UNIVERSITY OF MARYLAND
Department of Physics, 1104 IPST Bldg. (Office 2100E), 8108 Regents Dr.
College Park, Maryland 20742-2431

CURRICULUM VITAE

Theodore L. Einstein
Professor
Phone: 301-405-6147 (office); 301-384-1438 (home) Web of Sci ResID F-7961-2011
FAX: 301-314-9404 Orcid ID: 0000-0001-6031-4923
e-mail: einstein@umd.edu Web: http://www.physics.umd.edu/~einstein

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:

[Head of Habilitation jury of Dr. Ajmi BH. Hamouda, Univ. Monastir, Tunisia, 2017 (could not go)]
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; Nonequilibrium Interface Dynamics: (nid07), 1 week at UMD, 2007; Nonequilibrium Interface Dynamics: Theory and Simulation from Atomistic to Continuum Scales (nid03), 1 week of tutorials and 2 weeks of seminars at UMD, 2003
American Physical Society, Comm. on Meetings (2009–11, 2018–21), APS Insurance Trust Board 2005–9 (chair 2006–8), Audit Comm. (2011–14, chair 2013); *Div. of Materials Physics:* Councillor, 2009–12, Secretary-Treasurer, 2003–8, co-rep. to Fed'n of Materials Societies, March mtgs abstract sorter
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
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
American Physical Society, DMP Focus Session Co-organizer, 2003, 2015, 2016; Local Committee for March Meeting (Baltimore, March, 1985)
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.
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:

Who's Who Lifetime Achievement (Albert Nelson) Award, 2017 (posted 2018)
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).

Surface Density of States on Crystalline Transition Metal Substrates, J. W. Davenport, TLE, and J. R. Schrieffer, Proc. 2nd Internat'l Conf. on Solid Surfaces, 1974, Jpn. J. Appl. Phys. Suppl. 2, Pt. 2, 691–694 (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,

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 $YBa_2Cu_3O_7$, 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).

Implications of Random-Matrix Theory for Terrace-Width Distributions on Vicinal Surfaces: Improved Approximations and Exact Results, TLE and O. Pierre-Louis, Surface Sci. 424, L299–L308 (1999).

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).

Terrace-Width Distributions on Vicinal Surfaces: Generalized Wigner Surmise and Extraction of Step-Step Repulsions, TLE, H. L. Richards, S. D. Cohen, O. Pierre-Louis, and M. Giesen, Appl. Surf. Sci. 175–6, 62–68 (2001).

Decay of Silicon Mounds: Scaling Laws and Description with Continuum Step Parameters, A. Ichimiya, K. Hayashi, E.D. Williams, TLE, M. Uwaha, and K. Watanabe, Appl. Surf. Sci. 175–6, 33–35 (2001).

Electromigration of Single-Layer Clusters, O. Pierre-Louis and TLE, Appl. Surf. Sci. 175–6, 129-133 (2001).

Step Wandering on Al/Si (111) - ($\sqrt{3}\times\sqrt{3}$) Surface at High Temperatures, I. Lyubinetsky, D. B. Dougherty, H. L. Richards, TLE, and E. D. Williams, Surf. Sci. 492, L671–L676 (2001).

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].

Step Interactions from Step-Step Correlations: Recent Progress and Remarkable Results for High-Temperature Vicinal Si(111), TLE, J. Jpn. Assn. for Crystal Growth 29, 20–27 (2002). [invited, refereed conference paper]

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) - ($\sqrt{3}\times\sqrt{3}$), I. Lyubinetsky, D. B. Dougherty, TLE, and E. D. Williams, Phys. Rev. B 66, 085327 [5pp.] (2002).

Si(111) Step Fluctuations at High Temperature: Anomalous Step-Step Repulsion, S. D. Cohen, R.D. Schroll, TLE, J.-J. Métois, Hailu Gebremariam, H. L. Richards, and E. D. Williams, Phys. Rev. B 66, 115310 [6pp.] (2002).

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Drexel University, Oct. 1982: 2-D Phase Transitions of Chemisorbed Atoms
Villanova University, Nov. 1982: Surface Physics at Maryland
Greater Washington Surface Science Colloquium, College Park, Sept. 1983: Phase Transitions of Chemisorbed Atoms: Some Questions for Theorists
University of Virginia, Oct. 1983: Chemisorbed Overlayers as 2-D Lattice Gases: Phase Diagrams, Critical Exponents, and Complications
University of Pennsylvania (Surface Group), Nov. 1983: Extended Absorption Fine Structure Using Electrons
University of Pennsylvania, April 1984: Chemisorbed Overlayers as 2-D Lattice Gases: Progress and Problems Virginia talk
University of Washington, June 1984: Critical Phenomena of Chemisorbed Atoms: Monte Carlo Simulations of Structure Factors and a Simpler Measurement Approach
University of Washington, June 1984: Calculations of Angular Momentum Branching Ratios for Electron Induced Ionization (Summer Institute on Core Level Spectroscopy)
Pennsylvania State University, Aug. 1984: Phase Transitions of Chemisorbed Atoms
National Bureau of Standards, Oct. 1984: Critical Properties of Chemisorbed Overlayers: How and Why to Measure Them
Ohio State University, Feb. 1985: Simulations of Phase Transitions of Chemisorbed Atoms: Measuring Specific Heat Anomalies Using LEED
Chalmers University of Technology (Gothenburg, Sweden), April 1985: Phase Transitions of Chemisorbed Atoms: Measuring the Specific Heat Singularity with LEED
NORDITA (Copenhagen), April 1985: Phase Transitions of Chemisorbed Atoms: Specific Heat Singularities Using LEED, Studied by Monte Carlo Simulation
University of Aarhus (Denmark), May 1985: Specific Heat Anomalies Using LEED: Monte Carlo Calculations for Chemisorbed Atoms
Norwegian Technical University, University of Trondheim, May 1985:
1) Extended Absorption Fine Structure Using Electrons;
2) Phase Transitions of Chemisorbed Atoms: Monte Carlo and Transfer Matrix Studies
Chalmers University of Technology, May 1985: Extended Absorption Fine Structure and Related Electron Techniques
Chalmers University of Technology, May 1985: ("Lunch Bunch" General Institute Colloquium): Physics of Music and Hearing
American Crystallographic Association, Stanford, Aug. 1985: Extended Absorption Fine Structure Using Electron Beams (with M.J. Mehl)
Maryland Association of Science Teachers, Ocean City, Oct. 1985: Sound of Music
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
Informal Stat. Phys. Seminar, U. of Maryland, Oct. 2015: Generalized Wigner Surmise Applied to Distributions in the Nanoworld and the Real World: From Steps and Islands on Surfaces to County Areas and Paris Metro Stations
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: Familiar and subtle aspects of fluctuations of stepped surfaces, island growth, and applications of the Wigner surmise
Kyushu University, Fukuoka, Japan, Oct. 2017: Unraveling Two Experimental Mysteries in Growth Via Impurity Co-deposition and Hot Precursors (with Alberto Pimpinelli, Josue R. Morales-Cifuentes, & Diego Luis González)
Osaka Electro-Communications University, Osaka, Japan, Oct. 2017: How General Ideas in Statistical Physics Helps One Understand Behavior of an Enormous Range of Systems
University of Arkansas, Fayetteville, AR, Jan. 2019: Universal Features of Fluctuations in the Nanoworld & the Commonplace World: Applications to Stepped Surfaces, Submonolayer Islands, Subway Stations, & County Area
Workshop on Interdisciplinary Topics in Statistical Physics, Univesity of Padua, Italy Sept, 2019: Some Results, Old and New, for Critical Behavior on Surfaces

2. Recent Contributed Talks

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)

100th 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)

American Physical Society, Los Angeles, Mar. 2018: Lognormal Distribution of Pore Areas for AQ on Au(111) (with A.S. DeLoach, B.R. Conrad, D.B. Dougherty, and R. Sathiyanarayanan)

Physical Electronics Conference, Durham, NH, June 2018: Patterns of Organics on Substrates with Metallic Surface States: Origins and Impact (with L. Bartels and J.R. Morales-Cifuentes)

AVS, Long Beach, CA, Oct. 2018: Step-Spacing Distributions Revisited: New Motivations from Curved Crystals and Other Systems

International Workshop on Nitride Semiconductors 2018 (IWN 2018), Kanazawa, Japan, Nov. 2018: Surface Adatom Density and Lifetime on Polar GaN Surfaces During MBE and MOVPE: A Theoretical Approach (with Y. Inatomi, Y. Kangawa, and A. Pimpinelli)

American Physical Society, Boston, Mar. 2019: Step-Spacing Distributions Revisited: Curved Crystals Bring Many Opportunities and Challenges to Analysis (with J.E. Ortega, F. Schiller, M. Corso, I. Piquero-Zulaica, J. Lobo-Checa, and A. Mugarza)

American Physical Society, Denver, Mar. 2020 [canceled due to COVID-19]:

1) Recent Applications of Voronoi Tesselation and Analysis of Their Size Distributions with the Generalized Wigner Surmise

2) Two-step Unconventional Protocol for Epitaxial Growth in One Dimension with Hindered Reactions (with J.A. Sánchez and D.L. González)

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 9780444563699/eBook:9780444593764), vol. 1A (Thermodynamics and Kinetics), chap. 5; arXiv 1501.02213.

C'. Book Reviews

John H. Hudson, Surface Science: An Introduction, reviewed in Physics Today 45 (12), 85-86 (Dec. 1992)

A. Modinos, Quantum Theory of Matter: A Novel Introduction, reviewed in Physics Today 50 (6), 86 (June 1997)

G. University Service

1996–2016	Director/chair of Physical Sciences* Program & Physics Advisor
1995–96	Physics Rep to Physical Sciences Program (PSCI), in prep to head
1996–2005	Coordinator of physics educational outreach of NSF-MRSEC
2003–13	Executive Committee of NSF-MRSEC
2005–13	International Relations coordinator, NSF-MRSEC
1982–84,95–96, 2020–	Faculty Salary Advisory Committee
2019–	Qualifier Exam Committee
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)
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.
2014–18	Banneker-Key Scholarship Interviewer
2015–17	Research Scientist Committee
2013–16	Physics Lecture Demonstration Facility Advisory Committee
1988–89	Campus Senate, also General Committee on Campus Affairs
1989–90	Chemical Physics ad hoc review committee
2001–02	CMPS Committee reviewing Physical Sciences Program
1991–93	Group seminar co-coordinator (springs)
1987–88	Course evaluation committee of UMCP Phi Beta Kappa
1981–82	Course Group Leader of Major Courses
1981–84	Physics Olympics
1988–89	Departmental delegate, univ. workshop on women in sciences
1988–89	Departmental Computer Committee

1992–95	Biophysics program liaison
1994–95	Department representative to college committee on retention
1982–83	Graduate Admissions Committee
1982–84	IPST Advisory Committee
1989–90	IPST Internal Review Committee
1992–94	Leader of physics majors introductory course sequence
1995–96	Member of review committee of dean of CMPS
1981–83	MPSE Promotion and Tenure Review Committee
1988–89	Led ad hoc comm. to foster Centr for Surface Science under UMCP Enhancement Plan
1986–88	Liaison with Mathematics Department
2000–01	Special Committee on Physics Major Introductory Sequence
2002–03	Physics Department website-revision committee
1997–98	Search Committee for Assistant Professor in Condensed Matter Theory
1998–99	Search Committee for Chair of Physics Department
2001–02	Search committee for hire in Condensed Matter Theory
2001–02	Search committee for hire in Nanophysics Experiment
1977–78	Search Committee for New Department Chairperson
1998–99	Search Coms. for Ass't Prof. in Cond. Matt. Theory & for Research Sci. in Surface Exp't
2009–10	Search Committee, Condensed Matter Theory
1975–78	Student Physics Society Advisor
1977–78	Committee on the Physics Department Community
1977–78	General Committee on Student Affairs
1978–79	Freshman Advisor
1979–80	Sophomore Advisor
1983–84	Undergraduate Advisor
1980–82	Undergraduate Advisor and Leader of Advising Group
1976–77	Undergraduate Honors Advisor
1977–82	Undergraduate Honors Committee
1985 fall	Univ. Committee on Undergraduate Studies Program (substitute for S.M. Bhagat)
1994–98	General and advising committees on undergraduate education

*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
1980–82: Post-doctoral fellow with S.-C. Ying in Physics Dept., Brown University
1982–88: Assistant Professor, Haverford College
1988–92: Associate Professor, Haverford College
1993–04: Professor, Haverford College
1993–04: [Chaired] Haverford Distinguished Professor of Computational Science

2001–04 Associate Provost, Haverford College
2004–11 Provost and Dean of Faculty, Colgate University
2012– President, Berea College

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

Paul E. Hunter: B.S. (Wilkes College) 6/74; M.S. 5/76; Ph.D. candidate, part-time, but did not finish. Worked on cross-tie memory at NSWC, now managerial at Naval Research Lab.

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
1988–93: Post-doctoral fellow in Physics, U. of Maryland
1993–95: Assistant research scientist, U. of Maryland
1995–95: Associate research scientist, U. of Maryland
1995– : Senior, then distinguished, member of the technical staff, Sandia National Laboratories, Livermore, CA
2000: APS Fellow (DMP)
2001 MRS Medal

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
1992–95: Physics instructor at U.S. Military Academy, West Point, N.Y.
1995–2001: Technical Director of Thermionics Programs for the Defense Special Weapons Agency Field Command, New Mexico Engineering Research Institute, Albuquerque, NM
2002–: Physics [& Nuclear Engineering] Professor at U.S. Military Academy, West Point, N.Y. [now Col. and Deputy Department Head]

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
1996–98: Post-doctoral fellow with J. W. Wilkins in Physics Dept., Ohio State University
1999–2004: Post-doctoral fellow with Duane Johnson et al. in Materials Sci. & Eng. Dept., University of Illinois
2004–09: Assistant Professor of Physics, U. of Toledo
2009–15: Associate Professor of Physics, U. of Toledo
2015–: Professor of Physics, U. of Toledo

Maria Rita D'Orsogna: laurea (U. of Padua) 1996: M.S. 8/98; sophisticated Monte Carlo simulations of growth on Cu(100); study of kink Ehrlich-Schwoebel effect and edge diffusion. Returned to Italy for personal reasons and worked at IBM. Now back in USA (Ph.D. from UCLA '03), postdoc at Caltech, then at UCLA, now Assoc. Prof. of Mathematics at California State U., Northridge.

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
2006–10: Post-doctoral fellowship with J. McNally, National Cancer Inst., National Inst.of Health
2010–12: JSPS (Japan Society for the Promotion of Science) fellow, Osaka Univ.
Oct. 2013–14: Junior Fellow Janelia Farm Research Campus, Ashburn, VA
Oct. 2014: Assistant Prof. of Molecular Biology, Colorado State U., Fort Collins

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
2009–10: Post-doctoral fellowship with K. Fichthorn et al., Pennsylvania State U.
2010–15: Staff position, IBM Semiconductor Research and Development Center, Bangalore
2015–: Staff position, Applied Materials, Bangalore

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
2013–2015: IMA (Institute for Mathematics and its Applications) Industrial Postdoctoral Fellowship (with NIST and Boeing)
2015–: Staff position, NIST

Micah K. Hawkins: B.S. (Washington U. [St. Louis]) 2005; M.S. (U. Michigan) 2007, took medical leave, then left program.

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
2013–14: Assistant Lab Director, Physics Dept., American University
2014–: Yield Engineer, Intel Corp, Portland, OR

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
2013–: National Institute for Materials Science (NIMS), Tsukuba, Japan

Jonathan M. Larson (with Janice E. Reutt-Robey); B.S. (Longwood U.) 2007; M.S. (Auburn U.), 2011; Ph.D. 11/17
Dissertation: Innovative Scanning Probe Methods for Energy Storage Science: Elucidating the Physics of Battery Materials at the Nano-to-Microscale
2018–: Postdoc, Lawrence Berkeley National Laboratory, Berkeley

Josue R. Morales-Cifuentes: B.S. (Univ. of Southern Alabama) 2010; Ph.D. 5/19
Dissertation: Submonolayer Adsorbates: Theoretical Studies of Transient Mobility and Symmetry Breaking

Postdoctoral Research Fellows

Michael J. Mehl, 1981 – 1983
Career: Naval Research Lab., retired Head of the Surfaces and Interfaces Section of the Center for Computational Materials Science, Washington, D.C.
2000: APS Fellow (DCP)

Ulrich Glaus, 1986 – 1987
Currently: senior software engineer, biotech, UBS, Zurich, Switzerland

[Norman C. Bartelt, see above]

Olivier Pierre-Louis, 1997 – Dec. 1998
Currently: tenured CNRS, Lab Head, Modelisation of Condensed Matter and Interfaces (MMCI), U. Claude Bernard Lyon 1, France

Howard L. Richards, Jan. 1999 – Aug. 2000
Currently: Assistant Professor of Physics, Marshall University, Huntington, WVa

Ferenc Szalma, Jan. 2002 –Jun 2007
Master of Science in Computational Finance, Carnegie-Mellon U.-Tepper Schl. Business, NYC, 2008
Currently CTO & CQO at Bondberg in New York City

Ajmi Ben-Hadj Hammouda, Oct. 2007 – Sept. 2008
Currently "Maître Assistant" [advanced-level junior faculty position] [Higher-education] Institute of Computing and Mathematics (plus affiliation with Faculty of Sciences), Univ. of Monastir, Tunisia; Habilitation July 2017

Kwangmoo Kim, Jan. 2008 –March. 2011
Postdoctoral fellow with Prof. Hyunggyu Park, Korea Institute for Advanced Study, Seoul

Rajesh Sathiyanarayanan, half-time, Aug. –Sept. 2010
See graduate student list above

Diego Luis González Cabrera, Jan. 2010 – Dec. 2011
Currently Assistant Prof. at Universidad del Valle, Cali, Colombia

Undergraduate Students (Supervisor of Undergraduate Research)

Randy M. Roberts (Ph.D. from U. Texas, now in Risk Analysis and Decision Support Systems Group at Los Alamos National Laboratory)

Selman P. Hershfield (Ph.D. from Cornell, now Prof. of Physics at U. of Florida)

David Eisner (Fac. Res. Asst., Dept. Mech. Eng., UMCP)

Lawrence Kieffer Warman (Ph.D. from Indiana U.), Scientist at Raytheon Applied Signal Technology Inc.

Saul D. Cohen (Ph.D. in lattice gauge theory from Columbia U.; postdoc at Jefferson Lab, Boston Univ.; Institute for Nuclear Theory, Univ. Washington [Seattle], Software Engineer, Google; DevTech Compute Engineer at NVIDIA, Santa Clara, CA)

Robert D. Schroll (Ph.D. from U. of Chicago, was postdoc in polymers MRSEC at U. of Massachusetts, Amherst; postdoc at U. of Santiago, Chile; open-source software developer; Fellow, Data Incubator)

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 174	Physics Laboratory Introduction
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

Dissertation Committees (since 1994):

Jutta Luettmer-Strathman, April 1994
Susan Gregurick, Sept. 1994

Christopher J. Lanczycki, 1995
Wenbin Li, July 1995
Sheng-Nam Lai, Aug. 1995
Gotthard Saghi-Szabo, Nov. 1995
Woei-wei (Larry) Pai, 1995

Masao Yoshimura, Feb. 1996
Arnold Goldberg, July 1996
Sanjay V. Khare, Sept. 1996 (chair)

Ba-Yeun Ha, Oct. 1996
Helen E. Dorsett, Oct. 1996

Elain Su-Eng Fu, Aug. 1997

Da-Jiang Liu, May 1998
Daniel M. Zuckerman, Sept. 1998

Hsi-Sheng Goan, Jan. 1999
Pamir S. Alpay, Feb. 1999
Eden P. Go, June 1999
Abdullah Al-Sunaidi, Dec. 1999

Patcha Punyindu, Nov. 2000

Jarkko Heinonen (invited opponent, Helsinki Univ. of Technology), Jan. 2001
Krishnendu Sengupta, May 2001
Jonathan H. McCoy, June 2001 (M.A. with thesis)
Itay Furman (Hebrew University), June 2001
Luis Nasser, July 2001

Adrian A. Dragulescu, May 2002
Younchan Kim, Aug. 2002
Karen Siegrist, Dec. 2002

Paul W. Kolb, April 2004
Tong Zhao, Oct. 2004
Daniel B. Dougherty, Nov. 2004
Hadley Lawler, Nov. 2004

Shibin Dai, March 2005
A. Christian Silva, May 2005
Magdalena Constantin, Aug. 2005
Zhengkun Ma, Nov. 2005
Hailu Gebremariam Bantu, Dec. 2005 (chair)

Masashi Degawa, March 2006
Timothy J. Stasevich, Aug. 2006 (chair)
Lubo Zhou, Oct. 2006
Hui Li, Nov. 2006

Wayne Witzel, Apr. 2007
Ajmi Ben-Hadj Hamouda (U. Blaise Pascal, Clermont-2, France), June 2007
Chenggang Tao, Oct. 2007
Arthur Winter, Nov. 2007

James Tse, Apr. 2008
Anand Banerjee, Aug. 2008

Brad Conrad, May 2009
John Quah [Math], June 2009
Matthew Reames, June 2009
Rajesh Sathiyanarayanan, Oct. 2009 (chair)

Wei Jin, Nov. 2009

Mary Cobb Wittrock [French lit.; physics influence], Apr. 2010
Yinying Wei [Chem], May 2010
Mark Gubrud, Nov. 2010
Qiang Liu, Dec. 2010

Andrew Robertson, April 2011
Kwan Lee, Oct. 2011
Kai Li [CHPH], Dec. 2011 (chair)

Chuan-Fu Lin, July 2012
Shudong Xiao, July 2012
Tomasz Kott, Nov. 2012 (chair)

Qiuzi Li, April 2013
Dibyendu Mandal, May 2013
Paul N. Patrone, May 2013 (chair)
Kristen Burson, July 2013
Mahito Yamamoto, July 2013 (chair)
Michelle Groce, July 2013 (chair)
Linette N. Boisvert, Aug. 2013 (meteorology; dean's rep.)
Jonathan E. Wyrick, Sept. 2013 (Univ. of California, Riverside)
Yigit Subasi, Oct. 2013
Blake Riddick, Nov. 2013

Qian Shao, Aug. 2014 (chemistry; dean's rep.)
Ioannis Markou, Aug. 2014 (mathematics; dean's rep.)

Hoi Yin Hui, April 2015

Wentao Song, April 2016
John Biddle, May 2016
Joshua Schneider, July 2016

FNU Setiawan, April 2017
Aydin Cem Keser, May 2017
Jacob Tosado, May 2017
Jonathan M. Larson, Fall 2017 (chair)

Tianyu Ma, May 2018 (mathematics; dean's rep.)
Amit Nag, Aug. 2018

Lance Boyer, April 2019
Josue R. Morales Cifuentes, May2019 (chair)
Andrew Allocca, May 2019
Xiqiao Wang, May 2019

Duncan Boatright, Feb. 2020 (music composition; dean's rep)

E. <u>Technical Reports</u>

Multi-Adatom Effects in Chemisorption Energies: Ordered Overlayers and Island Shapes, TR# 77-005, July, 1976.
Comment on K. H. Lau and W. Kohn: "Oscillatory Indirect Interactions Between Adsorbed Atom"- Complications at Realistic Parameters, TR# 78-056, Dec, 1977.
The Three-Adatom Non-Pairwise ("Trio") Interaction, TR# 79-077, March, 1979.