fall84,87-89,2001-17	Chemical Physics Program Committee, Physics Rep.

*Established new specialty in Science Journalism as part of PSCI, formulating the requirements with a dean and a lecturer from the School of Journalism and shepherding the proposal through the relevant university committees

Graduate Students

Lyle D. Roelofs: B.S. (Calvin College) 6/75; M.S. 5/78; Ph.D. 9/80.
Dissertation: Theory of Phase Transitions in Chemisorbed Two-Dimensional Systems

David Loeffler: B.S. (U. of Maryland) 5/75; M.S. 5/78 (terminal).

Norman C. Bartelt: B.S. (U. of Maryland) 5/79; Ph.D. 8/86.
Dissertation: Numerical Studies of Two-Dimensional Lattice Gases Relevant to the Study of Phase Transitions of Chemisorption Systems

Rüdiger Schmolke: diplom work, from Univ. of Aachen

Raymond C. Nelson: M.S. 5/92 [Ph.D., U. New Mexico, 2001].
Thesis: Energies of Steps, Kinks, and Defects on Vicinal Silver (100) and Silver (111) by the Embedded Atom Method

Sanjay V. Khare: B.S. (Bombay U.) 1/88; M. Sc. (India Inst. of Tech., Bombay) 7/89;
Ph.D. 9/96; American Vacuum Society Graduate Research Award (10/96)
Dissertation: A Theoretical Study of Step Edge Fluctuations and of Brownian Motion of Adatom and Vacancy Clusters

Hailu Gebremariam Bantu: B.S. (U. of Addis Ababa); M.S. (U. of Syracuse) 99; Ph.D. 11/05
Dissertation: Terrace Width Distribution and First Passage Probabilities for Interacting Steps
Offered postdoctoral position with T. S. Rahman at Central Florida U.
Lecturer in physics at UMCP and Montgomery College (Takoma Park)

Timothy J. Stasevich: B.S. (U. of Michigan, Dearborn); M.S. (w/ A. Dragt) 01; Ph.D. 8/06.
Dissertation: Modeling the Anisotropy of Step Fluctuations on Surfaces: Theoretical Step Stiffness Confronts Experiment

Rajesh Sathiyanarayanan: M.S.[Physics] and B.E. [Computer Science] (Birla Institute of Technology and Science, Pilani, Rajasthan, India) 5/03; Ph.D. 11/09
Dissertation: Steps on Vicinal Surfaces: Density-Functional Theory Calculations and Transcending Minimal Statistical-Mechanical Models

Kai Li (with Dr. Richard Silver at NIST, from Prof. E. D. Williams): Ph.D. 12/11
Dissertation: Nanofabrication on Engineered Silicon (100) Surfaces Using Scanning Probe Microscopy

Paul N. Patrone (with Prof. Dio Margetis, Math): B.A. (St. John's Coll.) 2010: Monroe H. Martin Graduate Research Fellowship (awarded to an exceptional student at the interface of mathematics and physics); NIST-ARRA Fellowship; Ph.D. 8/13.
Dissertation: Modeling of Interfaces: Applications in Surface and Polymer Physics

Tomasz Kott (with Dr. Bruce Kane, LPS, from Prof. E. D. Williams): B.S. (Bucknell) 06: Ph.D. 12/12
Dissertation: Measurements of Correlated 2D Electrons in the Lowest Landau Level on Si(111)
2013–: Johns Hopkins Applied Physics Lab

Michelle Groce (with Dr. W.G. Cullen and Profs. J.E. Reutt-Robey and Michael S. Fuhrer, from Prof. E. D. Williams): B.A. (MIT); Ph.D. 8/13.
Dissertation: Organic Molecular Thin Films on Device-Relevant Substrates

Mahito Yamamoto (with Dr. W.G. Cullen and Prof. Michael S. Fuhrer, from Prof. E. D. Williams); Ph.D. 8/13.
Dissertation: Two-Dimensional Crystals on Substrates: Morphology and Chemical Reactivity

Josue R. Morales-Cifuentes: B.S. Univ. of Southern Alabama

Postdoctoral Research Fellows

Michael J. Mehl, 1981 – 1983

Ulrich Glaus, 1986 – 1987

[Norman C. Bartelt, see above]

Olivier Pierre-Louis, 1997 – Dec. 1998

Howard L. Richards, Jan. 1999 – Aug. 2000

Ferenc Szalma, Jan. 2002 –Jun 2007

Ajmi Ben Hadj Hammouda, Oct. 2007 – Sept. 2008

Kwangmoo Kim, Jan. 2008 –March. 2011

Rajesh Sathiyanarayanan, half-time, Aug. –Sept. 2010

Diego Luis González Cabrera, Jan. 2010 – Dec. 2011

Undergraduate Students (Supervisor of Undergraduate Research)

Randy M. Roberts

Selman P. Hershfield

David Eisner

Lawrence Kieffer Warman

Saul D. Cohen

Robert D. Schroll

Courses Taught at the University of Maryland

Physics 102/499C	Physics of Music
Physics 104	How Things Work: Physics of Everyday Life
Physics 106	Light, Perception, Photography, and Visual Phenomena
Physics 115	Inquiry into Physics (for Early Childhood & Elementary Education)
Physics 165	Introduction to Programming in the Physical Sciences
Physics 171/171H	Introductory Physics I for Majors
Physics 195	Introductory Physics Lab I for Majors
Physics 196	Introductory Physics Lab II for Majors

Physics 260	General Physics [II, for Engineers]: Waves, Heat, and Electricity
Physics 263 (now 270)	General Physics III for Engineers
Physics 272/272H	Introductory Physics II for Majors
Physics 399	Special Problems in Physics
Physics 404	Introduction to Statistical Thermodynamics
Physics 420	Principles of Modern Physics [for Engineers]
Physics 421	Introduction to Modern Physics
Physics 499B	Special Problems in Physics
Physics 603	Methods of Statistical Physics
Physics 704	[Advanced] Statistical Mechanics
Physics 731	Survey of Solid State Physics
Physics 732	Survey of Solid State Physics II
Physics 739	Sem. in Theoretical Solid State Physics
Physics 798	Special Problems in Advanced Physics
Physics 798F	Introduction to Surface Physics
Physics 832	Theory of Solids I
Physics 833	Theory of Solids II
Physics 838A	Surface Physics Seminar
Physics 899	Doctoral Dissertation Supervision
CHPH 899	Doctoral Dissertation Supervision
HONR 228K	Great Ideas in Physics and Their Implications for Other Fields

Math Research Interaction Team (RIT): Kinetics and Fluctuations of Complex Crystal Surfaces