

CURRICULUM VITA

JAMES R. HUNT

Lawrence E. Peirano Professor of Environmental Engineering
 779 Davis Hall, Department of Civil and Environmental Engineering
 University of California at Berkeley
 Berkeley, CA 94720-1710
 Phone: 510 642 0948 Email: hunt@ce.berkeley.edu

RECEIVED

AUG 23 2010

REGION 7

Education:

B.S. in Civil and Environmental Engineering, University of California, Irvine, 1972
 M.S. in Environmental Engineering, Stanford University, 1973
 Ph.D. in Environmental Engineering Science, California Institute of Technology, 1980

Employment:

6/73-9/75 Environmental Engineer, Hydrocomp Inc., Palo Alto, California.
 7/80-6/87 Assistant Professor, Department of Civil Engineering, UC Berkeley
 7/87-6/94 Associate Professor, Department of Civil Engineering, UC Berkeley
 7/94-present Professor, Department of Civil and Environmental Engineering, UC Berkeley
 7/89-6/92 Vice Chair, Academic Affairs, Department of Civil Engineering, UC Berkeley
 7/96-6/01 Acting Director and Director, Institute for Environmental Science & Engineering,
 formerly Environmental Engineering and Health Sciences Laboratory, UC
 Berkeley
 10/96-6/01 Associate Director, University of California Toxic Substances Research and
 Teaching Program
 7/99-6/01 Vice Chair for Undergraduate Affairs, Department of Civil and Environmental
 Engineering, UC Berkeley
 7/02-6/04 Associate Vice Provost for Academic Planning and Facilities, UC Berkeley
 7/07-present Co-Director, Berkeley Water Center, UC Berkeley

Recent Professional Activities:

Registered Civil Engineer in California
 Participating Guest at Lawrence Livermore National Laboratory
 Participating Guest at Lawrence Berkeley National Laboratory
 Diplomat of the American Academy of Environmental Engineering
 Science Advisory Committee, Environmental Protection Agency Great Lakes - Mid-
 Atlantic Hazardous Substance Research Center, 1991-1995
 National Water Research Institute, Research Advisory Board, 1993-2001
 National Research Council, Marine Board Committee on Contaminated Marine
 Sediments, 1993-1997
 University of California Water Resources Center, Coordinating Board, 1994-2000
 Contaminant Fate Workgroup, San Francisco Estuary Institute, 2001-present
 American Academy of Environmental Engineers, ABET program evaluator, 2005-present
 Associate Editor, Water Resources Research, 2002-2009

Recent University Activities:

- Elected member of the Berkeley Divisional Council, University of California Academic Senate, 1995-1997.
- Committee on Education Policy of the Berkeley Divisional Council, 1997-1999.
- Space Allocation and Capital Improvements Committee of the Berkeley Divisional Council, 1998-1999.
- Member of the Scientific Panel on Low-Level Radioactive Waste Disposal, University of California Office of the President, 1999-2000.
- Member, Budget and Interdepartmental Relations Committee, Berkeley Division of the Academic Senate, University of California, 2004-2007.
- Member, Committee on Academic Personnel, Merced Division of the Academic Senate, University of California, 2006-2007.
- Member (2005-2006), Vice Chair (2006-2007), and Chair (2007-2008) University of California Committee on Academic Personnel.
- Elected Member of the Berkeley Divisional Council, 2008-2010.

Honors:

- 1991 Editors' Citation for Excellence in Refereeing - Water Resources Research, American Geophysical Union.
- 1991 Outstanding Doctoral Thesis Award to advisee Jil T. Geller, Association of Environmental Engineering Professors.
- 1999-present Lawrence E. Peirano Professor of Environmental Engineering

Recent Research Projects:

- Horizontal shear flows and lateral mixing in estuaries and the coastal ocean: Sediment transport in the shoal-channel estuary, National Science Foundation (M. Stacey, PI).
- Synthesis of hydrologic and water quality data for supporting steelhead habitat restoration in the Pajaro River watershed, US Bureau of Reclamation, 2007 – 2009.
- Coupled Modeling of Hydrology, Nutrient Cycling and Vegetation, Lawrence Berkeley National Laboratory, 2007-2008.
- Research Translation and Scaling of Results between Laboratory and Field, Superfund Basic Research Program, National Institute of Environmental Health Sciences, 2006-2011.
- Environmental Data Analysis, Microsoft, 2006-2008.
- Historical Exposure Assessment, National Institutes of Environmental Health Sciences, 2000-2004 (with M. Stacey).
- Use of Tritium Atomic Mass Spectrometry for Tree Ring Analysis, Lawrence Livermore National Laboratory (1999-2002)
- Emplacement and Release of Brines from the Subsurface, UC Water Resources Center (2001-2003)
- Watershed Model Development to Support TMDL (Total Maximum Daily Load) Projects in Tomales Bay, California, State Water Resources Control Board 2001-2004 (with M. Stacey).
- University Relations Sabbatical Leave Program at Lawrence Livermore National Laboratory, 2001-2002.

Patent:

K. S. Udell, N. Sitar, J. R. Hunt, and L. D. Stewart (1991) Process for in situ decontamination of subsurface soil and groundwater, U. S. Patent No. 5,018,576.

Refereed Publications:

- J. R. Hunt (1980) Prediction of oceanic particle size distributions from coagulation and sedimentation mechanisms. In: *Particulates in Water: Characterization, Fate, Effects and Removal*, M. C. Kavanaugh and J. O. Leckie, editors, *Advances in Chemistry* 189, 243-257.
- J. R. Hunt (1982) Self-similar particle size distributions during coagulation; theory and experimental verification, *Journal of Fluid Mechanics*, 122, 169-185.
- J. R. Hunt (1982) Particle dynamics in seawater; implications for predicting the fate of discharged particles, *Environmental Science and Technology*, 16, 303-309.
- J. R. Hunt and J. D. Pandya (1984) Sewage sludge coagulation and settling in seawater, *Environmental Science and Technology* 18, 119-121.
- J. R. Hunt (1986) Particle aggregate breakup by fluid shear. In: *Estuarine Cohesive Sediment Dynamics*, A. Mehta, Editor, Springer-Verlag, pp 85-109.
- L. M. McDowell-Boyer, J. R. Hunt, and N. Sitar (1986) Particle transport through porous media, *Water Resources Research*, 22(13), 1901-1921.
- B. E. Logan and J. R. Hunt (1987) Advantages to microbes of growth in permeable aggregates in marine systems, *Limnology and Oceanography*, 32, 1036-1050.
- A. C. Molseed, J. R. Hunt, and M. W. Cowin (1987) Desalination of agricultural drainage return water I. Operational experiences with conventional and non-conventional pretreatment methods, *Desalination* 67, 249-262.
- B. E. Logan and J. R. Hunt (1988) Bioflocculation as a microbial response to substrate limitations, *Biotechnology and Bioengineering*, 31, 91-101.
- J. R. Hunt, N. Sitar, and K. S. Udell (1988) Nonaqueous phase liquid transport and cleanup I. Analysis of mechanisms, *Water Resources Research*, 24, 1247-1258.
- J. R. Hunt, N. Sitar, and K. S. Udell (1988) Nonaqueous phase liquid transport and cleanup II. Experimental studies, *Water Resources Research*, 24, 1259-1269.
- R. W. Buddemeier and J. R. Hunt (1988) Transport of colloidal contaminants in groundwater: radionuclide migration at the Nevada Test Site, *Applied Geochemistry*, 3, 535-548.
- J. R. Hunt (1990) Particle removal by coagulation and settling from a waste plume, In: *Oceanic Processes in Marine Pollution, Volume 6, Physical and Chemical Processes: Transport and Transformation*, D. Baumgartner and I. W. Duedall, editors, R. E. Krieger Publ. Co., Malabar, FL, pp. 109-119.
- R. G. Luthy, D. A. Bella, J. R. Hunt, J. H. Johnson, D. F. Lawler, C. R. O'Melia, and F. G. Pohland (1992) Future concerns in environmental engineering education, *J. Professional Issues in Engineering Education and Practice (ASCE)* 118(4), 361-380.
- J. T. Geller and J. R. Hunt (1993), Mass transfer from nonaqueous phase organic liquids in water-saturated porous media, *Water Resources Research* 29(4), 833-845.
- M. A. Foda, J. R. Hunt, and H.-T. Chou (1993) A non-linear model for the fluidization of marine mud by waves, *Journal of Geophysical Research* 98(C4), 7039-7047.
- H.-T. Chou, M. A. Foda, and J. R. Hunt (1993) Rheological response of cohesive sediments to oscillatory forcing, In: *Nearshore and Estuarine Cohesive Sediment Transport, Coastal Estuarine Ser. vol. 42*, A. J. Mehta, ed., Chpt 8, pp 126-148, American Geophysical Union.
- J. R. Hunt, B.-C. Hwang, and L. M. McDowell-Boyer (1993), Solids accumulation during deep bed filtration, *Environmental Science and Technology* 27(6), 1099-1107.

- J. H. Kessler and J. R. Hunt (1994) Dissolved and colloidal contaminant transport in a partially clogged fracture, *Water Resources Research* 30(4), 1195-1206.
- G. E. Seely, R. W. Falta, and J. R. Hunt (1994) Buoyant advection of gases in unsaturated soil, *Journal of Environmental Engineering* 120(5) 1230-1247.
- J. R. Hunt, P. A. Holden, and M. K. Firestone (1995) Coupling transport and biodegradation of VOCs in surface and subsurface soils, *Environmental Health Perspectives* 103 (Supplement 5), 75-78.
- C. S. Kao, and J. R. Hunt (1996) Prediction of wetting front movement during one-dimensional infiltration into soils, *Water Resources Research* 32(1), 55-64.
- Committee on Contaminated Marine Sediments (1997) *Contaminated Sediments in Ports and Waterways, Cleanup Strategies and Technologies*, Marine Board, National Research Council, National Academy Press, Washington, DC.
- P. A. Holden, J. R. Hunt, and M. K. Firestone (1997) Toluene diffusion and reaction in unsaturated *Pseudomonas putida* biofilms, *Biotechnology and Bioengineering* 56 (6), 656-670.
- G. A. Loosmore and J. R. Hunt (2000) Dust resuspension without saltation, *Journal of Geophysical Research* 105(D16), 20,663-20,671.
- G. W. Su, J. T. Geller, K. Pruess, and J. Hunt (2000), Overview of preferential flow in unsaturated fractures, *Dynamics of Fluids in Fractured*, B. Faybishenko, P. A. Witherspoon, and S. M. Benson, eds, *Geophysical Monograph Series 122*, American Geophysical Union, Wash. DC, pp. 147-155.
- C. S. Kao and J. R. Hunt (2001) Experimental validation and applications of a fluid infiltration model, *Journal of Environmental Engineering*, 127(2), 162-169.
- G. W. Su, J. T. Geller, K. Pruess, and J. R. Hunt (2001) Solute transport along preferential flow paths in unsaturated fractures, *Water Resources Research* 37(10), 2481-2491.
- W. Chu, J. R. Hunt, and C. T. Jafvert (2002) Modeling the sequential photodechlorination of hexachlorobenzene in surfactant micelles, *Water Research* 36, 843-850.
- J. Yow and J. R. Hunt (2002) Coupled processes in rock mass performance with emphasis on nuclear waste isolation, *International Journal of Rock Mechanics and Mining Sciences* 39, 143-150.
- A. H. Love, J. R. Hunt, M. L. Roberts, J. R. Southon, M. L. Chiarappa-Zucca, and K. H. Dingley (2002) Use of tritium accelerator mass spectrometry for tree ring analysis, *Environmental Science and Technology* 36(13), 2848-2852.
- V. K. Bhupathiraju, P. Krauter, H-Y. N. Holman, M. E. Conrad, P. F. Daley, A. S. Templeton, J. R. Hunt, M. Hernandez, and L. Alvarez-Cohen. (2002) Assessment of in-situ bioremediation at a refinery waste-contaminated site and an aviation gasoline contaminated site. *Biodegradation* 13, 79-90.
- A. H. Love, B. K. Esser, and J. R. Hunt (2003) Reconstructing contaminant deposition in a San Francisco Bay Marina, California, *Journal of Environmental Engineering*, 129(7), 659-666.
- M. A. Gueil, and J. R. Hunt (2003) Groundwater transport of tritium and krypton 85 from a nuclear detonation cavity, *Water Resources Research* 39(7), 1175
doi:10.1029/2001WR001249, pages 1-1 to 1-10.
- A. H. Love, J. R. Hunt, and J. P. Knezovich (2003) Reconstructing tritium exposure using tree rings at Lawrence Berkeley National Laboratory, California, *Environmental Science and Technology* 37(19), 4330-4335.
- T. J. Kneafsey and J. R. Hunt (2004) Non-aqueous phase liquid spreading during soil vapor extraction, *Journal of Contaminant Hydrology* 68, 143-164, doi:10.1016/S0169-7722(03)00147-5.
- A. H. Love, J.R. Hunt, J.S. Vogel, J.P. Knezovich (2004) Improving tritium exposure reconstructions using accelerator mass spectrometry, *Analytical and Bioanalytical*

- Chemistry 379, 198-203; DOI 10.1007/s00216-003-2425-9.
- G. W. Su, J. T. Geller, J. R. Hunt, and K. Pruess (2004) Small-scale features of gravity-driven flow in unsaturated fractures, *Vadose Zone Journal* 3, 592-601.
- D. C. Mays and J. R. Hunt (2005) Hydrodynamic aspects of particle clogging in porous media, *Environmental Science and Technology* 39(2), 577-584.
<http://dx.doi.org/10.1021/es049367k>
- W. Chu, W. K. Choy, and J. R. Hunt (2005) Effects of nonaqueous phase liquids on the washing of soil in the presence of non-ionic surfactant. *Water Research* 39, 340-348.
- J. R. Hunt and A. F. B. Tompson (2005) Tracing long-term vadose zone processes at the Nevada Test Site, U.S.A., *Hydrological Processes* 19 (17), 3383-3394, 10.1002/hyp.5976.
- A. F. B. Tompson, G. B. Hudson, D. K. Smith, and J. R. Hunt (2006) Analysis of radionuclide migration through a 200-m vadose zone following a 16-year infiltration event, *Advances in Water Resources* 29, 281-292, doi:10.1016/j.advwatres.2005.02.015.
- T. C. Flowers and J. R. Hunt (2007) Viscous and gravitational contributions to mixing during vertical brine transport in water-saturated porous media, *Water Resources Research*, 43, W01407, doi:10.1029/2005WR004773, 18 pages.
- D. C. Mays and J. R. Hunt (2007) Hydrodynamic and chemical factors in clogging by montmorillonite in porous media, *Environmental Science and Technology* 41(16), 5666-5671.
- J. A. García-Aragón, E. Quentin, C. Díaz-Delgado, and J. R. Hunt (2007) Watershed level analysis of sediment filling in a Mexican highland reservoir, *Limnetica (Spain)*, 26(2), 209-218.
- B. E. Johnson, B. K. Esser, Dyan C. Whyte, P. M. Ganguli, C. M. Austin, and J. R. Hunt (2009) Mercury accumulation and attenuation at a rapidly forming delta with a point source of mining waste, *Science of the Total Environment* 407, 5056-5070.

Published Conference Papers

- N. Sitar, J. R. Hunt, and K. S. Udell (1987) Movement of nonaqueous liquids in groundwater, *Proc. Geotechnical Practice for Waste Disposal '87*, Geotechnical Division, ASCE, Ann Arbor, MI, pp. 205-223.
- J. R. Hunt, L. M. McDowell-Boyer, and N. Sitar (1987) Colloid migration in porous media -- an analysis of mechanisms. In: *Coupled Processes Associated with Nuclear Repositories*, C.-F. Tsang, editor, Academic Press, pp. 453-472.
- J. R. Hunt, J. T. Geller, N. Sitar, and K. S. Udell (1988) Subsurface transport processes for gasoline components. 1988 Joint CSCE-ASCE National conference on environmental Engineering, July 13-15, Vancouver, B.C., pp 536-543.
- H. T. Chou, J. R. Hunt, and M. A. Foda (1991) Fluidization of marine mud by waves, *Marine Poll. Bull.* 23, 75-81 (International Conference on Environmental Management of Enclosed Coastal Seas '90, Kobe, Japan, Aug 3-6, 1990).
- N. Sitar, J. R. Hunt, and J. T. Geller (1992) Practical aspects of multiphase equilibria in evaluating the degree of contamination, *Subsurface Contamination by Immiscible Fluids*, K. U. Weyer, ed., Proceedings of International Conference on Subsurface Contamination by Immiscible Fluids, April 18-20, 1990, Calgary, Alberta, A. A. Balkema, Rotterdam, pp 265-270.
- J. R. Hunt (1993) Manipulating colloids to change aquifer permeability, moderator's overview. In: *Manipulating Groundwater Colloids for Environmental Restoration*, J. F. McCarthy and F. J. Wobber, eds., Lewis Publ., Boca Raton, Florida, pp 97-102.
- H. S. Fogler and J. R. Hunt (1993) Summary and results of group discussion for session III.

- Manipulating Colloids to change aquifer permeability. In: Manipulating Groundwater Colloids for Environmental Restoration, J. F. McCarthy and F. J. Wobber, eds., Lewis Publ., Boca Raton, Florida, pp 139-150.
- J. R. Hunt, and B.-C. Hwang (1993) The accumulation of solids within deep-bed filters, Proc. 6th World Filtration Conference, Nagoya, Japan, May, 1993, pp. 236-239.
- J. H. Kessler and J. R. Hunt (1993) Open channels in fractures maintained by deposition and erosion of colloids, High Level Radioactive Waste Management Proceedings of the Fourth International Conference, Las Vegas, Nevada, April, 1993, vol. 2, pp 1547-1553.
- J. R. Hunt (1993) Tritiated water as a tracer for water movement through near-surface desert soils, In: Tracers in Hydrology, N. E. Peters, E. Hoehn, Ch. Leibundgut, N. Tase, and D. E. Walling, eds., Proceedings of the Yokohama symposium, July 11-23, 1993, IAHS Publ. No. 215, pp 135-142.
- J. R. Hunt (1993) Innovative programs in traditional departments: Groundwater remediation, US and International Water Resources Education, UCOWR 1993 Annual Meeting, August 3-6, 1993, San Francisco, The Universities Council on Water Resources, pp 24-26.
- J. R. Hunt (1994) Physical aspects of remediation, Proceedings of the 19th Biennial Conference on Ground Water, September 13-14, 1993, Sacramento, CA, J. J. DeVries and J. Woled, eds., Water Resources Center Report 84, University of California, Davis, pp 81-86.
- C. S. Kao and J. R. Hunt (1994) A plug flow model of liquid infiltration into dry soils, In Proceedings of Fourteenth Annual American Geophysical Union Hydrology Days, H. J. Morel-Seytoux, ed., April 5-8, Fort Collins, CO, pp 183-193.
- P. A. Holden, J. R. Hunt, and M. K. Firestone (1995) Unsaturated zone gas-phase VOC biodegradation: The importance of water potential, 50th Purdue Industrial Waste Conference Proceedings, Ann Arbor Press, Inc., Chelsea, Michigan, pp 113-127.
- J. R. Hunt (1996) Synthesis and wrap-up, Proceedings of the 20th Biennial Ground Water Conference, J. J. DeVries and J. Woled, eds., Water Resources Center Report No. 88, University of California, Davis, pp 171-174.
- J. H. Kessler and J. R. Hunt (1999) Fracture clogging by the deposition of colloidal particles, Proceedings of the International Symposium on Dynamics of Fluids in Fractured Rocks, Concepts and Advances, B. Faybishenko, ed., Lawrence Berkeley National Laboratory, LBNL-42718, pp 172-174.
- G. Su, J. Geller, K. Pruess, and J. R. Hunt (1999) Laboratory experiments on solute transport in unsaturated fractures, Proceedings of the International Symposium on Dynamics of Fluids in Fractured Rocks, Concepts and Advances, B. Faybishenko, ed., Lawrence Berkeley National Laboratory, LBNL-42718, pp 308-310.
- T. C. Flowers and J. R. Hunt (2000) Long-term release of perchlorate as a potential source of groundwater contamination, Perchlorate in the Environment, E. T. Urbansky, ed., Kluwer Academic / Plenum Publishers, New York, pp 177-188.
- J. R. Hunt and A. H. Love (2000) Monitoring and modeling for historical dose reconstruction, invited presentation, Proceedings of the Third International Symposium on Advanced Environmental Monitoring, Advanced Environmental Monitoring Center, Cheju Island, S. Korea, Oct. 31 to Nov. 2, 2000, pp 152-156.
- J. H. Kessler and J. R. Hunt (2001) Fracture clogging by the deposition of colloidal particles, Fractured Rock 2001, An International Conference Addressing Groundwater Flow, Solute Transport, Multiphase Flow, and remediation in Fractured Rock, Conference Proceedings, B. H. Kueper, K. S. Novakowski and D. A. Reynolds, eds., March 26-28, 2001, Toronto, Canada, 5 pp.