Eduardo D. Glandt

Nemirovsky Family Dean Emeritus
School of Engineering and Applied Science
University of Pennsylvania
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EDUCATION

Chemical Engineer (Magna cum Laude), University of Buenos Aires, 1968

M.S. (Chemical Engineering) University of Pennsylvania, 1975

Ph.D. (Chemical Engineering) University of Pennsylvania, 1977

APPOINTMENTS

University of Pennsylvania, School of Engineering and Applied Science: Nemirovsky Family Dean Emeritus, July 2015-present, Interim Dean and Dean, September 1998 to June 2015. Department of Chemical and Biomolecular Engineering: Robert D. Bent Professor, October 2003 to June 2010; Russel Pearce and Elizabeth Crimian Heuer Professor, October 1995 to 1998; Carl V.S. Patterson Professor, July 1990 to October 1995; Chairman, February 1991 to December 1994; Professor, July 1985 to June 1990; Associate Professor, July 1981 to June 1985; Assistant Professor, July 1977 to June 1981; Lecturer, September 1975 to June, 1977.

National Institute of Industrial Technology, Buenos Aires, Argentina. Chemical Engineering Researcher, October 1967 to June 1973.

University of Buenos Aires -- Adjunct Professor, March 1972 to June 1973; Lecturer, March 1969 to February 1972; Department of Chemical Engineering.

U.S. Bureau of Mines -- Visiting Scholar, October 1969 to May 1970.

HONORS

Tau Beta Pi.

United Nations Fellow, 1969-70.

Honor Diploma, University of Buenos Aires, 1972.

Wilson S. Yerger Memorial Fellowship, 1974.

S. Reid Warren Award for Distinguished Teaching, School of Engineering and Applied Science, University of Pennsylvania, 1977.

Victor K. LaMer Award, Surface and Colloid Science Division, American Chemical Society, 1979.

Christian R. and Mary F. Lindback Award for Distinguished Teaching, University of Pennsylvania, 1980.

Dodge Lecture, Yale University, 1985.

Merck Lecture, University of Puerto Rico, 1986.

Gulf Visiting Professorship, Carnegie-Mellon University, 1989-90.

McCabe Lecture, North Carolina State University, 1989

Third Van Ness Award Lectures, Rensselaer Polytechnic Institute, 1993

Merck Distinguished Lecture, Rutgers University, 1994

Designated "Distinguished Argentine Scientist Residing Abroad, 1994.

Peter Debye Lectures, Cornell University, 1995

Texas Distinguished Faculty Lecture, University of Texas at Austin, 1995

Elected to the National Academy of Engineering, 1996

Lacey Lectures, California Institute of Technology, 1997

Wilhelm Lectures, Princeton University, 1998

Blue-Green Lecture, University of Michigan, Michigan State University, 2003

Leland Lecture, Rice University, 2004

Elected to the Argentine National Academy of Exact, Physical and Natural Sciences, 2006

Van Antwerpen Award, American Institute of Chemical Engineers, 2018

UNIVERSITY OF PENNSYLVANIA SERVICE (partial)

University: Search Committees for Provost, Dean of the School of Arts and Sciences (Chair), Dean of the Wharton School of Business (Chair), Dean of the School of Design (Chair), Dean of the School of Medicine (twice), Dean of Admissions; Conflict of Interest Standing Committee (Chair), University Council; School of Engineering and Applied Science Committees: Faculty Council (Chair), Undergraduate Affairs, Graduate Affairs. Department of Chemical Engineering: Department Chair (1990-94), Undergraduate Curriculum Chair, Graduate Group Chair.

BOARD- AND ADVISORY-COUNCIL MEMBERSHIPS (partial)

School of Chemical Engineering, Cornell University, 1992-1998

Department of Chemical Engineering, Tulane University, 1994-present

Department of Chemical Engineering, Carnegie Mellon University, 1995-present

Department of Chemical Engineering, University of Pittsburgh, 1997-2002

Carnegie Institute of Technology External Board, 1998-2003

Department of Chemical Engineering, Lehigh University, 1998-2003

Department of Chemical Engineering, University of Delaware, 1999-2004

Department of Engineering, Swarthmore College, 1999-2004

Member, McGraw-Hill Chemical Engineering Series Advisory Board, 1993-2003

College of Engineering Advisory Board, University of Delaware, 2008-2013

AIChE Awards Committee. Member, 1998-2003; Chairman: 2000-2003.

Petroleum Research Fund Advisory Board, 1991-1999; Chairman, Chemical Engineering Committee 1992-1993, 1995-1996.

University City Science Center, Philadelphia, 2000-2004, 2006-2010

National Academy of Engineering, Chairman, Chemical Engineering Section, 2005-2006.

National Research Council Advisory Board on NSF Graduate Research Fellowships, Member, 1990, 2008; Chairman: 1991, 1993, 1994.

National Academy of Engineering, Chemical Engineering Peer Committee, 1998-2001.

Yale University, Advisory Board, School of Engineering and Applied Science, 2008-2010.

Lehigh University Board of Trustees, 2010-2016.

Hoover Medal Board, 201-2022-

National Academy of Engineering, Chairman, Chemical Engineering Section, 2013-2014

American Institute of Chemical Engineers' Foundation Chair, 2011-2014

Chemical Heritage Foundation Board of Directors, 2013-2017

National Academy of Engineering, Draper Prize Committee, 2014-2018; Chair, 2015-2017.

Science History Institute Board of Directors, 2018-

John Scott Medal Board, 2015-present

Princeton University School of Engineering Leadership Council, 2017-2020.

EXTERNAL REVIEW COMMITTEES (partial)

Department of Chemical Engineering, University of Notre Dame, 1998

Department of Chemical Engineering, University of Puerto Rico, 1999

Department of Chemical Engineering, Vanderbilt University, 2000

Department of Chemical Engineering, Princeton University, 2000

School of Chemical Engineering, Cornell University, 2002

University College Dublin, 2002

Department of Chemical Engineering, University of Michigan, 2003

Whiting School of Engineering, Johns Hopkins University, 2003

School of Engineering, Tulane University, 2004

Department of Chemical Engineering, University of Illinois at Chicago, 2004

School of Chemical Engineering, Georgia Institute of Technology, 2006

Department of Chemical Engineering, University of Michigan, 2010

School of Chemical Engineering, Georgia Institute of Technology, 2010

NYU Polytechnic University, Chair of the Reaccreditation Committee for the Middle States Commission on Higher Education, 2013.

GRADUATE STUDENTS DIRECTED

Rosalie G. Jing, MS, 1979. Thesis: "The Thermodynamics of Aqueous Solutions."

Ruth A. Silverman, MS, 1979. Thesis: "Thermal Conductivity of Two-Phase Systems."

Julio G. Briano, PhD, 1983. Dissertation: "Classical and Statistical Thermodynamics of Continuous Mixtures."

William P. Thorpe, MS, 1983. Thesis: "The Thermodynamics of Mixtures Containing Perfluorocarbons."

Bradley C. Elkin, PhD, 1984. Dissertation: "Lattice Models of Hydrogen-Bonding Mixtures."

Yee C. Chiew, PhD, 1984. Dissertation: "Microstructure, Connectivity and Effective Properties of Dispersions and Heterogeneous Media."

Patrick D. Mc Mahon, PhD, September 1985. Dissertation: "Application of Renormalization Group Theory in Solution Thermodynamics."

Albert J. Post, PhD, November 1985. Dissertation: "Concentration Effects in Bulk Colloids and Interfacial Phases."

Nigel A. Seaton, PhD, August 1986. Dissertation: "The Structure, Percolation and Transport Properties of Particulate Dispersions."

Peter J. Johnson, MS, May 1987. Thesis: "Conduction in Assemblies of Anisotropic Particles."

David A. Kofke, PhD, December 1988. Dissertation: "Theoretical and Computer Simulation Studies of Mixtures of Very Many Components."

Stephen C. Netemeyer, PhD, September 1989. Dissertation: "Phase Equilibria and Computer Simulation of Polymer Gels and Related Systems."

Lisa A. Fanti, PhD, October 1989. Dissertation: "Partitioning and Transport in Random Media".

Annemarie Ott Wiest, PhD, 1992. Dissertation: "Molecular Theory for Gelation of Polymer and Colloidal Systems".

Kerri Gaumer, PhD, 1993. Dissertation: "Simulation Studies of Cell Shape and Adhesion" (joint with D.A. Lauffenburger).

Edgardo I. Segarra, PhD, 1993. Dissertation: "Model Microporous Carbons: Microstructure, Surface Polarity and Gas Adsorption."

Aidan P. Thompson, PhD, 1994. Dissertation: "Integral Equation Theory of Polymer Chains in Random Media."

David M. Ford, PhD, 1996. Dissertation: "Surface Barriers to Mass Transfer in Microporous Catalysts and Adsorbents."

Thomas L Bowman II, MS, 1996. Thesis: "Phase Transition of Silicalite upon Adsorption of Argon."

Peter A. Gordon, PhD, 1997. Dissertation: "Equilibrium Behavior of Fluids Confined in Amorphous Microporous Materials."

Amrish Dalal, M.S, 1997. Thesis: "Diffusion in Partially Quenched Mixtures."

D. Christopher Ward, PhD, 1999. Dissertation: "Random walk studies of equilibrium and transport properties of porous materials."

Panu Danwanichakul, PhD 2003. Dissertation: "Sequential Quenching: the Quasi-Thermodynamics of Slow Deposition."

PRESENTATIONS AT MEETINGS AND INVITED TALKS

Over 250 seminars and talks

REFEREED PUBLICATIONS

E.D. Glandt and A.L. Myers, Hydrogen Production from Water by Means of Chemical Cycles, *I&EC Process Design Devel*, 15, 100 (1976).

E.D. Glandt, A.L. Myers, D.D. Perlmutter and J.L. Soto, *ibid.* 15, 576 (1976).

E.D. Glandt and D.D. Fitts, Solutions to the PY and HNC Equations in Two Dimensions, *J. Chem. Phys.*, 64, 1241 (1976).

E.D. Glandt and D.D. Fitts, Percus-Yevick Equation of State for the Two-Dimensional Lennard-Jones Fluid, *J. Chem. Phys.*, 66, 4503 (1977).

E.D. Glandt and D.D. Fitts, Two-Dimensional Radial Distribution Functions via Integral-Equation Perturbation Theory, *Mol. Phys.*, 35, 205 (1978).

E.D. Glandt and D.D. Fitts, Hypernetted-Chain Equation of State for the Two-Dimensional Lennard-Jones Fluid, *J. Chem. Phys.*, 68, 4546 (1978).

E.D. Glandt, The Fourth Virial Coefficient for a Lennard-Jones Fluid in Two Dimensions, *J. Chem. Phys.*, 68, 2952 (1978).

E.D. Glandt, A.L. Myers and D.D. Fitts, Physical Adsorption of Gases on Graphitized Carbon Black, *Chem. Eng. Sci.*, 33, 1659 (1978).

E.D. Glandt, A.L. Myers and D.D. Fitts, Two-Dimensional Equations of State: A Comparison with Experiment, *J. Chem. Phys.*, 70, 4243 (1979).

J.G. Briano and E.D. Glandt, The Fifth Virial Coefficient for a Lennard-Jones Fluid in Two Dimensions: Integral-Equation Results, *J. Chem. Soc.*, Faraday Trans. II, 76, 812 (1980).

E.D. Glandt, Density Distribution of Hard-Spherical Particles inside Small Pores of Various Shapes, *J. Colloid Interface Sci.*, 77, 512 (1980).

E.D. Glandt, Partition Equilibrium between a Bulk Phase and Small Pores, *AIChE J.*, 27, 51 (1981).

J.G. Briano and E.D. Glandt, The Rate of Convergence of the Virial and Related Series, *Fluid Phase Equilibria*, 5, 207 (1980/81).

E.D. Glandt, Quantum Corrections to the Thermodynamic Properties of Adsorbed Fluid Phases, *J. Chem. Phys.*, 74, 1321 *(*1981).

J.G. Briano and E.D. Glandt, Virial Coefficients of Soft Disks, *Fluid Phase Equilibria*, 6, 275 *(*1981).

E.D. Glandt, Noncircular Pores in Model Membranes: A Calculation of the Effect of Pore Geometry, *J. Membrane Sci.*, 8, 331 (1981).

Y.C. Chiew and E.D. Glandt, Simultaneous Conduction and Radiation in Porous and Composite Materials: Effective Thermal Conductivity, *I&EC Fundamentals*, 22, 276 (1983).

Y.C. Chiew and E.D. Glandt, The Effect of Structure on the Conductivity of a Dispersion, *J. Colloid Interface Sci.*, 94, 90 (1983).

Y.C. Chiew and E.D. Glandt, Percolation Behavior of Adhesive and Penetrable Spheres, *J. Phys. A*, 16, 2599 (1984).

J.G. Briano and E.D. Glandt, Molecular Thermodynamics of Continuous Mixtures, *Fluid Phase Equilibria*, 14, 91 (1983).

J.G. Briano and E.D. Glandt, Statistical Thermodynamics of Polydisperse Fluids, *J. Chem. Phys.*, 80, 3336 (1984).

Y.C. Chiew and E.D. Glandt, Interfacial Surface Area in Dispersions, *J. Colloid Interface Sci.*, 99, 86 (1984).

A.L. Post and E.D. Glandt, Equilibrium Partitioning in Pores with Adsorbing Walls, *J. Colloid Interface Sci.*, 108, 31 (1985).

N.A. Seaton and E.D. Glandt, Coordination Number and Local Composition in Binary Mixtures of Spherical Adhesive Particles, *Fluid Phase Equilibria*, 23, 165 (1985).

Y.C. Chiew, G. Stell and E.D. Glandt, Clustering and Percolation in Multicomponent Systems of Randomly Centered and Permeable Spheres, *J. Chem. Phys.*, 83, 761 (1985).

A.L. Post and E.D. Glandt, Cluster Concentrations and Virial Coefficients for Adhesive Particles, *J. Chem. Phys.*, 84, 4585 (1986).

N.A. Seaton and E.D. Glandt, Monte Carlo Simulation of Adhesive Disks, *J. Chem. Phys.*, 84, 4595 (1986).

N.A. Seaton and E.D. Glandt, Spatial Correlation Functions from Computer Simulations, *J. Chem. Phys.*, 85, 5262 (1986).

D.A. Kofke and E.D. Glandt, Monte Carlo Simulations of Continuum Lennard-Jones Mixtures, *Fluid Phase Equilibria*, 29, 327 (1986).

S.C. Netemeyer and E.D. Glandt, Percolation Behavior of the Square-Well Fluid, *J. Chem. Phys.*, 85, 6054 (1986).

A.L. Post and E.D. Glandt, Statistical Thermodynamics of Particles Adsorbed onto a Spherical Surface. I. Canonical Ensemble, *J. Chem. Phys.*, 85, 7349 (1986).

L.A. Rosen, N.A. Seaton and E.D. Glandt, Random Sequential Adsorption onto the Surface of Small Spheres, *J. Chem. Phys.*, 85, 7359 (1986).

N.A. Seaton and E.D. Glandt, Monte Carlo Simulation of Adhesive Spheres, *J. Chem. Phys.*, 87, 1785 (1987).

N.A. Seaton and E.D. Glandt, Aggregation and Percolation in a System of Adhesive Spheres, *J. Chem. Phys.*, 86, 4668 (1987).

N.A. Seaton and E.D. Glandt, Conductivity in a Percolating System of Interacting Particles, *J. Phys. A*, 20, 3029 (1987).

N.A. Seaton and E.D. Glandt, Percolation and Conduction in Colloidal Dispersions, *Int. J. Physico-Chemical Hydrodynamics*, 9, 309 (1987).

Y.C. Chiew and E.D. Glandt, Effective Conductivity of Dispersions: The Effect of Resistance at the Particle Surfaces, *Chem. Eng. Sci.*, 42, 2677 (1987).

D.A. Kofke and E.D. Glandt, Nearly Monodisperse Fluids. I. Monte Carlo Simulation of Polydisperse Lennard-Jones Particles in a Semigrand Ensemble, *J. Chem. Phys.*, 87, 4881 (1987).

D.A. Kofke and E.D. Glandt, An Efficient Algorithm for the Computation of Pair Correlation Functions for Hard Spheres in the Percus-Yevick Approximation, *Mol. Phys.*, 64, 125 (1988).

W.G. Madden and E.D. Glandt, Distribution Functions for Fluids in Random Media, *J. Stat. Phys.*, 51, 537 (1988).

P.D. Mc Mahon, E.D. Glandt and J.S. Walker, Renormalization Group Theory in Solution Thermodynamics invited review, *Chem. Eng. Sci.*, 43, 2561 (1988).

A.L. Post and E.D. Glandt, Statistical Thermodynamics of Particles Adsorbed onto a Spherical Surface. II. Scaled Particle Theory, *J. Chem. Phys.*, 88, 5805 (1988).

S.C. Netemeyer and E.D. Glandt, A Systematic Evaluation of Local Composition-Based Excess Free Energy Theories Using a Model Binary Mixture, *I&EC Research*, 27, 1516 (1988).

D.A. Kofke and E.D. Glandt, Monte Carlo Simulation of Multicomponent Equilibria in a Semigrand Canonical Ensemble, *Mol. Phys.*, 64, 1105 (1988).

L.A. Fanti, E.D. Glandt, and Y.C. Chiew, Cluster Volume and Surface Area in Dispersions of Penetrable Particles or Pores, *J. Chem. Phys.*, 89, 1055 (1988).

D.A. Kofke and E.D. Glandt, Calculation of Phase Diagrams of Reactive Mixtures by Computer Simulation Proceedings of the International Symposium on Thermodynamics in Chemical Engineering and Industry, Beijing (1988).

L.A. Fanti and E.D. Glandt, Monte Carlo Simulation of Fluids in Curved Three-Dimensional Space, *Molecular Simulation*, 2, 163 (1989).

D.A. Kofke and E.D. Glandt, Infinitely Polydisperse Fluids, *J. Chem. Phys.*, 90, 439 (1989).

Y.C. Chiew and E.D. Glandt, Continuum Percolation and Pair-Connectedness Function in Binary Mixtures of Strongly Interacting Particles, *J. Phys. A*, 22, 3969 (1989).

L.A. Fanti and E.D. Glandt, Partitioning of Spherical Solutes into Sponge-Type Materials, *AIChE J.*, 35, 1883 (1989).

S.C. Netemeyer and E.D. Glandt, Volume Phase Transitions in Polymer Gels, *Fluid Phase Equilibria*, 53, 303 (1989).

D.A. Kofke and E.D. Glandt, A Composition Density Functional Theory for Mixtures Based upon an Infinitely Polydisperse Reference. I. Formalism and Theory, *J. Chem. Phys.*, 92, 658 (1990).

L.A. Fanti and E.D. Glandt, Thermodynamic Properties of Fluids Phases in Fibrous Matrices I: Density Functional Theory, *J. Colloid Interface Sci.*, 135, 385 (1990).

L.A. Fanti and E.D. Glandt, Thermodynamic Properties of Fluids Phases in Fibrous Matrices II: Monte Carlo Simulations, *J. Colloid Interface Sci.*, 135, 396 (1990).

D.A. Kofke and E.D. Glandt, A Composition Density Functional Theory for Mixtures Based upon an Infinitely Polydisperse Reference. II. Freezing of Hard Sphere Mixtures, *J. Chem. Phys.*, 92, 4417 (1990).

L.A. Fanti, E.D. Glandt, and W.D. Madden, Fluids in Equilibrium within Disordered Porous Materials. Integral Equation Theory, *J. Chem. Phys.*, 93, 5945 (1990).

A.P. Thompson and E.D. Glandt, Random Sequential Adsorption in Microporous Materials, *J. Colloid Interface Sci.*, 146, 63 (1991).

A. Ott and E.D. Glandt, Clustering and Percolation for Dimerizing Penetrable Spheres, *J. Chem. Phys.*, 95, 8365 (1991).

K.R. Matranga, A.L. Myers and E.D. Glandt, Storage of Natural Gas by Adsorption on Activated Carbon, *Chem. Eng. Sci.*, 47, 1569 *(*1992).

A.P. Thompson and E.D. Glandt, The Length of Intersection Lines and the Number of Cusps in Assemblies of Interpenetrating Spheres, *J. Chem. Phys.*, 97, 1932 (1992).

K.R. Matranga, A.L Myers and E.D. Glandt, Molecular Simulation of Adsorbed Natural Gas Separation, *Science and Technology*, 27, 1825 (1992).

A. Ott and E.D. Glandt, Clustering and Percolation for Dimerizing Adhesive Spheres, *J. Chem. Phys.*, 97, 4316 (1992).

A.P. Thompson and E.D. Glandt, Low Coverage Kinetics of Correlated Sequential Adsorption, *Phys. Rev. A*, 46, 4639 (1992).

A.P. Thompson and E.D. Glandt, Adsorption of Polymeric Fluids in Microporous Materials. I., Ideal Freely Jointed Chains, *J. Chem. Phys.*, 99, 8325 (1993).

A.O. Wiest and E.D. Glandt, Equilibrium Polymerization and Gelation. I. Integral-Equation Theory, *J. Chem. Phys.*, 101, 5167 (1994).

D.M. Ford and E.D. Glandt, Compressibility Equation for Fluids in Random Microporous Matrices, *J. Chem. Phys.*, 100, 2391 (1994).

E.A. Segarra and E.D. Glandt, Model Microporous Carbons: Microstructure, Surface Polarity and Gas Adsorption, *Chem. Eng. Sci.*, 49, 2953 (1994).

D.M. Ford and E.D. Glandt, Vapor-Liquid Equilibrium in Random Microporous Matrices, *Phys. Rev. A*, 50, 1280 (1994).

D.M. Ford and E.D. Glandt, Steric Hindrance at the Entrances to Small Pores, *J. Membrane Sci.*, 107, 47 (1995).

D.M. Ford, A.P. Thompson and E.D. Glandt, Thermodynamics of Fluids in Random Microporous, Materials from Scaled Particle Theory, *J. Chem. Phys.*, 103, 1099 (1995).

D.M. Ford and E.D. Glandt, Molecular Simulation Study of the Surface Barrier Effect. Dilute Gas Limit, *J. Phys. Chem.*, 99, 11543 (1995).

D.M. Ford and E.D. Glandt, A Molecular Simulation Approach to Studying Mass Transfer Across Surface Barriers in "Access in Nanoporous Materials," T.J. Pinnavaia and M. Thorpe (eds.), *Plenum*, (1995).

A.P. Thompson and E.D. Glandt, Partition Coefficients for Chains Confined in Microporous Media, *Macromolecules*, 29, 4314 (1996).

P.A. Gordon and E.D. Glandt, Liquid-Liquid Equilibrium for Fluids Confined within Random Porous Materials, *J. Chem. Phys.*, 105, 4257 (1996).

P.A. Gordon and E.D. Glandt, Adsorption of Polar Gases on Model Silica Gel, *Langmuir*, 13 (17), 4659 (1997).

P.A. Gordon and E.D Glandt, Adsorption and heats of immersion of n-alkanes on model silica gel, *I&EC Research*, 37, 3221 *(*1998).

Q Wang, P. Danwanichakul and E.D. Glandt, Sequential addition of particles: Integral equations, *J Chem. Phys.*, 112 (15): 6733 (2000).

P. Danwanichakul P and E.D Glandt, Sequential quenching of square-well particles, *J Chem. Phys.*, 114 (4): 1785-1790 (2001).

F.P. Schmidt, J. Luther and E.D. Glandt, Influence of Adsorbent Characteristics on the Performance of an Adsorption Heat Storage Cycle, *I&EC Research.*, 42, 4910 (2003).

P. Danwanichakul and E.D. Glandt, Particle connectedness and cluster formation in sequential depositions of particles: Integral-equation theory, *J. Chem. Phys.* 121, 9684 (2004).

P. Danwanichakul and E.D. Glandt, Percolation and jamming in structures built through sequential deposition of particles, *J. Colloid Int. Sci.* 283, 41 (2005).

P. Danwanichakul and E.D. Glandt, Continuity between disorder and order in the sequential deposition of particles, *Chem. Eng. Comm.* 192, 1405 (2005).

P. Danwanichakul and E.D Glandt, Sub-monolayer growth by sequential deposition of particles, *J. Colloid Int. Sci.* 294, 38 (2006).

P. Danwanichakul and E.D Glandt, Sequential quenching of randomly deposited ellipsoids: Anisotropy and spatial patterns, *J. Colloid Int. Sci.* 309, 384 (2007).