

Thomas C. Harmon, Professor and Associate Dean School of Engineering, University of California Merced

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Education:

B.S. Civil Engineering	The Johns Hopkins University	1985
M.S. Environmental Engineering	Stanford University	1986
Ph.D. Environmental Engineering	Stanford University	1993

Positions:

Associate Dean, School of Engineering, 2011-present
Chair, School of Engineering, 2008-2011
Acting Dean School of Engineering, Jan 2010-April 2010
Professor and Founding Faculty, 2005-present
Adjunct Professor, Department of Civil & Environmental Engineering, UCLA, 2003-present
Associate Professor and Founding Faculty
Associate Professor, Department of Civil & Environmental Engineering, UCLA, 1999-2003
Assistant Professor, Department of Civil & Environmental Engineering, UCLA, 1992-1999
Graduate Research Assistant, Department of Civil Engineering, Stanford University, 1985-1992
Environmental Engineer, Aqua-Terra Consultants, Inc., Mountain View, CA, 1986
Undergraduate Research Assistant, Department of Geography and Environmental Engineering, Johns Hopkins University, 1983-1985
Civil Engineering Asst., Buchart-Horn Consultants, Baltimore, MD, 1984

Awards:

University Fellowship, Stanford University, 1985-86
American Geophysical Union Horton Research Grant, 1988
California Council of Civil Engineers and Land Surveyors Scholarship, 1990, 1991
National Science Foundation Career Award, 1995-1999

Professional Societies:

American Society of Civil Engineers, Associate Member
American Chemical Society
American Geophysical Union
Association of Environmental Engineering & Science Professors

Journal articles published/in press/accepted:

J41 Rahilly, P, D Li, Q Guo, J Zhu, R Ortega, NWT Quinn, TC Harmon. (2012) Mapping swamp timothy (*Criopsis*

schenoides) seed productivity using spectral values and vegetation indices in managed wetlands. *International Journal of Remote Sensing* 33(16), 4902-4918.

- J40 Saez, JA, TC Harmon, S Doshi, F Guerrero (2012). Seasonal ammonia losses from spray-irrigation with secondary-treated recycled water, *Water Science & Technology*, 65(4), 676-682.
- J39 Park, Y and TC Harmon. (2011) Autonomous Real-Time Adaptive Management of Soil Salinity Using a Receding Horizon Control Algorithm: A Pilot-Scale Demonstration, *Journal of Environmental Management* 92(10), 2619-2627.
- J38 Zhu, J, Q Guo, TC Harmon. (2011) Reducing mis-registration and shadow effects on change detection in wetlands. *Photogrammetric Engineering and Remote Sensing* 77(4), 325-334.
- J37 Li, D, Q Guo, P Rahilly, P, G Phelps, TC Harmon. (2011) Correlation between soil apparent electroconductivity and plant hyperspectral reflectance in a managed wetland, *International Journal of Remote Sensing* 32(9), 2563-2579.
- J36 Park, Y, JS Shamma, and TC Harmon (2009). A Receding Horizon Control algorithm for adaptive management of soil moisture and chemical levels during irrigation, *Environmental Modelling & Software*, 24(9), 1112-1121.
- J35 Rundel, PW, EA Graham, MF Allen, JC Fisher and TC Harmon. (2009). Tansley Review: Environmental sensor networks in ecological research, *New Phytologist*, 182(3), 589-607.
- J34 Allen, MF, R Vargas, EA Graham, W Swenson, M Hamilton, M Taggart, TC Harmon, A Rat'ko, P Rundel, B Fulkerson, and D Estrin (2007). Soil Sensor Technology: Life with a Pixel, *BioScience* 57(10):859-867.
- J33 Montgomery, JL, T Harmon, W Kaiser, A Sanderson, CN Haas, R Hooper, B Minsker, J Schnoor, NL Clesceri, W Graham, and P Brezonik, (2007) The WATERS Network: An Integrated Environmental Observatory Network for Water Research, *Environmental Science and Technology*, 42(19), 6642-6647.
- J32 Harmon, TC, RF Ambrose, RM Gilbert, JC Fisher, M Stealey, and WJ Kaiser. (2007). High Resolution River Hydraulic and Water Quality Characterization Using Rapidly Deployable Networked Infomechanical Systems (NIMS RD), *Environmental Engineering Science*, 24(2), 151-159.
- J31 Jensen, PE, LM Ottosen, TC Harmon. (2007) The effect of soil type on the electrochemical remediation of lead-contaminated soil, *Environmental Engineering Science*, 24(2), 234-244.
- J30 Bendikov, TA, S Miserendino, Y-C Tai and T.C. Harmon (2007). A Parylene-Protected Nitrate Selective Microsensor on a Carbon Fiber Cross Section, *Sensors and Actuators B: Chemical*, 123(1),127-134.

- J29 Saez, JA and TC Harmon, (2006). Two-Stage Aquifer Pumping Subject to Slow Desorption and Persistent Sources, *Ground Water*, 44(2), 244-255.
- J28 Bendikov, TA and Harmon, TC (2005). Long-lived solid state perchlorate ion selective sensor based on doped poly(3,4-ethylenedioxythiophene) (PEDOT) films, *Analytica Chimica Acta*, 551, 30-36.
- J27 Bendikov, TA, J Kim, TC Harmon. (2005). Development and environmental application of a nitrate selective microsensor based on doped polypyrrole films, *Sensors and Actuators B: Chemical*, 106(2), 512-517.
- J26 Kim, J, Y Park and TC Harmon, (2005). Real-Time Model Parameter Estimation in Support of Analyzing Transport in Porous Media, *Groundwater Monitoring and Remediation*, 25(2), 1-9.
- J25 Bendikov, TA and TC Harmon. (2005) A Sensitive and Highly Selective Nitrate Ion Selective Electrode from a Pencil Lead: An Analytical Laboratory Experiment, *Journal of Chemical Education*, 82(3), 439-442.
- J24 Shih, T, Y Rong, T Harmon and M Suffet. (2004). Evaluation of the Impact of Fuel Hydrocarbons and Oxygenates on Groundwater Resources, *Environmental Science and Technology*, 38(1), 42-48.
- J23 Brahma, PP and TC Harmon, (2003) The Effect of Multicomponent Diffusion on NAPL Dissolution from Spherical Ternary Mixtures, *Journal of Contaminant Hydrology*, 67, 43-60.
- J22 Khachikian, CS and TC Harmon, (2002). Long-Term Studies of the Effects of NVOCs on the Surface Areas of Porous Media, *Journal of Environmental Quality*, 31(4), 1309-1315
- J21 Dela Barre, BK, TC Harmon and CV Chrysikopoulos, (2002). Measuring and Modeling the Dissolution of a Nonideally Shaped Dense Nonaqueous Phase Liquid (DNAPL) Pool in a Saturated Porous Medium, *Water Resources Research*, 38(8), U143-U156.
- J20 Sciortino, A, TC Harmon and WW-G Yeh, (2002). Experimental Design and Model Parameter Estimation for Locating a Dissolving DNAPL Pool in Groundwater, *Water Resources Research*, 38(5), U290-U298.
- J19 Harmon, TC, Burks, GA, Giron, JJ, Wong, W, Chung, GKWK. and EL Baker, (2002). An Interactive Database Supporting Virtual Fieldwork in an Environmental Engineering Design Project, *Journal of Engineering Education (ASEE)*, 91(2), 167-176.
- J18 Chung, GKWK., Harmon, TC and EL Baker, (2001). The Impact of a Simulation-Based Learning Design Project on Student Learning Processes, *IEEE Transactions on Education*, 44(4), 390-398.
- J17 Harmon, TC, Burks, GA, Aycaguer, A-C and K Jackson, (2001). Thermally Enhanced Vapor Extraction for Removing PAHs from Lampblack-Contaminated Soil, *Journal of Environmental Engineering (ASCE)*, 127(11), 986-993.
- J16 Burks, GA and TC Harmon, (2001). Volatilization of Solid Phase Polycyclic Aromatic Hydrocarbons from Model Mixtures and Lampblack-Contaminated Soils, *Journal of Chemical & Engineering Data*, 46, 944-949.
- J15 Khachikian, CS and TC Harmon, (2000). Effects of Non-Volatile Organic Contamination on the Surface Areas and Adsorption Energetics of Porous Media, *Langmuir*, 16(25), 9819-9824.
- J14 Chrysikopoulos, CV, KY Lee and TC Harmon, (2000). Dissolution of a Well-Defined Trichloroethylene Pool in Saturated Porous Media: Experimental Design and Aquifer Characterization, *Water Resources Research*, 36(7), 1687-1696.
- J13 Sciortino, A, TC Harmon and WW-G Yeh, (2000). Inverse Modeling for Locating Dense Nonaqueous Pools in Groundwater Under Steady Flow Conditions, *Water Resources Research*, 36(7), 1723-1736.
- J12 Khachikian, CS and Harmon, TC, (2000). Nonaqueous Phase Liquid Dissolution in Porous Media: Current State of Knowledge and Research Needs, *Transport in Porous Media*, 38(1/2), 3-28.
- J11 Yu, D, K Jackson and TC Harmon, (1999). Dispersion and Diffusion in Porous Media under Supercritical Conditions, *Chemical Engineering Science*, 54(3), 357-367.
- J10 Harmon, TC, T-J Kim, BK Dela Barre and CV Chrysikopoulos. (1999). Cosolvent-Water Displacement in One-Dimensional Soil Column, *Journal of Environmental Engineering (ASCE)*, 125(1), 87-91.
- J9 Duke, LD, Y Rong and TC Harmon, (1998). Uncertainty in Vadose Zone Transport of VOCs: Sensitivity Analysis and Monte Carlo Simulation with a 1-D Transport Model, *Journal of Environmental Engineering (ASCE)*, 124(5), 441-448.
- J8 Coyle, GT, Harmon, TC and Suffet, IH. (1997). Aqueous Solubility Depression for Nonvolatile Organic Chemicals in the Presence of Volatile Organic Solutes, *Environmental Science & Technology*, 31(2), 384-489.
- J7 Kong, D and TC Harmon. (1996). Using the Multiple Cell Balance Method to Solve the Problem of Two-Dimensional Groundwater Flow and Contaminant Transport with Nonequilibrium Sorption, *Journal of Contaminant Hydrology*, 23, 285-301.
- J6 Harmon, TC, BK Dela Barre and PV Roberts, (1996). Estimating Internal Mass Transfer Rates in Soils Using Scintillation Fluid Extraction, *Separations Technology*, 6, 155-164.
- J5 Harmon, TC and PV Roberts, (1994). A Comparison of Intraparticle Sorption and Desorption Rates for a Halogenated Alkene in a Sandy Aquifer Material, *Environmental Science & Technology*, 28(9), 1650-1660.
- J4 Harmon, TC and PV Roberts, (1994). The Effect of Equilibration Time on Batch Desorption Rate Measurements with Chlorinated Alkenes and Aquifer Particles, *Environmental Progress*, 13(1), 1-7.
- J3 Harmon, TC, L Semprini, and PV Roberts, (1992). Simulating Groundwater Solute Transport Using Laboratory-Based Sorption Parameters, *Journal of Environmental Engineering (ASCE)*, 118(5), 666-689.

- J2 Harmon, TC and PV Roberts, (1992). Determining and Modeling Mass-Transfer Rate Limitations in Heterogeneous Aquifers. *Water Science Technology*, 26(1-2), 71-77.
- J1 Ball, WP, Ch Buehler, TC Harmon, DM Mackay, and PV Roberts, (1990). Characterization of a Sandy Aquifer Material at the Grain Scale, *Journal of Contaminant Hydrology*, 5(3), 253-295, 1990.

Refereed Conference Proceedings Papers

- P6 Gil, Y, P Szekely, S Villamizar, T Harmon, V Ratnakar, S Gupta, M Muslea, F Silva, C Knoblock. (2011). Mind Your Metadata: Exploiting Semantics for Configuration, Adaptation, and Provenance in Scientific Workflows, Tenth International Semantic Web Conference (ISWC 2011). [Nominated for Best In-Use Paper]
- P5 Ramanathan, N, T Schoelhammer, E Kohler, K Whitehouse, TC Harmon and D Estrin. (2009). Suelo: Human-assisted Sensing for Exploratory Soil Monitoring Studies, 7th ACM Conference on Embedded Networked Sensor Systems (SenSys 2009), Berkeley, CA Nov 4-6, 2009 (18% acceptance rate).
- P4 Park Y and TC Harmon (2008). Environmental Application of Multisensor Data Fusion: Automatic Soil Salinity Control, Proceedings of the IEEE International Conference on Multisensor Fusion and Integration for Intelligent Systems, Seoul, Korea, pp. 158-162.
- P3 Singh, A., M. Batalin, V. Chen, M. Stealey, B. Jordan, J. Fisher, T. Harmon, M. Hansen, and W. Kaiser (2007). Autonomous Robotic Sensing Experiments at San Joaquin River, IEEE 2007 International Conference on Robotics and Automation, , Roma, Italy, May 10-14, 2007. Published in *Field and Service Robotics*, Verlag-Springer Publishers, pp 4987-4993. (47% acceptance rate)
- P2 Singh, A., Batalin, M., Stealey, M., Chen, W., Lam, Y., Hansen, M., Harmon, T., Sukhatme, G., Kaiser, W. (2007). Mobile robot sensing for environmental applications. Proceedings from the 6th International Conference on Field and Service Robotics, pp125-135, Chamonix, FR, July 9-12, 2007. (53% acceptance rate)
- P1 Ramanathan, N., L. Balzano, D. Estrin, T. Harmon, M. Hansen, J. Jay, B. Kaiser, and G. Sukhatme. (2006) Designing Wireless Sensor Networks as a Shared Resource for Sustainable Development. Proceedings of the *First International Conference on Information and Communication Technologies and Development*. Berkeley, CA. May 25-26, 2006. (27% acceptance rate)

Editorials and Scientific Magazine Articles

- E1. Maurice, P and TC Harmon (2007) Environmental Embedded Sensor Networks, Special Issue in *Environmental Engineering Science*, 24(2), 149-150.
- E2. Goldman, J, N Ramanathan, R Ambrose, D Estrin, R Gilbert, M Hansen, T Harmon, J Jay, W Kaiser, G Sukhatme, Y-C Tai (2007) Distributed Sensing Systems for Water Quality Assessment and Management. White

paper commissioned by the U.S. Environmental Protection Agency, published by the Woodrow Wilson International Center for Scholars, Washington DC, 35 pp.

Book Chapters:

- B2 National Research Council (Harmon lead author on Ch. 3 Source Zone Characterization), *Contaminants in the Subsurface: Source Assessment and Remediation*, National Academy Press, 2004, 372 pp.
- B 1 Harmon, T.C., W.P. Ball, and P.V. Roberts. 1989. Nonequilibrium Transport of Organic Contaminants in Groundwater. Ch. 16 in *Reactions and Movement of Organic Chemicals in Soils*, B. L. Sawhney and K. Brown (eds.), American Society of Agronomy and Soil Science Society of America Special Publication No. 22, Madison, WI.

Technical Reports:

- R1 Estrin, D., et al. (T.C. Harmon: Contaminant Transport Monitoring section). Center for Embedded Networked Sensing Annual Progress Report to the National Science Foundation, May 1, 2011.
- R2 Bendikov, M and TC Harmon Development of Agricultural Sensors Based on Conductive Polymers, Technical Completion Report for Binational Agricultural Research and Development (BARD) Project Number: IS-4002-07C, March 31, 2011, 24 pp.
- R3 Estrin, D., et al. (T.C. Harmon: Contaminant Transport Monitoring section). Center for Embedded Networked Sensing Annual Progress Report to the National Science Foundation, May 1, 2010.
- R4 Harmon, TC, and NWT Quinn, Implementation of Wetland Adaptive Water Quality Management Strategies Under Real-Time Salinity TMDLs, UC Water Resources Center, Technical Completion Report Project No. SD007, December 2008, 33 pp.
- R5 Estrin, D., et al. (T.C. Harmon: Contaminant Transport Monitoring section). Center for Embedded Networked Sensing Annual Progress Report to the National Science Foundation, May 1, 2009.
- R6 Estrin, D., et al. (T.C. Harmon: Contaminant Transport Monitoring section). Center for Embedded Networked Sensing Annual Progress Report to the National Science Foundation, May 1, 2008.
- R7 Estrin, D., et al. (T.C. Harmon: Contaminant Transport Monitoring section). Center for Embedded Networked Sensing Annual Progress Report to the National Science Foundation, May 1, 2007.
- R8 Cohen, Y, TC Harmon, D Gilik, A. Katner, J Grifoll, N. Wheeler, L. Chinkin, and P Ryan. The Potential for Offsite Exposures Associated with the Santa Susana Field Laboratory, Ventura County, California, Final Report to Agency for Toxic Substances and Disease Registry (ATSDR), 142 pp.
- R9 Bendikov, M and TC Harmon. Development of Agricultural Sensors Based on Conductive Polymers. Final Report on Bi-National Agricultural Research and Development (BARD) Feasibility Study IS-3712-05, 10 pp.

- R10 Estrin, D., et al. (T.C. Harmon: Contaminant Transport Monitoring section). Center for Embedded Networked Sensing Annual Progress Report to the National Science Foundation, May 1, 2006, 381 pp.
- R11 Estrin, D., et al. (T.C. Harmon: Contaminant Transport Monitoring section). Center for Embedded Networked Sensing Annual Progress Report to the National Science Foundation, May 1, 2005, 367 pp.
- R12 Estrin, D., et al. (T.C. Harmon: Contaminant Transport Monitoring section). Center for Embedded Networked Sensing Annual Progress Report to the National Science Foundation, May 1, 2004, 341 pp.
- R13 Estrin, D., et al. (T.C. Harmon: Contaminant Transport Monitoring section). Center for Embedded Networked Sensing Annual Progress Report to the National Science Foundation, May 1, 2004, 341 pp.
- R14 Hering, J. G. and T. C. Harmon, "Geochemical Controls on Chromium Occurrence, Speciation, and Treatability in Groundwater", Final Report to American Water Works Association Research Foundation, May 2004, 184 pp.
- R15 Estrin, D., et al. (Harmon co-author on Ch 4). Environmental Cyberinfrastructure Needs for Distributed Sensor Networks: A Report from an NSF Workshop, La Jolla, CA, August, 2004.
- R16 Estrin, D., et al. (T.C. Harmon: Contaminant Transport Monitoring section). Center for Embedded Networked Sensing Annual Progress Report to the National Science, May 1, 2003, 145 pp.
- R17 Hering, J. G. and T. C. Harmon, "Geochemical Controls on Chromium Occurrence, Speciation, and Treatability in Groundwater", First Periodic Report to American Water Works Association Research Foundation, September, 2002.
- R18 Cohen, Y. and Harmon, T. C., and Chinkin, L. "Phase I: Assessment of Available Data and Framework for Environmental Analysis", Preliminary Assessment Report to Eastern Research Group and the Department of Toxic Substances Registry, August, 2001.
- R19 Harmon, T.C. In Situ Thermal Desorption (ISTD) of PAHs from Lampblack-Impacted Soils: Model Development. Final Report, Southern California Gas Company, Los Angeles, CA, August 4, 2000.
- R20 Harmon, T.C., "Groundwater Quality" in Southern California Environmental Report Card 1999, R. Berk and A. M. Winer (eds.), UCLA Institute of the Environment, pp. 22-31, 1999.
- R21 Harmon, T.C., "Peer-Review of Text of Methyl Bromide Regulations", Letter report to California EPA's Dept. of Pesticide Regulation, December 17, 1999.
- R22 Harmon, T.C., K. Jackson and A-C. Aycaguer. 1997. *In Situ* Thermal Desorption of Petroleum Hydrocarbons from Unsaturated Soils. Final Report, Southern California Gas Company, Los Angeles, CA.
- R23 Harmon, T.C., B.K. Dela Barre and E. Leung. 1995. *Determination of Sorption Parameters for Modeling the Bioremediation of Diesel Fuel-Contaminated Soils*. Final Report, Naval Facilities Engineering Service Center, Pt. Hueneme, CA.
- R24 Harmon, T.C., B.K. Dela Barre, S. K. Bearden and E. Leung. 1994. *The Behavior of Methanol in Water-Saturated Soil Columns*. Final Report, Universitywide Energy Research Group, Berkeley, CA.
- R25 Kastenberg, W.E., V.K. Dhir, T.C. Harmon, D. Okrent, A. Barfield, P. Katsumata, Z. Wu, and M. Ivanov. 1994. *Study of Fresh-Water Quality Impacts of Methanol Fuel Spills and Leaks*. Report to the California Energy Commission, Center for Clean Technology, UCLA.
- R26 McCarty, P.L., L. Semprini, M.E. Dolan, T.C. Harmon, S. Just, C. Tiedeman, S.M. Gorelick, and P. V. Roberts. 1990. *Evaluation of In-Situ Methanotrophic Bioremediation for Contaminated Groundwater, St. Joseph, Michigan*. Technical Report No. WR-1, Western Region Hazardous Substance Research Center, Stanford University, Stanford, CA.
- R27 Harmon, T.C. and P.V. Roberts. 1989. Section 8: Sorption. In technical report *In-Situ Aquifer Restoration of Chlorinated Aliphatics by Methanotrophic Bacteria*. EPA/600/2-89/033 pp. 96-108.

Conference Presentations/Proceedings and Seminars:

- C1. Harmon, T, AF Hoffman, R Utz, E Deelman, PC Hanson, P Szekely, SR Villamizar, C Knoblock, Q Guo, DG Crichton, MP McMann, and Y Gil (2011). Lowering the Barriers to Integrative Aquatic Ecosystem Science: Semantic Provenance, Open Linked Data, and Workflows, Fall Meeting of the American Geophysical Union, December 5-9, San Francisco, CA.
- C2. Villamizar, SR, Y Gil, P Szekely, V Ratnakar, S Gupta, M Muslea, F Silva and T Harmon (2011). A Scientific Workflow Used as a Computational Tool to Assess the Response of the Californian San Joaquin River to Flow Restoration Efforts, Fall Meeting of the American Geophysical Union, December 5-9, San Francisco, CA.
- C3. Pai, H, SR Villamizar, CA Butler, TC Harmon (2011). High Resolution Synoptic Sensor Surveys to Delineate Possible Groundwater-Surface Water Discharge Zones in a Lowland River, December 5-9, Fall Meeting of the American Geophysical Union, San Francisco, CA.
- C4. Zhu, J, H Pai, CA Butler, Q Guo, and TC Harmon (2011). Exploring the Potential of Hyperspectral Remote Sensing for Assessing Nitrate Distributions in Surface Water: In-Situ Experiments, December 5-9, Fall Meeting of the American Geophysical Union, San Francisco, CA.
- C5. Harmon, TC, S Villamizar, Y Gil, P Szekely, V Ratnakar, M Muslea, F Silva, and CA Knoblock (2011). A scientific workflow used as a computational tool to assess the response of the Californian San Joaquin River to flow restoration efforts, GLEON 13, October 10-14, Lake Sunapee, NH.
- C6. Harmon, T.C. Development and Application of Sensor Networks in the Observation of Aquatic Ecosystems. (2010) Pan-American Advanced Studies Institute, La Selva, Costa Rica, Aug 20-23.

- C7. Harmon, TC, Villamizar, SR, Pai, H and CA Butler (2010). Assessment of Spatiotemporal Variation of River Metabolism in a Human-Dominated Watershed. *Eos Trans. AGU*, 91(26), Meeting of the Americas, August 8-12, 2010, Abstract H33B-08 (poster).
- C8. Barnes, P, J Zhu, D Li, SR Villamizar, CA Butler, H Pai and TC Harmon (2009). Stream Segment Energy Balances Using Digital Cameras and Inexpensive Light Sensors. *Eos Trans. AGU*, 90(52), Fall Meeting Suppl., Abstract H11F-0898. (poster)
- C9. Villamizar SR, H Pai, CA Butler, P Barnes and TC Harmon (2009). Reach-scale spatial and temporal variations in whole-stream metabolism estimates within a lowland river in California. *Eos Trans. AGU*, 90(52), Fall Meeting Suppl., Abstract H33D-0904. (poster)
- C10. Pai, H, JC Fisher, SR Villamizar, CA Butler, W Kaiser, and TC Harmon (2009). Multi-scale field characterization, data assimilation, and 2-D model development for a complex river confluence. *Eos Trans. AGU*, 90(52), Fall Meeting Suppl., Abstract H21B-0836. (poster)
- C11. Harmon, T.C. Pan-American Sensors for Environmental Observatories. Pan-American Advanced Studies Institute, Bahia Blanca, Argentina, March 15-28, 2009.
- C12. Harmon, T. C. Irrigation to Environmental Quality: Developing a Sensor Network to Close the Loop on Water Resources Management in the Arid West. Department of Civil & Environmental Engineering Seminar Series, Stanford University, March 6, 2009. (invited)
- C13. Harmon, T.C., A. Ratko, H. Dietrich, Y. Park, Y.H. Wijsboom, and M. Bendikov. Fabrication and In Situ Testing of Scalable Nitrate-Selective Electrodes for Distributed Observations, American Geophysical Union, San Francisco, CA, December 18, 2008. (invited)
- C14. Harmon, T.C., The Pan-American Sensors Initiative for Environmental Observations, 6th Ibero-American Congress on Sensors (IBERSENSOR 2008), Sao Paulo, Brazil, November 24-26, 2008. (Keynote Speaker)
- C15. Harmon, T. C. Developing and Testing Scalable Ion Selective Electrodes for Observing Nitrate Cycling in Soils: Successes and Failures. Workshop on Environmental Sensing Networks, The Johns Hopkins University, Baltimore, MD, September 5, 2008. (invited)
- C16. Harmon, T. C. Designing Model Driven Sensor Systems to Close the Loop on Water Resources Management in the Arid West, University of Nevada Reno Hydrologic Sciences Fall Colloquia Series, Reno, NV, September 26, 2008. (invited)
- C17. Harmon, T.C. Sensor Technology: Some Thoughts to Ruminare On, Gordon Research Conference, Holderness, NH, June 24, 2008. (invited)
- C18. Harmon, T.C. Decentralized Water Treatment in Small Communities: One Part of Precision Sustainability. Pan-American Advanced Studies Institute, Concepcion, Chile, August 20, 2008. (invited)
- C19. Fisher, JC, H Pai, SR Villamizar, CA Butler, and TC Harmon (2008). Precision Flow and Salinity Mass Balance Assessments Across the Merced-San Joaquin River Confluence Zone. *Eos Trans. AGU*, 89(53), Fall Meeting Suppl., Abstract H51H-0971. (poster)
- C20. Butler, CA, J Fisher, H Pai, SR Villamizar and TC Harmon (2008). Development of a Subsurface Flow Path Observational Site to Connect Agricultural Land Management with Groundwater-Surface Water Interactions, *Eos Trans. AGU*, 89(53), Fall Meeting Suppl., Abstract H51H-0975. (*best student poster award*)
- C21. N. Ramanathan, C. Lee, T. Lin, R. Neumann, S. Rothenberg, C. Harvey, T. Harmon, E. Kohler, D. Estrin, J. Jay. Sensor-based investigation of biogeochemical controls on arsenic mobilization in rural Bangladesh, *Procs. of American Chemistry Society, General Meeting*. Boston, 2007.
- C22. Harmon, T.C. Environmental Sensor Applications: Big Picture. Seminar at Zhejiang University, Hongzhou, China, April 17, 2007. (invited)
- C23. Harmon, T.C. Using Environmental Process Models to Guide Sensor Network Sampling Design, Mathematical Challenges and Opportunities in Sensor Networking, Institute of Pure & Applied Mathematics (IPAM), Los Angeles, CA, January 8-12, 2007. (invited)
- C24. Conklin, M, Bales, R, Boyer, E, Cayan, D, Dozier, J, Fogg, G, Harmon, T, Kirchner, J, Miller, N, Molotch, N, and Redmond, K Observatory Design in the Mountain West: Scaling Measurements and Modeling in the San Joaquin, American Geophysical Union, Fall Meeting, San Francisco, CA, 2006.
- C25. Montgomery, J, Minsker, B, Haas, C, Schnoor, J, Hooper, R, Graham, W, Dressler, K, Harmon, T, Maidment, D, Reible, D, Welty, C, Wilson, J. WATERS Network: An Initiative of the U.S. National Science Foundation Engineering and Geosciences Directorates, American Geophysical Union, Fall Meeting, San Francisco, CA, 2006.
- C26. N. Ramanathan, S. Rothenberg, D. Estrin, T. Harmon, C. Harvey, J. Jay, and E. Kohler. Investigation of hydrologic and biogeochemical controls on arsenic mobilization using distributed sensing at a field site in Munshiganj, Bangladesh *American Geophysical Union*, Fall Meeting, San Francisco, CA, 2006.
- C27. Harmon, T.C. Multiscale Embedded Networked Sensing in Support of Integrated Precision Agriculture, Environmental, and Ecological Observations and Management, 8th International Conference on Precision Agriculture, Minneapolis, MN, July 23-26, 2006. (Keynote Speaker)
- C28. Harmon, T.C. Multiscale Embedded, Networked Sensing in Support of Environmental and Ecological Observation and Management Weizmann Institute of Science, Rehovot, Israel, July 13, 2006. (invited)
- C29. Harmon, T.C., R. Bales, S. Traina, W. Kaiser, and D. Estrin, Observing, Forecasting, and Managing a

- CLEANER California Water Cycle. National Science Foundation CLEANER Planning Grant Report, Arlington, VA, March 6, 2006
- C30. Harmon, T.C. Distributed Networked Sensing in Environmental Systems: Fusing Existing and New Infrastructure. NSF CLEANER Project Office Workshop, Arlington, VA, March 7, 2006. (invited)
- C31. Bendikov, T.A., N. Jurisch, M. Davidson and T.C. Harmon. Potentiometric Nitrate Sensors in the Form of Plant Roots. Center for Embedded Network Sensing Annual Research Review, Los Angeles, CA, October 28, 2005.
- C32. Park, Y., J. Kim, J.A. Saez, and T. C. Harmon. Management of Soil Moisture and Nitrate Transport Using Sensor Networks and Feedback Control. Center for Embedded Network Sensing Annual Research Review, Los Angeles, CA, October 28, 2005.
- C33. Benahmed, A., N. Rechner, R. Lam, M. Bendikov, A. Rat'ko, Y. Wishjboom, C. Butler, I. Goldberg, D. Kim, M. Glickman, D. Zhang, M. Leu, S. Zheng, M. Mahapatro, P. Gross, B. Stauffer, A. Lee, M. Thomson, C. Zhou, D. Caron, A. Requicha, T. C. Harmon, J. Judy, Y-C. Tai, and C-M. Ho. Wireless Miniature Sensors for CENS: Overview. Center for Embedded Network Sensing Annual Site Visit, Los Angeles, CA, June 7-8, 2006.
- C34. Butler, C., A. Rat ko, Yair Wishjboom, T. Bendikov, T. Harmon, D. Kim, Michael Bendikov, and J. Judy. Scaleable Nitrate Sensors for Soil and Aquatic Observation Applications. Center for Embedded Network Sensing Annual Site Visit, Los Angeles, CA, June 7-8, 2006.
- C35. Harmon, T.C., J. Fisher, Y. Park, N. Ramanathan, J. Jay, W. Kaiser, S. Margulis, J. A. Saez, A. Rat'ko, J. Kim, M. Rahimi, J. Hicks, L. Balzano, N. Busek, J. Ewart, S. Rothenberg, M. Stealey, S. R. Villamizar Amaya, C. Butler, C-C. Wu, M. Srivastava, and D. Estrin. CENS Contaminant Transport Observation and Management (Contam) Research Overview. Center for Embedded Network Sensing Annual Site Visit, Los Angeles, CA, June 7-8, 2006.
- C36. Villamizar Amaya, S., T Harmon, W Kaiser, J Fisher, H Pai, A Singh, M A Batalin, M Stealey, V Chen. Understanding of Flow, Mixing and Groundwater Accretion on Large-Scale Rivers Using Integrated Modeling and Multiscale Embedded Networked Sensing, Center for Embedded Networked Sensing Annual Research Review, Los Angeles, CA, October 26, 2006.
- C37. Ramanathan, N., Y. Park, L. Balzano, J. Kim, J. Ewart, M. Burt, T.C. Harmon, D. Estrin, J. Jay, E. Kohler, J.A. Saez, S. Rothenberg, N. Busek, J. Hicks, C-C. Wu, S. Margulis, M. Srivastava, and C. Harvey. Embedded Networked Sensing of Subsurface Water Quality Calibration, Fault Detection and Feedback Control. Center for Embedded Network Sensing Annual Site Visit, Los Angeles, CA, June 7-8, 2006.
- C38. Harmon, T.C., W. Kaiser, A. Rat'ko, J. Fisher, C. Butler, M. Stealey, and S. Villamizar Amaya. A Multiscale Embedded Networked Sensing Water Quality Observatory Pilot Study at the Merced and San Joaquin Rivers Confluence. Center for Embedded Network Sensing Annual Site Visit, Los Angeles, CA, June 7-8, 2006.
- C39. Montgomery, J L., Minsker, B., Schnoor, J., Haas, C., Bonner, J., Driscoll, C., Eschenbach, E., Finholt, T., Glass, J., Harmon, T.C., Johnson, J., Krupnik, A., Reible, D., Sanderson, A, Small, M, Van Briesen, J. Integrated Hydrologic Science and Environmental Engineering Observatory: CLEANER's Vision for the WATERS Network, American Geophysical Union Joint Assembly Annual Spring Meeting, Baltimore, MD, May 23-26, 2006.
- C40. Fisher, J.C., T.C. Harmon, W. Kaiser. Multiscale River Hydraulic and Water Quality Observations Combining Stationary and Mobile Sensor Network Nodes. American Geophysical Union Joint Assembly Annual Spring Meeting, Baltimore, MD, May 23-26, 2006.
- C41. Harmon, T.C., R. Bales, M. Conklin, and S. Traina. A Modern Curriculum for Hydrology: Sensors and Information Technology, American Institute of Hydrology Annual Conference, Baton Rouge, LA, May 22, 2006. (invited)
- C42. Harmon, T.C., Y. Park, J. Ewart, J. Saez, and F. Guerrero. Adaptive Management of Nitrate in Support of Irrigation with Reclaimed Water: Sensor Network-Driven Simulations with Feedback-Control, California Groundwater Resources Association Nitrate Symposium, Modesto, CA, April 26, 2006.
- C43. Butler, C.T., A. Rat'ko, and T.C. Harmon, Sensitive Nitrate Ion-Selective Sensors Based on Modified Polypyrrole Films, California Groundwater Resources Association Nitrate Symposium, Modesto, CA, April 26, 2006. (poster)
- C44. Saez, J.A., Y. Park, T.C. Harmon, and F. Guerrero. Adaptive Management of Nitrate in Support of Irrigation with Reclaimed Water: California Groundwater Resources Association Nitrate Symposium, Modesto, CA, April 26, 2006. (poster)
- C45. Y. Park, J. Ewart, and T.C. Harmon. Adaptive Management of Irrigation with Feedback Control to Avoid Groundwater Pollution by Nitrate, American Water Resources Association Summer Specialty Conference on Adaptive Management and Water Resources, Missoula, MT, June 26-28, 2006.
- C46. J. Fisher, T. C. Harmon, and W. Kaiser. Cross-Sectional River Hydraulics and Water Quality Characterization Using Rapidly Deployable Networked Info-Mechanical Systems (NIMS RD), American Water Resources Association Summer Specialty Conference on Adaptive Management and Water Resources, Missoula, MT, June 26-28, 2006.
- C47. Harmon, T.C. and D. Estrin. Distributed, Embedded Networked Sensing in Environmental and Hydrologic Observatories, CUAHSI Cyberseminar January 18, 2005. (invited)
- C48. Harmon, T.C., Sensors and Sensor Networks Supporting Multiscale Hydrologic, Environmental, and Ecological Observations, National Resource Council Committee on Integrated Observations for Hydrologic and Related Sciences, Costa Mesa, CA, June 23, 2005. (invited)

- C49. Park, Y., J. Kim, and T.C. Harmon, Managing Soil Moisture and Nitrate Transport during Reclaimed Water Irrigation, American Water Resources Association Annual Conference, Seattle, WA, November 9, 2005
- C50. Harmon, T.C., Microsensors to the Model Forecasts: Multiscale Embedded Networked Sensing of Nutrients in the Watershed. American Geophysical Union Annual Fall Meeting, San Francisco, CA, December 5-9, 2005. (invited)
- C51. Harmon, T.C., N. Jurisch, and M. Davidson, Environmentally Interesting Form Factors: Early Successes and Challenges Ahead, Symposium on Nitrogen Eutrophication in Xeric Wildland and Agricultural Systems, Riverside, CA, January 19-20 2005. (invited)
- C52. Harmon, T.C. Sensors and Networked Sensing Technologies in Precision Agriculture, NSF Sensors for Environmental Observatories Workshop, Seattle, WA Nov 30-Dec 2 2004. (invited)
- C53. Harmon, T.C., N. Jurisch, M. Davidson, and J. E. Haux., Scaleable Nitrate Microsensors in the Form of a Plant Root, American Geophysical Union Fall Meeting, San Francisco, CA, December 13-17, 2004.
- C54. Haux, J.E., N. Busek, Y. Park, D. Estrin, and T.C. Harmon, Establishing a Multi-spatial Wireless Sensor Network to Monitor Nitrate Concentrations in Soil Moisture, American Geophysical Union Fall Meeting, San Francisco, CA, December 13-17, 2004.
- C55. Fisher, J.C. and T.C. Harmon, A Coupled Systems Approach to Solute Transport Within a Heterogeneous Vadose Zone-Groundwater Environment, American Geophysical Union Fall Meeting, San Francisco, CA, December 13-17, 2004.
- C56. Park, Y., J. Kim, and T.C. Harmon, Embedded Networked Sensing in Support of Managing Irrigation with Reclaimed Wastewater, American Geophysical Union Fall Meeting, San Francisco, CA, December 13-17, 2004.
- C57. Haux, J.E., T.C. Harmon, J. Saez, J. Kim, Y. Park, N.D. Busek, T. Schoellhammer, and D. Estrin. Embedded Network Sensing of Moisture and Nitrate Propagation During Irrigation with Reclaimed Wastewater. Center for Embedded Network Sensing Annual Research Review, Los Angeles, CA, October 22, 2004.
- C58. Kim, J., J. A. Saez, N. Busek, Y. Park, J. E. Haux, D. Estrin and T.C. Harmon. Networked Sensing of Nitrate in Support of Groundwater Quality Protection. Center for Embedded Network Sensing Annual Research Review, Los Angeles, CA, October 22, 2004.
- C59. Haux, J.E., T.C. Harmon, J. Saez, J. Kim, Y. Park, N. D. Busek, T. Schoellhammer, and D. Estrin. Establishing a Multi-Spatial Wireless Sensor Network to Monitor Nitrate Concentrations in Soil Moisture. Center for Embedded Network Sensing Annual Research Review, Los Angeles, CA, October 22, 2004.
- C60. Haux, J.E., T.C. Harmon, J. Saez, J. Kim, Y. Park, N. D. Busek, T. Schoellhammer, and D. Estrin. Establishing a Multi-Spatial Wireless Sensor Network to Monitor Nitrate Concentrations in Soil Moisture. Center for Embedded Network Sensing Annual Research Review, Los Angeles, CA, October 22, 2004.
- C61. Davidson, M., N. Jurisch, J. E. Haux, T. C. Harmon. Development of Nitrate Selective Electrodes for Monitoring Environmental Quality. Center for Embedded Network Sensing Annual Research Review, Los Angeles, CA, October 22, 2004.
- C62. J. Eric Haux, N. D. Busek, T. Schoellhammer, J. Saez, Y. Park, J. Kim, T.C. Harmon, and D. Estrin, "Establishing a Multi-Spatial Wireless Sensor Network to Monitor Nitrate Concentrations in Soil Moisture" American Society of Agricultural Engineers, Ottawa, CA, Aug. 1-4, 2004.
- C63. J. E. Haux, T.C. Harmon, N.D. Busek, T. Schoellhammer, J. Saez, J. Kim, Y. Park, and D. Estrin, "Embedded Network Sensing of Moisture and Nitrate Propagation During Irrigation with Reclaimed Wastewater" American Society of Agricultural Engineers, Ottawa, CA, Aug. 1-4, 2004.
- C64. Harmon, T.C., "Distributed, Networked Sensing and the Terrestrial Environment," presented at the Soil Cyber workshop, Idyllwild CA, Feb 19-21, 2004
- C65. Harmon, T.C., "Embedded Networked Nitrate Sensing in Support of Groundwater Quality Protection" presented in the Department of Land, Air, and Water Resources seminar series at UC Berkeley, May 6, 2004.
- C66. Harmon, T.C., "Embedded Networked Sensing in Environmental Systems: an Overview of CENS Activities," NSF CLEANER Workshop, Troy NY June 14-16, 2004. (invited)
- C67. Harmon, T.C., "Embedded Networked Nitrate Sensing in Support of Groundwater Quality Protection" presented in the Environmental Engineering seminar series at UC Berkeley, October 31, 2003.
- C68. Harmon, T.C., "Embedded Networked Sensing in the Soil Domain," presented at the NSF Workshop on Environmental Cyberinfrastructure Needs for Distributed Sensor Networks, Scripps Institute of Oceanography, La Jolla, CA 2003. (invited)
- C69. Harmon, T.C., "Networked Sensing in Support of Groundwater Quality Protection", presented at the NSF Electrical and Communications Systems (ECS) Division Workshop on Wireless Networked Sensor and Actuator Systems and Grantees Meeting, Los Angeles, CA, Sept. 8, 2003. (invited)
- C70. Bendikov, T.A., J. Kim, and T. C. Harmon, Development and Environmental Applications of a Nitrate Selective Microsensor Based on Doped Polypyrrole Films; 204th Meeting of the Electrochemical Society, October 12-16, 2003, Orlando, USA.
- C71. Bendikov, T.A., J. Kim, Y. Park, J. Saez, and T. C. Harmon, Error Resiliency in a Soil Moisture and Nitrate Sensor Network for Protecting Groundwater Quality Protection; Frontiers in Assessment Methods for the Environment, University of Minnesota, August 10-13, 2003, Minneapolis, MN, USA.

- C72. Bendikov, T. A., J. Kim, Y. Park, J. Saez and T.C. Harmon, Networked Sensing of Nitrate in Support of Groundwater Quality Protection, American Water Resources Association Annual Conference, San Diego, CA, November 3-6, 2003.
- C73. Hering, J. G., Lee, G., Echarte, M., Fisher, J. and Harmon, T. C., Geochemical Controls on the Evolution of Water Quality during Aquifer Storage, American Water Resources Association Annual Conference, San Diego, CA, November 3-6, 2003.
- C74. Fisher, J., Echarte, M. and Harmon, T. C., Modeling of a Aquifer Storage and Recovery Systems Impacted by Natural Sources of Groundwater Contamination, American Water Resources Association Annual Conference, San Diego, CA, November 3-6, 2003
- C75. Echarte, M., Fisher, J., Harmon, T. C. and Hering, J. G., Modeling Reactive and Non-reactive Transport of a Natural Contaminant in an Aquifer Storage System, American Water Resources Association Annual Conference, San Diego, CA, November 3-6, 2003.
- C76. Yoon, V. K., Ambrose, R., Harmon, T.C., Marish, E., Phytoremediation for Soil Contaminated with Petroleum Hydrocarbons Using California Native Plants, Southern California Society of Environmental Toxicology and Chemistry Annual Meeting, Santa Barbara, CA, May 30-31, 2003.
- C77. Yoon, V. K., Ambrose, R., Harmon, T.C., Marish, E., Phytoremediation for Soil Contaminated with Petroleum Hydrocarbons Using California Native Plants, UC Toxic Substances Research & Teaching Program 16th Annual Research Symposium, Oakland, CA, April 25-26, 2003.
- C78. Kim, J., Bendikov, T.A., Park, Y. and Harmon, T.C., Networked Sensing in Support of Real-Time Parameter Estimation, European Geological Society-American Geophysical Union-European Union of Geosciences Joint Assembly, Nice, France, April 6-11, 2003.
- C79. Harmon, T.C., Development and Educational Assessment of an Interactive Database Supporting Virtual Fieldwork in an Environmental Engineering Design Project, Seminar presented to the Civil & Environmental Engineering Department, University of Nevada, Las Vegas, January 30, 2002. (invited)
- C80. Harmon, T. C. Protecting Groundwater Resources: Can We Avoid Repeating Mistakes of the Past?, Royal Melbourne Institute of Technology Workshop on Environmental Sustainability, Melbourne, Australia, March 15, 2002.
- C81. Harmon, T. C., Curriculum Development in Environmental Engineering at UCLA, Seminar presented at UC-Merced, March 28, 2002. (invited)
- C82. Yoon, K., R. Ambrose and T. C. Harmon. Chelate-facilitated phytoextraction of heavy metals by exotic and native plants. Phase I: plant screening and treatability study, UC Toxic Substances Teaching & Research Program Annual Symposium, Long Beach, CA April 5-6, 2002.
- C83. Carvalho, M. N., T. C. Harmon and B. K. Ahring, Thermally Enhanced Bioremediation of PAH-Contaminated Soil, Batelle's Third International Conference on Remediation of Chlorinated and Recalcitrant Compounds, Monterey, CA, May, 2002. (poster)
- C84. Harmon, T. C., An Overview of the Interactive Site Investigation Software (ISIS), Association of Environmental Engineering and Science Professors-American Academy of Environmental Engineers Education and Research Conference, August 10-14, 2002, Toronto, Ontario.
- C85. Harmon, T.C., Burks, G.A., Chung, G. K.W.K. and Baker, E. L., Evaluation of a Simulation and Problem-Based Learning Design Project Using Constructed Knowledge Mapping , presented at the American Society of Engineering Education Annual Conference, Albuquerque, NM, June 26, 2001.
- C86. Chung, G. K. W. K., Harmon, T.C., Baker, E.L. and Burks, G.A., Potential Uses of On-Line Performance Assessments in Engineering Education: Measuring Complex Learning Outcomes and Processes , presented at the American Society of Engineering Education Annual Conference, Albuquerque, NM, June 27, 2001.
- C87. Brahma, P. P. and T. C. Harmon, Observation of the Dissolution from Residual Phase Multicomponent Nonaqueous Phase Liquids (NAPLs) , American Geophysical Union Spring Meeting, Boston, MA, May 29-June2, 2001.
- C88. Harmon, T. C., G. A. Burks and M. Hosseini, Physical-Chemical Characterization of West Coast Manufactured Gas Plant (MGP) Soils , California Academy of Sciences Research Symposium, May 2001.
- C89. Harmon, T. C., Evaluation of a Simulation and Problem-Based Learning Design Project Using Constructed Knowledge Mapping , Seminar presented at the Department of Geography and Environmental Engineering, The Johns Hopkins University, September 8, 2001.
- C90. Leij, F. J., A. Sciortino, and T. C. Harmon. Critical Assessment of the Dissolution Condition for Mass Transfer from DNAPL Pools in Porous Media , American Geophysical Union Annual Fall Meeting, San Francisco, CA, December 10-14, 2001. (poster)
- C91. Harmon, T.C., Burks, G.A. and Hosseini, M., Physical-Chemical Characterization of West Coast Manufactured Gas Plant (MGP) Soils , presented at the Southern California Academy of Sciences Annual Symposium, Los Angeles, CA, May 5, 2001.
- C92. Sciortino, A. Harmon, T.C. and Yeh, W. W-G, Experimental Design and Model Parameter Estimation for Locating a Dissolving DNAPL Pool , presented at the American Geophysical Union Fall National Meeting, San Francisco, CA, December 18, 2000.
- C93. Brahma, P.P., Hutton, H.M. and Harmon, T.C., Dissolution from Multicomponent Nonqueous Phase Liquids (NAPLs): Role of Intra-NAPL Diffusion , presented at the American Institute of Chemical Engineers (AIChE) National Meeting, Los Angeles, CA, November 15, 2000.
- C94. Burks, G.A. and Harmon, T.C., Volatilization of solid phase organic mixtures in soils , presented at

- the Geological Society of America Conference, Reno, NV, November 14, 2000.
- C95. Harmon, T.C., G.A. Burks, J.J. Giron, W. Wong, G. Chung and E. Baker, An Interactive Database Supporting Virtual Fieldwork in an Environmental Engineering Design Project, American Society of Engineering Education National Meeting, St. Louis, MO, June 18-23, 2000.
- C96. Khachikian, C.S. and Harmon, T.C., Release of PAHs from the Vadose Zone, proceedings of the 32nd Mid Atlantic Industrial and Hazardous Waste Conference, Troy, NY, June 23, 2000.
- C97. Chrysikopoulos, C.V., Lee, K.Y. and Harmon, T.C. Experimental Study of TCE Pool Dissolution in Saturated Porous Media, Proceedings from the International Conference on the Protection and Restoration of the Environment V, Thassos, Greece, July, 2000.
- C98. Harmon, T.C. and Saez, J.A. Two-Phase Groundwater Remediation Management Incorporating Nonequilibrium Effects, presented at the American Chemical Society 220th National Meeting, Washington, D.C., August 23, 2000 (invited)
- C99. Harmon, T.C., Thermally Enhanced Vapor Extraction for Removing PAHs from Lampblack-Contaminated Brownfield Property, presented in the UCLA Department of Environmental Health Sciences Seminar Series, November 4, 1999.
- C100. Leij, F. J., A. Sciortino, T. C. Harmon and W. W-G. Yeh. Analytical Modeling of Transport from a DNAPL Source, American Society of Agronomy-Crop Science Society of America-Soil Science Society of America Meeting, Salt Lake City, UT, Oct. 31-Nov.4, 1999.
- C101. Harmon, T.C., Combining Research and Curriculum Development: An Interactive Database Supporting Virtual Fieldwork in an Environmental Engineering Design Project, presented in the UCLA Environmental and Water Resources Engineering Seminar Series, November 23, 1999.
- C102. Harmon, T.C., Management of Remediation of Contaminated Soils, presented at the workshop on Transport and Cleanup Processes in the Unsaturated (Soil) Zone under Dryland Conditions, Center for Water Science and Technology, Ben-Gurion University of the Negev, Israel, June 9, 1999.
- C103. Khachikian, C.S., The Dissolution of Nonaqueous Phase Solid Organic Contaminants from Soils: Effect of Contamination on Surface Area, Poster, American Geophysical Union Spring Meeting, Boston, MA, May 31-June 4, 1999.
- C104. Sciortino, A., Harmon, T. C., Yeh, W. W-G., Experimental Design for DNAPL Pools Location in Groundwater: Application of Genetic Algorithms. AGU Fall Meeting San Francisco, CA, December 13-17, 1999.
- C105. Sciortino, A.S., Harmon, T.C. and Yeh W. W-G., An Inverse Modeling Procedure for Locating DNAPL Pools in the Subsurface Under Steady Flow Conditions, American Geophysical Union Spring Meeting, Boston, MA, May 31-June 4, 1999.
- C106. Harmon, T.C., Aycaguer, A-C., Jackson, K.J, Hosseini, M. and Boyd, W., A Feasibility Study for Natural Gas-Fueled In Situ Thermal Desorption of Lampblack Impacted Soils, West Coast Conference on Contaminated Soils and Water, Oxnard, CA March 8-11, 1999.
- C107. Sciortino, A., Harmon, T. C., Yeh, W. W-G., Dhir, V., van Genuchten, M. Th., Wong, H., Jiang, S. J., Remediation Modeling and Management for Reducing Risk from Contamination in the Unsaturated Soil Zone. Proceedings of the 11th annual research symposium of the University of California Toxic Substances Research and Teaching Program. Berkeley, California, April 24-25, 1998.
- C108. Harmon, T. C., Dela Barre, B. K., Sciortino, A., Inverse modeling for locating contaminant sources: Physico-chemical issues regarding NAPL dissolution (Part1). Proceedings of the ISGIM conference. Ravello (SA), Italy, September 1-3, 1998.
- C109. Sciortino, A., Dela Barre, B. K., Harmon, T. C., Inverse modeling for locating contaminant sources: Physico-chemical issues regarding NAPL dissolution (Part 2). Proceedings of the ISGIM conference, Ravello (SA), Italy, September 1-3, 1998.
- C110. Lee, K.Y., Chrysikopoulos, C.V. Harmon, T.C. An Experimental Study of Contaminant Transport from Dissolution of a Well-Defined Trichloroethylene Pool in Saturated Porous Media, Poster, American Geophysical Union Fall Meeting, San Francisco, CA (EOS 79(45):F330) December 6-10, 1998.
- C111. Leij, F. J., Sciortino, A., Harmon, T.C., Yeh, W. W-G., Inverse Modeling of Transport from a Rectangular DNAPL Source, Poster, American Geophysical Union Fall Meeting, San Francisco, CA (EOS 79(45):F331) December 6-10, 1998.
- C112. Dela Barre, B. K., Harmon, T.C., Chrysikopoulos, C.V. Dissolution of DNAPL Pools of Nonideal Geometry in a Homogeneous Porous Medium, presented at the American Geophysical Union Fall Meeting, San Francisco, CA (EOS 79(45):F389) December 6-10, 1998.
- C113. Lee K.Y. Chrysikopoulos, C.V., Harmon, T.C. Measuring and Modeling DNAPL Pool Dissolution in Three-Dimensional Porous Media: 1. Ideal Pool Geometry, Proceedings from the Symposium on Environmental Models and Experiments Envisioning Tomorrow (EnvironMEET '98), Irvine, CA, July 20-23, 1998.
- C114. Dela Barre, B.K., Harmon, T.C., Chrysikopoulos, C.V., Measuring and Modeling DNAPL Pool Dissolution in Three-Dimensional Porous Media: 2. Nonideal Pool Geometry, Proceedings from the Symposium on Environmental Models and Experiments Envisioning Tomorrow (EnvironMEET '98), Irvine, CA, July 20-23, 1998.
- C115. Yu, D., C.S. Khachikian and T. C. Harmon, Solute Pulse Dispersion in Soil Columns: A Comparison of Supercritical Fluid, Gaseous and Aqueous Systems, presented at the American Chemical Society National Meeting, September 9, 1997, Las Vegas, NV.
- C116. C.S. Khachikian and T.C. Harmon, Mass Transfer Rates for Nonvolatile Organic Compound

- Dissolution from Natural Solids , presented at the American Chemical Society National Meeting, September 11, 1997, Las Vegas, NV.
- C117. Kim, T-J., C. V. Chrysikopoulos and T. C. Harmon, Dynamics of Miscible Displacement in Water-Saturated One-Dimensional Soil Columns , Proceedings of the 17th Annual American Geophysical Union (AGU) Hydrology Days, April 14-18, 1997, Fort Collins, CO, pp. 161-170.
- C118. Dela Barre, B.K., T.C. Harmon and C.V. Chrysikopoulos, An Experimental Investigation of Water Displacement by Methanol in Water-Saturated Soil Columns , Proceedings of the 17th Annual American Geophysical Union (AGU) Hydrology Days, April 14-18, 1997, Fort Collins, CO, pp. 45-56.
- C119. Saez, J. A., T. C. Harmon, D. Kong, Y-H. Sun and W. W-G. Yeh, Optimal Management of Pumping Periods for Pump-and-Treat Remediation , American Geophysical Union (AGU) Fall Meeting, Dec. 15-19, 1996, San Francisco, CA (*EOS, Trans. American Geophysical Union* 77(46): F279).
- C120. Harmon, T.C., T-J. Kim, B. K. Dela Barre and C. V. Chrysikopoulos, Investigation of Miscible, Inhomogeneous Fluid Displacement in One-Dimensional Soil Columns , American Geophysical Union (AGU) Fall Meeting, Dec. 15-19, 1996, San Francisco, CA (*EOS, Trans. American Geophysical Union* 77(46): F202). (poster)
- C121. D. Yu, G.A. Burks and T.C. Harmon, Mass Transfer Resistances for Nonvolatile Organic Chemical Dissolutions from Model and Natural Surfaces During Supercritical Fluid Extraction , American Chemical Society (ACS) Pacific Conference, Oct. 30 - Nov. 2, 1996, San Francisco, CA. (invited)
- C122. Harmon, T.C., B. K. Dela Barre and F. E. Goetz. June 10-12, 1996, The Role of Sorption and Soil Moisture in Biopiles , Proceedings of the 3rd International Symposium on Environmental Geotechnology, June 10-12, 1996, San Diego, CA, pp. 755-764.
- C123. Saez, J. A., D. Kong, T.C. Harmon and W. W-G. Yeh. December 13, 1995. Employing Spatial Moment Analysis of Local Concentration Gradients for Managing Pump-and-Treat Schemes in Heterogeneous Aquifers. Fall Meeting of the American Geophysical Union, San Francisco, CA (*EOS, Trans. American Geophysical Union*, 74(43): 305). (poster)
- C124. Harmon, T.C., B.K. Dela Barre and E. Leung. May 13-18, 1995. Sorption Equilibria and Rates for Petroleum Hydrocarbons in Soils. International Adsorption Society Meeting, Pacific Grove, CA. (poster)
- C125. Kong, D., T.C. Harmon and W. W-G. Yeh. December 9, 1994. Numerical Studies of Solute Transport Affected by Rate-Limited Desorption and Hydrogeological Heterogeneity. Fall Meeting of the American Geophysical Union, San Francisco, CA (*EOS, Trans. American Geophysical Union*, 74(43): 305).
- C126. Harmon, T.C. and J. A. Saez. November 14, 1994. Examining the Pore Diffusion Model Interpretation of Organic Contaminant Desorption from Aquifer Solids 86th Annual Meeting of the American Society of Agronomy, Crop Science Society of American and Soil Science Society of American, Seattle, WA. (invited)
- C127. Harmon, T.C., B.K. Dela Barre, and S.K. Bearden. March 15, 1994. The Effect of Temperature on the Desorption Rate of Halogenated Alkenes from Aquifer Solids. American Chemical Society National Meeting, San Diego, CA.
- C128. Kong, D., W. W-G Yeh, and T.C. Harmon. December 10, 1993. Numerical Investigation of Solute Transport Affected by Slow Desorption Processes Using an Upstream-Weighted Multiple-Cell Balance Method. Fall Meeting of the American Geophysical Union (*EOS, Trans. American Geophysical Union*, 74(43): 305). (poster)
- C129. Harmon, T.C. and P.V. Roberts. October 3-7, 1993. Measuring Contaminant Desorption Rates from Aquifer Solids Using a Solvent Extraction Technique. Proceedings of the Water Environment Federation 66th Annual Conference & Exposition, Anaheim, CA, pp. 97-108.
- C130. Harmon, T.C. March 18, 1993. Predicting Remediation Times Using Laboratory-Based Desorption Rates. Air Force Environmental Restoration Technical Interchange Symposium, Salt Lake City, UT.
- C131. Harmon, T.C. May 7, 1993. A Laboratory Investigation of Intraparticle Diffusion Rates of Halogenated Alkenes in Aquifer Solids Seminar presented to the Department of Civil and Environmental Engineering, University of California, Irvine. (invited)
- C132. Harmon, T.C. April 22, 1993. The Role of Slow Desorption in Aquifer Remediation. Seminar presented to the Department of Soil and Environmental Science, University of California, Riverside. (invited)
- C133. Harmon, T.C. and P.V. Roberts. August 9, 1992. The Effect of Equilibration Time on Desorption Rate Measurements with Aquifer Particles. American Institute of Chemical Engineers Summer National Meeting, Minneapolis, MN.
- C134. Harmon, T.C. and P.V. Roberts. July 18, 1992. Determining and Modeling Mass-Transfer Rate Limitations in Heterogeneous Aquifers. International Association of Water Pollution Research and Control (IAWPRC) Conference, Washington, D.C.
- C135. Harmon, T.C. and P.V. Roberts. May 28, 1991. Determining and Modeling the Desorption Rate of Volatile Organic Chemicals from Aquifer Solids. American Geophysical Union Spring Meeting, Baltimore (*EOS Trans. American Geophysical Union*, 72(17):120).
- C136. Reinhard, M., L.E. Wills, H.A. Ball, T.C. Harmon, D.W. Phipps, H.F. Ridgway, and M.P. Eisman. March 20, 1991. A Field Experiment for the Anaerobic Biotransformation of Aromatic

- Hydrocarbon Compounds at Seal Beach, California. Proceedings, In Situ and On-Site Bioreclamation International Symposium (R. Hinchee, Ed.), San Diego, CA.
- C137. Harmon, T.C., L. Semprini, and P.V. Roberts. July 10, 1990. Investigating the Validity of the Local Equilibrium Assumption at an Experimental Aquifer Restoration Site Using Laboratory-Scale Parameter Estimates. ASCE Specialty Conference: Environmental Engineering, Arlington, VA.
- C138. Harmon, T.C., L. Semprini, and P.V. Roberts. June 20, 1989. Sorption of Volatile Organics to Aquifer Solids at Field and Laboratory Scales. American Water Works Association Universities Forum, Los Angeles.
- C139. Harmon, T.C., W.P. Ball, and P.V. Roberts. June 20-24, 1988. A Comparison of the Physical Characteristics of Natural Aquifer Materials. Gordon Research Conference, Environmental Sciences: Water, New Hampshire. (poster)
- C140. Harmon, T.C., W.P. Ball, and P.V. Roberts. Dec. 1, 1987. Nonequilibrium Transport of Organic Contaminants in Groundwater. 79th Annual Meeting of the American Society of Agronomy, Crop Science Society of American and Soil Science Society of American, Atlanta, GA.
- Research Contracts and Grants**
- G1 Harmon, Thomas C. (PI), Observing and Predicting Freshwater Eutrophication-Algal Bloom Dynamics Using Local Hyperspectral Imaging, *National Science Foundation*. (\$395K August 1, 2009 - July 31, 2013).
- G2 Estrin, D. (Other), Harmon, Thomas C. (Co-PI), Center for Embedded Networked Sensing, *National Science Foundation*. (\$600K August 1, 2007 - July 31, 2013).
- G3 Bendikov (PI), Harmon, Thomas C. (Co-PI), Development of Agricultural Sensors Based on Conductive Polymers, *U.S.-Israel Bi-National Agricultural Research and Development (BARD) Fund*. (\$169K UCM July 1, 2007 - June 30, 2010).
- G4 Traina, Samuel Justin (PI), Harmon, Thomas C. (Co-PI), Conklin, Martha H (Co-PI), poday (Co-PI), Bales, Roger C (Co-PI), Technician Support: Phase 1: A Multi-purpose Environmental Analytical Laboratory at UC Merced, *National Science Foundation*. (\$225K December 2005 - December 2009).
- G5 Harmon, Thomas C. (PI), PASI: Pan-American Sensors for Environmental Observatories - An Interdisciplinary PASI, *National Science Foundation*. (\$97K August 1, 2008 - July 31, 2009).
- G6 Harmon, Thomas C. (PI), Bales, Roger C (Co-PI), Conklin, Martha H (Co-PI), Waters and Environmental Research Systems Network (WATERS), *National Science Foundation*. (\$45K July 1, 2008 - June 30, 2009).
- G7 Harmon, Thomas C. (PI), Potential of Commercially Available in-situ Sensors as a Tool to Monitor and Manage Nitrogen in Soils Irrigated with Dairy Manure Water, *Agriculturalists for Scientific Environmental Research (AFSER)*. (\$186K January 15, 2007 - January 14, 2009).
- G8 Bales, Roger C (PI), Harmon, Thomas C. (Co-PI), Observatory Design in the Mountain West: Scaling Measurements and Modeling in the San Joaquin Valley and Sierra Nevada, *National Science Foundation*. (\$250K October 1, 2006 - September 30, 2008).
- G9 Kaiser, W. (PI), Estrin, D. (Co-PI), Rundle, P. (Co-PI), Hamilton, M. (Co-PI), Harmon, Thomas C. (Co-PI), ITR: Networked Infomechanical Systems (NIMS), *National Science Foundation*. (\$140K UCM October 1, 2003 - September 30, 2008).
- G10 Harmon, Thomas C. (UCM PI), Automated-Minirhizotron and Arrayed Rhizosphere-Soil Sensors (A-MARSS): Designing wireless array technology to study mycorrhizal and soil ecology dynamics, *National Science Foundation*. (\$420K UCM October 1, 2004 - September 30, 2010).
- G11 Quinn (PI), Harmon, Thomas C. (Co-PI), Wetland drainage management technology development in support of San Joaquin River real-time water quality management, *California Department of Water Resources*. (\$199K September 1, 2006 - August 30, 2008).
- G12 Harmon, Thomas C. (PI), U.S.-Argentina Program Development Workshop: Pan American Sensors for Environmental Observatories (PASEO) Workshop, *National Science Foundation*. (\$47K June 1, 2007 - May 30, 2008).
- G13 Bryant, S. (PI), Lake, L. (Co-PI), Johns, R. (Co-PI), Harmon, Thomas C. (Co-PI), Origin of Scale-Dependent Dispersivity and Its Implications for Miscible Gas Flooding, *U.S. Department of Energy*. (\$142K UCM October 1, 2004 - September 30, 2007).
- G14 Estrin, D. (PI), Harmon, Thomas C. (Senior Personnel), Center for Embedded Networked Sensors (*National Science Foundation Science & Technology Center*). (\$600K (UCM) September 1, 2002 - July 31, 2007).
- G15 Bendikov (PI), Harmon, Thomas C. (Co-PI), Development of Agricultural Sensors Based on Conductive Polymers, *U.S.-Israel Bi-National Agricultural Research and Development (BARD) Fund*. (\$51K UCM October 1, 2005 - September 30, 2006).
- G16 Harmon, Thomas C. (PI), Quinn (Co-PI), Implementation of Wetland Adaptive Water Quality Management Strategies Under Real-Time Salinity TMDLs, *UC Salinity Drainage Program*. (\$60K September 1, 2005 - August 30, 2006).
- G17 Viney, Christopher (PI), Harmon, Thomas C. (Co-PI), Leppert, Valerie J (Co-PI), Colvin, Michael E (Co-PI), Implementing Student Excellence - A Unique Opportunity, *National Science Foundation*. (\$100K July 1, 2004 - December 31, 2005).
- G18 Harmon, Thomas C. (PI), Traina, Samuel Justin (Co-PI), Bales, Roger C (Co-PI), Estrin, D. (Co-PI), Kaiser, W. (Co-PI), Planning a Multiscale Network to Observe, Forecast and Manage a CLEANER California Water Cycle, *National Science Foundation*. (\$86K August 15, 2004 - August 14, 2005).

- G19 Harmon, Thomas C. (PI), Collaborative SGER: Investigation of Spatial and Temporal Patterns in the Concentrations of Redox-Active Chemical Species at a USGS NAWQA Cycle II Site, *National Science Foundation*. (**\$34K** March 1, 2004 - February 27, 2005).
- G20 Kaiser, W. (PI), Harmon, Thomas C. (Co-PI), Individualized, Scaleable, and Interactive Assessment and Instruction for Engineering Education, *National Science Foundation*. (**\$100K** July 1, 2003 - June 30, 2004).
- G21 Leppert, Valerie J (PI), Viney, Christopher (Co-PI), Harmon, Thomas C. (Co-PI), Wright, Jeffrey R (Co-PI), Engineering Projects in Community Service at UC Merced, *National Science Foundation*. (**\$120K** June 1, 2003 - May 30, 2004).
- G22 Harmon, Thomas C. (Co-PI), Hering, J. (PI), Geochemical Controls on Chromium Occurrence, Speciation, and Treatability in Groundwater, *American Water Works Associate Research Foundation (AWWARF)*. (**\$200K** March 1, 2001 - January 31, 2004).
- G23 Harmon, Thomas C. (Co-PI), Exposure Assessment at the Santa Susanna Field Laboratory, *Eastern Research Group* (subaward from *U.S. Department of Toxic Substances Control, DTSC*). (**\$350K** April 1, 2001 - September 30, 2003).
- G24 Harmon, Thomas C. (PI), Seed Grant to Establish Bioremediation Program in the University of California System, *UC Toxic Substances Teaching & Research Program*. (**\$50K** January 1, 2001 - December 31, 2001).
- G25 Harmon, Thomas C. (PI), Dracup (Co-PI), Stolzenbach (Co-PI), Jepson (Co-PI), Baker (Co-PI), Virtual Reality in the Environmental Engineering Curriculum, *National Science Foundation*. (**\$350K** June 1, 1997 - May 31, 2000).
- G26 Harmon, Thomas C. (PI), Cost-Benefit Analysis of Natural Gas-Fueled Soil Vapor Extraction for Remediation of Brownfields, *University Wide Energy Research Program*. (**\$16K** July 1, 1998 - June 30, 1999).
- G27 Harmon, Thomas C. (PI), Phase Equilibria and Mass Transfer Characteristics of Nonvolatile Organic Chemicals in Unsaturated Soils, *National Science Foundation CAREER Award*. (**\$293K** July 1, 1995 - June 30, 1999).
- G28 Harmon, Thomas C. (PI), A Bench-Scale Test to Determine the Feasibility of In Situ Thermal Desorption of Contaminated Soils Using Natural Gas Combustion, *UCLA Academic Senate*. (**\$4K** July 1, 1997 - June 30, 1998).
- G29 Harmon, Thomas C. (PI), Yeh (Co-PI), Dhir (Co-PI), Remediation Modeling and Management from Contamination in the Unsaturated Soil Zone, *UCLA Center for Environmental Risk Reduction*. (**\$54K** July 1, 1997 - June 30, 1998).
- G30 Chrysikopoulos, C. (PI), Harmon, Thomas C. (Co-PI), Dissolution of NAPL Pools in Heterogeneous Porous Media, *U.S. Environmental Protection Agency*. (**\$286K** July 1, 1995 - June 30, 1998).
- G31 Harmon, Thomas C. (PI), In Situ Thermal Desorption of Nonvolatile Organic Contaminants from Soils, *Southern California Gas Company*. (**\$71K** September 1, 1996 - August 31, 1997).
- G32 Harmon, Thomas C. (Co-PI), DOD Environmental Scholarships, Fellowships and Grants Program, U.S. Department of Defense. (**\$946K** October 1, 1995 - September 30, 1996).
- G33 Harmon, Thomas C. (PI), Enhancing the Bioavailability of Organic Contaminants in Soils, *UCLA Academic Senate*. (**\$3K** July 1, 1995 - June 30, 1996).
- G34 Harmon, Thomas C. (PI), Optimization of Groundwater Remediation Strategies in Aquifers Affected by Slow Desorption Processes, *UC Water Resources Center*. (**\$70K** July 1, 1993 - June 30, 1996).
- G35 Harmon, Thomas C. (PI), Improving the Efficiency of Ex Situ Bioventing of Petroleum Hydrocarbon Contaminated Soils, *Navy Summer Faculty Fellows Program*. (**\$11.5K** June 12, 1995 - August 18, 1995).
- G36 Harmon, Thomas C. (PI), Developing and Interactive Hazardous Waste Site Investigation Database for Course Project, *UCLA Office of Instructional Development*. (**\$5.5K** July 1, 1994 - June 30, 1995).
- G37 Harmon, Thomas C. (PI), Supercritical Fluid Extraction of Nonvolatile Organic Chemicals from Soils, *UCLA Academic Senate*. (**\$3K** July 1, 1994 - June 30, 1995).
- G38 Harmon, Thomas C. (PI), Determination of Sorption Parameters for Petroleum Hydrocarbons and Unsaturated Soils, *U.S. Naval Facilities Engineering Service Center*. (**\$25K** October 1, 1994 - April 1, 1995).
- G39 Harmon, Thomas C. (PI), The Behavior of Methanol in the Subsurface Environment, *University-Wide Energy Research Group*. (**\$19K**, July 1, 1993 - June 30, 1994).

Current doctoral students and postdoctoral scholars

Sandra Villamizar Amaya, doctoral student
 Henry Pai, doctoral student
 Jingjing Zhu, doctoral student (co-adviser)
 Diganta Adhikari, doctoral student

Former doctoral students and their current positions:

Dung Kong (1996) Senior Engineer, Los Angeles County Sanitation Districts
 Dehui Yu (1999) Futures Analyst, Toronto, Canada
 Brian Dela Barre (1999) Office Manager, HDR Inc. Consulting Engineers, Reno, NV.
 Crist Khachikian (2000), Professor, California State University-Los Angeles
 Glenn Burks (2000) ERM Consultants, Irvine, CA
 Antonella Sciortino (2001) Associate Professor, California State University-Long Beach
 Priti Brahma (2001), Program Analyst, NOAA, Washington, D.C.

Moises Carvalho (2003) Project Engineer, ERM Consultants, San Francisco, CA.
Jose Saez (2004) Associate Professor, Loyola Marymount University, Los Angeles, CA
Jason Fisher, (2005) Hydrologist, US Geological Survey
Massood Hosseini (2005) Project Manager, Sempra Energy, Los Angeles
Yeonjeong Park (2007) Postdoctoral scholar, UC Berkeley

Courses Taught at UCLA

CEE 155 Water Quality Control Processes in Water and Wastewater Treatment.
CEE 164 Hazardous Waste Site Investigation and Remediation.
CEE 265A Mass Transfer in Environmental Systems.
CEE 265B Soil and Groundwater Remediation

Courses Taught at UCM

EnvE 110 Hydrology and Climate (co-taught)
EnvE 10 The Environment in Crisis
Engr 98 Freshman Seminar: You Are What You Drink
EnvE 20 Introduction to Environmental Science & Engineering
EnvE 170/ES 270 Fate and Transport of Contaminants in Environmental Systems
EnvE 112/ES 212 Subsurface Hydrology
Engr 97/197 Service Learning: Wetlands Project
EnvE 183 Field Methods in Subsurface Hydrology
ES 292 Topics in Environmental Systems: Stream Ecology
Engr 120 Fluid Mechanics
EnvE 190 Environmental Engineering Capstone Design

University Service

Co-Chair, Executive Vice-Chancellor and Provost Search Advisory Committee, 2011-12
Member, Digital Assessment Working Group, 2011-12
Acting Dean, School of Engineering, Jan 2010-April 2010
School of Engineering Faculty Assessment Officer, 2008-2011
Vice-Chair, Committee on Academic Personnel, 2009-2011
Member, Committee on Academic Personnel, 2008-2009
Chair, School of Engineering, 2008-2010
Chair, School of Engineering Academic Personnel Committee, 2006-2008
Vice-Chair, Academic Senate, 2006-2007
Member, Sierra Nevada Research Institute Advisory Committee, 2006-present
Chair, Environmental Systems Graduate Program, 2004-2009
Chair, Environmental Engineering Major, 2006-2008
Member, Computer Science & Engineering Faculty Search Committee, 2006-2008
Member, Environmental Systems (Air Resources) Faculty Search Committee, 2004-2006
Member, Laboratory Safety Administrative Advisory Committee, 2004-2008
Chair, Graduate & Research Council, 2005-06
Member, Graduate & Research Council, 2003-2004
Chair, Graduate & Research Council, 2005-2006
Chair, Computer Science & Engineering Faculty Search, 2004-2006

Member, Natural Sciences (Applied Math) Faculty Search Committee (2004-2005)
Chair, Environmental Engineering (Remote Sensing) Faculty Search Committee, 2003-04
Member, Environmental Engineering (Microbiology) Faculty Search Committee, 2003-04
Member, Facilities Engineer Search Committee, 2003-04
Member, Classroom Information Technology Committee, 2003-2006

UC Systemwide:

Member, UC (systemwide) Committee on Faculty Welfare, 2005-2006
Director, Contaminant Transport Applications, NSF Center for Embedded Networked Sensing (housed at UCLA: cens.ucla.edu)
Member, Coordinating Council on Graduate Affairs (CCGA), 2003-2004; 2005-2006
Executive Committee Member, UC Toxic Substances Research & Training Program, 2003-2006
Member, California Sea Grant 15 Year Review Committee, 2003-04
Associate Director, Southern Campuses, UC Toxic Substances Research & Training Program, 2002-2003

State, National, and International Committees and Service:

Ad hoc service as reviewer for multiple scholarly journals and funding agencies
Member, NSF WATERS Network Conceptual Design Committee 2006-2010
Co-Organizer NSF Pan-American Workshop on Sensors for Environmental Observations 2006-2007
Guest Editor, Environmental Engineering Science Special Issue on Environmental Sensor Networks, 2006.
Co-Chair, Sensors and Sensor Networks Committee, CLEANER National Project Office, July 2005-June 2006.
Session Organizer, Case Studies in Environmental Observatory Planning and Deployments, American Geophysical Union/Joint Assembly Spring National Meeting, Baltimore, MD May 23-26, 2006.
Session Organizer, NSF Sensors for Environmental Observatories Workshop, Seattle, Nov 30-Dec 2, 2004.
National Research Council Committee on Contaminant Source Zone Assessment, 2002-2004.
Organizer, NSF Workshop on Soil Cyberinfrastructure, Idyllwild, CA Feb. 18-20, 2004.
Co-Convener, Geophysical Characterization and Embedded Networked Sensing of Biogeochemical Processes, American Geophysical Union Fall Meeting December 13-18, 2004.
National Science Foundation Workgroup on Environmental Cyberinfrastructure, Scripps Oceanographic Institute, La Jolla, CA, August 12-14, 2003.