

MEM Bibliography

1. **Abba, F., Orlandi, and A. Rondelli** 1898. Über die filtrationskraft des bodens und die fortschwemmung von bakterien durch das grundwasser *Z. Hyg. Infekt. Krankh.* **31**:66-84.
2. **Abbaszadegan, M., M. S. Huber, C. P. Gerba, and I. L. Pepper** 1993. Detection of Enteroviruses in Groundwater with the Polymerase Chain-Reaction *Appl. Environ. Microbiol.* **59**:1318-1324.
3. **Absolom, D. R., F. V. Lamberti, Z. Policova, W. Zingg, C. J. van Oss, and A. W. Neumann** 1983. Surface thermodynamics of bacterial adhesion. *Appl. Environ. Microbiol.* **46**:90-97.
4. **Albinger, O., B. K. Biesemeyer, R. G. Arnold, and B. E. Logan** 1994. Effect of bacterial heterogeneity on adhesion to uniform collectors by monoclonal populations *FEMS Microbiol. Lett.* **124**:321.
5. **Albrechtsen, H. J., and A. Winding** 1992. Microbial Biomass and Activity in Subsurface Sediments from Vejen, Denmark *Microb. Ecol.* **23**:303-317.
6. **Ammons, D., J. Rampersad, and G. E. Fox** 1998. A genomically modified marker strain of *Escherichia coli* *Curr. Microbiol.* **37**:341-346.
7. **Badawy, A. S., J. B. Rose, and C. P. Gerba** 1990. Comparative Survival of Enteric Viruses and Coliphage on Sewage Irrigated Grass *J. Environ. Sci. Health Part A-Environ. Sci. Eng. Toxic Hazard. Subst. Control.* **25**:937-952.
8. **Bales, R. C., C. P. Gerba, G. H. Grondin, and S. L. Jensen** 1989. Bacteriophage Transport in Sandy Soil and Fractured Tuff *Appl. Environ. Microbiol.* **55**:2061-2067.
9. **Bales, R. C., S. R. Hinkle, T. W. Kroeger, K. Stocking, and C. P. Gerba** 1991. Bacteriophage Adsorption During Transport through Porous-Media - Chemical Perturbations and Reversibility *Environ. Sci. Technol.* **25**:2088-2095.
10. **Bales, R. C., S. M. Li, K. M. Maguire, M. T. Yahya, and C. P. Gerba** 1993. MS-2 and Poliovirus Transport in Porous-Media - Hydrophobic Effects and Chemical Perturbations *Water Resour. Res.* **29**:957-963.
11. **Bales, R. C., S. M. Li, K. M. Maguire, M. T. Yahya, C. P. Gerba, and R. W. Harvey** 1995. Virus and Bacteria Transport in a Sandy Aquifer, Cape-Cod, Ma *Ground Water.* **33**:653-661.
12. **Bales, R. C., S. M. Li, T. C. J. Yeh, M. E. Lenczewski, and C. P. Gerba** 1997. Bacteriophage and microsphere transport in saturated porous media: Forced-gradient experiment at Borden, Ontario *Water Resour. Res.* **33**:639-648.
13. **Barton, J. W., and R. M. Ford** 1995. Determination of Effective Transport-Coefficients for Bacterial Migration in Sand Columns *Appl. Environ. Microbiol.* **61**:3329-3335.
14. **Baveye, P., P. Vandevivere, B. L. Hoyle, P. C. DeLeo, and D. S. de Lozada** 1998. Environmental impact and mechanisms of the biological clogging of saturated soils and aquifer materials *Crit. Rev. Environ. Sci. Technol.* **28**:123-191.
15. **Baygents, J. C., J. R. Glynn, O. Albinger, B. K. Biesemeyer, K. L. Ogden, and R. G. Arnold** 1998. Variation of surface charge density in monoclonal bacterial populations: Implications for transport through porous media *Environ. Sci. Technol.* **32**:1596-1603.

16. **Becker, M. W., P. W. Reimus, and P. Vilks** 1999. Transport and attenuation of carboxylate-modified latex microspheres in fractured rock laboratory and field tracer tests *Ground Water*. **37**:387-395.
17. **Beeder, J., R. K. Nilsen, T. Thorstenson, and T. Torsvik** 1996. Penetration of sulfate reducers through a porous North Sea oil reservoir *Appl. Environ. Microbiol.* **62**:3551-3553.
18. **Bengtsson, G., and R. Lindqvist** 1995. Transport of Soil Bacteria Controlled by Density-Dependent Sorption Kinetics *Water Resour. Res.* **31**:1247-1256.
19. **Beres, M., A. Green, P. Huggenberger, and H. Horstmeyer** 1995. Mapping the Architecture of Glaciofluvial Sediments with 3- Dimensional Georadar *Geology*. **23**:1087-1090.
20. **Beres, M., P. Huggenberger, A. G. Green, and H. Horstmeyer** 1999. Using two- and three-dimensional georadar methods to characterize glaciofluvial architecture *Sediment. Geol.* **129**:1-24.
21. **Bitton, G., and R. W. Harvey** 1992. Transport of pathogens through soils and aquifers. In R. Michell (ed.), *Environ. Microbiol.* Wiley-Liss, New York.
22. **Blanchard, D. C., and D. L. Syzdek** 1974. Bubble tube: apparatus for determining rate of collection of bacteria by a bubble rising in water. *Limnol. Oceanogr.* **23**:133-138.
23. **Boadu, F. K.** 2000. Hydraulic conductivity of soils from grain-size distribution: New models *J. Geotech. Geoenviron. Eng.* **126**:739-746.
24. **Bolster, C. H., G. M. Hornberger, A. L. Mills, and J. L. Wilson** 1998. A method for calculating bacterial deposition coefficient using the fraction of bacteria recovered from laboratory columns *Environ. Sci. Technol.* **32**:1329-1332.
25. **Bolster, C. H., A. L. Mills, G. M. Hornberger, and J. S. Herman** 1999. Spatial distribution of deposited bacteria following miscible displacement experiments in intact cores *Water Resour. Res.* **35**:1797-1807.
26. **Bos, R., H. C. van der Mei, and H. J. Busscher** 1999. Physico-chemistry of initial microbial adhesive interactions - its mechanisms and methods for study *Fems Microbiol. Rev.* **23**:179-230.
27. **Bouwer, H.** 1978. *Groundwater Hydrology.* McGraw Hill, New York.
28. **Brush, C. F., W. C. Ghiorse, L. J. Anguish, J. Y. Parlange, and H. G. Grimes** 1999. Transport of *Cryptosporidium parvum* oocysts through saturated columns *J. Environ. Qual.* **28**:809-815.
29. **Burlage, R. S., Z. K. Yang, and T. Mehlhorn** 1996. A transposon for green fluorescent protein transcriptional fusions: Application for bacterial transport experiments *Gene.* **173**:53-58.
30. **Camesano, T. A., and B. E. Logan** 1998. Influence of fluid velocity and cell concentration on the transport of motile and nonmotile bacteria in porous media *Environ. Sci. Technol.* **32**:1699-1708.
31. **Camesano, T. A., M. J. Natan, and B. E. Logan** 2000. Observation of changes in bacterial cell morphology using tapping mode atomic force microscopy *Langmuir.* **16**:4563-4572.
32. **Camper, A. K., J. T. Hayes, P. J. Sturman, W. L. Jones, and A. B. Cunningham** 1993. Effects of Motility and Adsorption Rate Coefficient on

- Transport of Bacteria through Saturated Porous-Media Appl. Environ. Microbiol. **59**:3455-3462.
33. **Chalfie, M., Y. Tu, G. Euskirchen, W. W. Ward, and D. C. Prasher** 1994. Green Fluorescent Protein as a Marker for Gene-Expression Science. **263**:802-805.
 34. **Champ, D. R., and J. Schroeter** 1988. Bacterial Transport in Fractured Rock - a Field-Scale Tracer Test at the Chalk River Nuclear Laboratories Water Sci. Technol. **20**:81-87.
 35. **Chang, P. L., and T. F. Yen** 1985. Interaction of *Pseudomonas putida* ATCC 12633 and bacteriophage gh-1 in Berea sandstone rock. Appl. Environ. Microbiol. **59**.
 36. **Chen, J., and B. Koopman** 1997. Effect of fluorochromes on bacterial surface properties and interaction with granular media Appl. Environ. Microbiol. **63**:3941-3945.
 37. **Colwell, F. S., G. J. Stormberg, T. J. Phelps, S. A. Birnbaum, J. McKinley, S. A. Rawson, C. Veverka, S. Goodwin, P. E. Long, B. F. Russell, T. Garland, D. Thompson, P. Skinner, and S. Grover** 1992. Innovative Techniques for Collection of Saturated and Unsaturated Subsurface Basalts and Sediments for Microbiological Characterization J. Microbiol. Methods. **15**:279-292.
 38. **Corapcioglu, M. Y., and S. H. Kim** 1995. Modeling Facilitated Contaminant Transport by Mobile Bacteria Water Resour. Res. **31**:2639-2647.
 39. **Cusack, F., S. Singh, C. McCarthy, J. Grieco, M. Derocco, D. Nguyen, H. Lappinscott, and J. W. Costerton** 1992. Enhanced Oil-Recovery - 3-Dimensional Sandpack Simulation of Ultramicrobacteria Resuscitation in Reservoir Formation J. Gen. Microbiol. **138**:647-655.
 40. **Dabros, T., and T. G. M. van de Ven** 1987. Deposition of latex particles on glass surfaces in an impinging jet. Physical Chemical Hydrodynamics. **8**:161-172.
 41. **Daniell, T. J., M. L. Davy, and R. J. Smith** 2000. Development of a genetically modified bacteriophage for use in tracing sources of pollution J. Appl. Microbiol. **88**:860-869.
 42. **Deflaun, M. F., M. E. Fuller, P. Zhang, W. P. Johnson, B. J. Mailloux, W. E. Holben, W. P. Kovacic, D. L. Balkwill, and T. C. Onstott** in review. Comparison of innovative methods for monitoring bacterial transport.
 43. **DeFlaun, M. F., C. J. Murray, W. Holben, T. Scheibe, A. Mills, T. Ginn, T. Griffin, E. Majer, and J. L. Wilson** 1997. Preliminary observations on bacterial transport in a coastal plain aquifer Fems Microbiol. Rev. **20**:473-487.
 44. **DeFlaun, M. F., S. R. Oppenheimer, S. Streger, C. W. Condee, and M. Fletcher** 1999. Alterations in adhesion, transport, and membrane characteristics in an adhesion-deficient pseudomonad Appl. Environ. Microbiol. **65**:759-765.
 45. **DeLeo, P. C., and P. Baveye** 1996. Enumeration and biomass estimation of bacteria in aquifer microcosm studies by flow cytometry Appl. Environ. Microbiol. **62**:4580-4586.
 46. **Deshpande, P. A., and D. R. Shonnard** 2000. An improved spectrophotometric method to study the transport, attachment, and breakthrough of bacteria through porous media Appl. Environ. Microbiol. **66**:763-768.

47. **Deshpande, P. A., and D. R. Shonnard** 1999. Modeling the effects of systematic variation in ionic strength on the attachment kinetics of *Pseudomonas fluorescens* UPER-1 in saturated sand columns *Water Resour. Res.* **35**:1619-1627.
48. **Dong, H. L., T. C. Onstott, M. F. DeFlaun, M. E. Fuller, K. M. Gillespie, and J. K. Fredrickson** 1999. Development of radiographic and microscopic techniques for the characterization of bacterial transport in intact sediment cores from Oyster, Virginia *J. Microbiol. Methods.* **37**:139-154.
49. **Dowd, S. E., S. D. Pillai, S. Y. Wang, and M. Y. Corapcioglu** 1998. Delineating the specific influence of virus isoelectric point and size on virus adsorption and transport through sandy soils *Appl. Environ. Microbiol.* **64**:405-410.
50. **Dubois, S. M., B. E. Moore, and S. P. Sagik** 1976. Poliovirus survival and movement in a sandy forest soil. *Appl. Environ. Microbiol.* **31**:536-543.
51. **Duffy, K. J., P. T. Cummings, and R. M. Ford** 1995. Random-Walk Calculations for Bacterial Migration in Porous- Media *Biophys. J.* **68**:800-806.
52. **Eisenmann, H., H. Harms, R. Meckenstock, E. I. Meyer, and A. J. B. Zehnder** 1998. Grazing of a *Tetrahymena* sp. on adhered bacteria in percolated columns monitored by in situ hybridization with fluorescent oligonucleotide probes *Appl. Environ. Microbiol.* **64**:1264-1269.
53. **Elowitz, M. B., M. G. Surette, P. E. Wolf, J. Stock, and S. Leibler** 1997. Photoactivation turns green fluorescent protein red *Curr. Biol.* **7**:809-812.
54. **Fang, Y., and B. E. Logan** 1999. Bacterial transport in gas-sparged porous medium *J. Environ. Eng.-ASCE.* **125**:668-673.
55. **Fischer, U., R. Schulin, M. Keller, and F. Stauffer** 1996. Experimental and numerical investigation of soil vapor extraction *Water Resour. Res.* **32**:3413-3427.
56. **Fontes, D. E., A. L. Mills, G. M. Hornberger, and J. S. Herman** 1991. Physical and Chemical Factors Influencing Transport of Microorganisms through Porous-Media *Appl. Environ. Microbiol.* **57**:2473-2481.
57. **Fortineau, N., P. Trieu-Cuot, O. Gaillot, E. Pellegrini, P. Berche, and J. L. Gaillard** 2000. Optimization of green fluorescent protein expression vectors for in vitro and in vivo detection of *Listeria monocytogenes* *Res. Microbiol.* **151**:353-360.
58. **Freeze, R. A., and J. A. Cherry** 1979. *Groundwater*. Prentice Hall, Englewood Cliffs, NJ.
59. **Fuller, M. E., S. H. Steger, R. K. Rothmel, B. J. Mailloux, J. A. Hall, T. C. Onstott, J. K. Fredrickson, D. L. Balkwill, and M. F. DeFlaun** 2000. Development of a Vital Fluorescent Staining Method for Monitoring Bacterial Transport in Subsurface Environments *Appl. Environ. Microbiol.* **66**:4486-4496.
60. **Gallop, P. M., M. A. Paz, E. Henson, and S. A. Latt** 1984. Dynamic approaches to the delivery of reporter reagents into living cells. *Biotechniques.* **1**:32-36.
61. **Gannon, J., Y. H. Tan, P. Baveye, and M. Alexander** 1991. Effect of Sodium-Chloride on Transport of Bacteria in a Saturated Aquifer Material *Appl. Environ. Microbiol.* **57**:2497-2501.
62. **Gannon, J. T., V. B. Manilal, and M. Alexander** 1991. Relationship between Cell-Surface Properties and Transport of Bacteria through Soil *Appl. Environ. Microbiol.* **57**:190-193.
63. **Garabedian, S. P., D. R. Leblanc, L. W. Gelhar, and M. A. Celia** 1991. Large-Scale Natural Gradient Tracer Test in Sand and Gravel, Cape-Cod, Massachusetts

- .2. Analysis of Spatial Moments for a Nonreactive Tracer Water Resour. Res. **27**:911-924.
64. **Glynn, J. R., B. M. Belongia, R. G. Arnold, K. L. Ogden, and J. C. Baygents** 1998. Capillary electrophoresis measurements of electrophoretic mobility for colloidal particles of biological interest *Appl. Environ. Microbiol.* **64**:2572-2577.
 65. **Goltz, M. N., and P. V. Roberts** 1987. Using the Method of Moments to Analyze 3-Dimensional Diffusion- Limited Solute Transport from Temporal and Spatial Perspectives *Water Resour. Res.* **23**:1575-1585.
 66. **Graham, D. W., D. G. Korich, R. P. Leblanc, N. A. Sinclair, and R. G. Arnold** 1992. Applications of a Colorimetric Plate Assay for Soluble Methane Monooxygenase Activity *Appl. Environ. Microbiol.* **58**:2231-2236.
 67. **Grasso, D., B. F. Smets, K. A. Strevett, B. D. Machinist, C. J. VanOss, R. F. Giese, and W. Wu** 1996. Impact of physiological state on surface thermodynamics and adhesion of *Pseudomonas aeruginosa* *Environ. Sci. Technol.* **30**:3604-3608.
 68. **Groffman, P. M., A. J. Gold, and G. Howard** 1995. Hydrologic Tracer Effects on Soil Microbial Activities *Soil Sci. Soc. Am. J.* **59**:478-481.
 69. **Gross, M. J., O. Albinger, D. G. Jewett, B. E. Logan, R. C. Bales, and R. G. Arnold** 1995. Measurement of Bacterial Collision Efficiencies in Porous-Media *Water Res.* **29**:1151-1158.
 70. **Gross, M. J., and B. E. Logan** 1995. Influence of Different Chemical Treatments on Transport of *Alcaligenes Paradoxus* in Porous-Media *Appl. Environ. Microbiol.* **61**:1750-1756.
 71. **Guimares, V. F., I. V. Cruz, A. N. Hagler, L. C. Mendonca-Hagler, and J. D. van Elsas** 1997. Transport of a genetically modified *Pseudomonas fluorescens* and its parent strain through undisturbed tropical soil cores *Appl. Soil Ecol.* **7**:41-50.
 72. **Harms, H., and T. N. P. Bosma** 1997. Mass transfer limitation of microbial growth and pollutant degradation *J. Ind. Microbiol. Biotechnol.* **18**:97-105.
 73. **Harms, H., and A. J. B. Zehnder** 1994. Influence of Substrate Diffusion on Degradation of Dibenzofuran and 3-Chlorodibenzofuran by Attached and Suspended Bacteria *Appl. Environ. Microbiol.* **60**:2736-2745.
 74. **Hart, A., and C. Edwards** 1987. Buoyant Density-Fluctuations During the Cell-Cycle of *Bacillus- Subtilis* *Arch. Microbiol.* **147**:68-72.
 75. **Harter, T., S. Wagner, and E. R. Atwill** 2000. Colloid transport and filtration of *Cryptosporidium parvum* in sandy soils and aquifer sediments *Environ. Sci. Technol.* **34**:62-70.
 76. **Harvey, R. W.** 1991. Parameters involved in modeling movement of bacteria in groundwater., p. 89-114. *In* C. J. Hurst (ed.), *Modeling the Environmental Fate of Microorganisms*. American Society for Microbiology Press, Washington.
 77. **Harvey, R. W., and S. P. Garabedian** 1991. Use of Colloid Filtration Theory in Modeling Movement of Bacteria through a Contaminated Sandy Aquifer *Environ. Sci. Technol.* **25**:178-185.
 78. **Harvey, R. W., and L. H. George** 1987. Growth Determinations for Unattached Bacteria in a Contaminated Aquifer *Appl. Environ. Microbiol.* **53**:2992-2996.
 79. **Harvey, R. W., L. H. George, R. L. Smith, and D. R. Leblanc** 1989. Transport of Microspheres and Indigenous Bacteria through a Sandy Aquifer - Results of

Natural-Gradient and Forced-Gradient Tracer Experiments Environ. Sci. Technol. **23**:51-56.

80. **Harvey, R. W., N. E. Kinner, A. Bunn, D. Macdonald, and D. Metge** 1995. Transport Behavior of Groundwater Protozoa and Protozoan-Sized Microspheres in Sandy Aquifer Sediments Appl. Environ. Microbiol. **61**:209-217.
81. **Harvey, R. W., N. E. Kinner, D. Macdonald, D. W. Metge, and A. Bunn** 1993. Role of Physical Heterogeneity in the Interpretation of Small- Scale Laboratory and Field Observations of Bacteria, Microbial- Sized Microsphere, and Bromide Transport through Aquifer Sediments Water Resour. Res. **29**:2713-2721.
82. **Harvey, R. W., N. Mayberry, N. E. Kinner, D. W. Metge, and G. Novarino** in preparation. Effect of growth conditions and staining procedure upon the subsurface transport behavior of a groundwater protist. Appl. Environ. Microbiol.
83. **Harvey, R. W., D. W. Metge, N. Kinner, and N. Mayberry** 1997. Physiological considerations in applying laboratory-determined buoyant densities to predictions of bacterial and protozoan transport in groundwater: Results of in-situ and laboratory tests Environ. Sci. Technol. **31**:289-295.
84. **Heise, S., and G. Gust** 1999. Influence of the physiological status of bacteria on their transport into permeable sediments Mar. Ecol.-Prog. Ser. **190**:141-153.
85. **Heitzer, A., B. Applegate, S. Kehrmeier, H. Pinkart, O. F. Webb, T. J. Phelps, D. C. White, and G. S. Saylor** 1998. Physiological considerations of environmental applications of lux reporter fusions J. Microbiol. Methods. **33**:45-57.
86. **Hekman, W. E., C. E. Heijnen, S. Burgers, J. A. Vanveen, and J. D. Vanelsas** 1995. Transport of Bacterial Inoculants through Intact Cores of 2 Different Soils as Affected by Water Percolation and the Presence of Wheat Plants FEMS Microbiol. Ecol. **16**:143-157.
87. **Hendry, M. J., J. R. Lawrence, and P. Maloszewski** 1997. The role of sorption in the transport of Klebsiella oxytoca through saturated silica sand Ground Water. **35**:574-584.
88. **Hess, K. M., S. H. Wolf, and M. A. Celia** 1992. Large-Scale Natural Gradient Tracer Test in Sand and Gravel, Cape-Cod, Massachusetts .3. Hydraulic Conductivity Variability and Calculated Macrodispersivities Water Resour. Res. **28**:2011-2027.
89. **Hobbie, J. E., R. J. Daley, and S. Jasper** 1977. Use of Nuclepore filters for counting bacteria by fluorescence microscopy. Appl. Environ. Microbiol. **33**:1225-1228.
90. **Holben, W. E., and P. H. Ostrom** 2000. Monitoring Bacterial Transport by Stable Isotope Enrichment of Cells Appl. Environ. Microbiol. **66**:4935-4939.
91. **Hornberger, G. M., A. L. Mills, and J. S. Herman** 1992. Bacterial Transport in Porous-Media - Evaluation of a Model Using Laboratory Observations Water Resour. Res. **28**:915-923.
92. **Huggenberger, P., E. Meier, and A. Pugin** 1994. Ground-Probing Radar as a Tool for Heterogeneity Estimation in Gravel Deposits - Advances in Data-Processing and Facies Analysis J. Appl. Geophys. **31**:171-184.
93. **Hurst, C. J. e.** 1991. Modeling the Environmental Fate of Microorganisms. ASM Press, Washington.

94. **Huysman, F., and W. Verstraete** 1993. Water-Facilitated Transport of Bacteria in Unsaturated Soil Columns - Influence of Cell-Surface Hydrophobicity and Soil Properties *Soil Biol. Biochem.* **25**:83-90.
95. **Illangasekare, T. H., E. J. Armbruster, and D. N. Yates** 1995. Non-Aqueous-Phase Fluids in Heterogeneous Aquifers - Experimental-Study *J. Environ. Eng.-ASCE.* **121**:571-579.
96. **Jang, L. K., P. W. Chang, J. E. Findley, and T. F. Yen** 1983. Selection of Bacteria with Favorable Transport-Properties through Porous Rock for the Application of Microbial-Enhanced Oil-Recovery *Appl. Environ. Microbiol.* **46**:1066-1072.
97. **Jaspers, M. C. M., S. Totevova, K. Demnerova, H. Harms, and J. R. van der Meer** 1999. The use of whole-cell living biosensors to determine the bioavailability of pollutants to microorganisms, p. 153-158. *In* P. Baveye, J. C. Block, and V. V. Goncharuk (eds), *Bioavailability of organic xenobiotics in the environment*. Kluwer Academic Publishers, London.
98. **Jenkins, M. B., and L. W. Lion** 1993. Mobile Bacteria and Transport of Polynuclear Aromatic- Hydrocarbons in Porous-Media *Appl. Environ. Microbiol.* **59**:3306-3313.
99. **Jenneman, G. E., M. J. McInerney, M. E. Crocker, and R. M. Knapp** 1986. Effect of Sterilization by Dry Heat or Autoclaving on Bacterial Penetration through Berea Sandstone *Appl. Environ. Microbiol.* **51**:39-43.
100. **Jenneman, G. E., M. J. McInerney, and R. M. Knapp** 1985. Microbial Penetration through Nutrient-Saturated Berea Sandstone *Appl. Environ. Microbiol.* **50**:383-391.
101. **Jewett, D. G., T. A. Hilbert, B. E. Logan, R. G. Arnold, and R. C. Bales** 1995. Bacterial Transport in Laboratory Columns and Filters - Influence of Tonic Strength and Ph on Collision Efficiency *Water Res.* **29**:1673-1680.
102. **Jewett, D. G., B. E. Logan, R. G. Arnold, and R. C. Bales** 1999. Transport of *Pseudomonas fluorescens* strain P17 through quartz sand columns as a function of water content *J. Contam. Hydrol.* **36**:73-89.
103. **Jin, Y., Y. J. Chu, and Y. S. Li** 2000. Virus removal and transport in saturated and unsaturated sand columns *J. Contam. Hydrol.* **43**:111-128.
104. **Jin, Y., M. V. Yates, S. S. Thompson, and W. A. Jury** 1997. Sorption of viruses during flow through saturated sand columns *Environ. Sci. Technol.* **31**:548-555.
105. **Johnson, M. J.** 1990. Masters of Science. University of New Hampshire.
106. **Johnson, T. E., and D. K. Creamer** 1994. Physical and Mathematical-Modeling of Diesel Fuel Liquid and Vapor Movement in Porous-Media Ground Water. **32**:551-560.
107. **Johnson, W. P., K. A. Blue, B. E. Logan, and R. G. Arnold** 1995. Modeling Bacterial Detachment During Transport through Porous- Media as a Residence-Time-Dependent Process *Water Resour. Res.* **31**:2649-2658.
108. **Johnson, W. P., and B. E. Logan** 1996. Enhanced transport of bacteria in porous media by sediment- phase and aqueous-phase natural organic matter *Water Res.* **30**:923-931.
109. **Johnson, W. P., P. Zhang, M. E. Fuller, T. D. Scheibe, B. J. Mailloux, T. C. Onstott, M. F. Deflaun, S. S. Hubbard, J. Radtke, W. P. Kovacik, and W.**

- Holben** 2001. Ferrographic Tracking of Bacterial Transport in the Field at the Narrow Channel Focus Area, Oyster, VA Environ. Sci. Technol. **35**:182-191.
110. **Jucker, B. A., H. Harms, S. J. Hug, and A. J. B. Zehnder** 1997. Adsorption of bacterial surface polysaccharides on mineral oxides is mediated by hydrogen bonds Colloid Surf. B-Biointerfaces. **9**:331-343.
 111. **Jucker, B. A., H. Harms, and A. J. B. Zehnder** 1996. Adhesion of the positively charged bacterium *Stenotrophomonas (Xanthomonas) maltophilia* 70401 to glass and teflon J. Bacteriol. **178**:5472-5479.
 112. **Jucker, B. A., H. Harms, and A. J. B. Zehnder** 1998. Polymer interactions between five gram-negative bacteria and glass investigated using LPS micelles and vesicles as model systems Colloid Surf. B-Biointerfaces. **11**:33-45.
 113. **Jucker, B. A., A. J. B. Zehnder, and H. Harms** 1998. Quantification of polymer interactions in bacterial adhesion Environ. Sci. Technol. **32**:2909-2915.
 114. **Karatani, H., T. Wilson, and J. W. Hastings** 1992. A Blue Fluorescent Protein from a Yellow-Emitting Luminous Bacterium Photochem. Photobiol. **55**:293-299.
 115. **Katz, Y., and H. Gvirtzman** 2000. Capture and cleanup of a migrating VOC plume by the in-well vapor stripping: a sand tank experiment J. Contam. Hydrol. **43**:25-44.
 116. **Kemp, J. S., E. Paterson, S. M. Gammack, M. S. Cresser, and K. Killham** 1992. Leaching of Genetically Modified *Pseudomonas-Fluorescens* through Organic Soils - Influence of Temperature, Soil-Ph, and Roots Biol. Fertil. Soils. **13**:218-224.
 117. **Kim, S. H., and M. Y. Corapcioglu** 1996. A kinetic approach to modeling mobile bacteria-facilitated groundwater contaminant transport Water Resour. Res. **32**:321-331.
 118. **Kinner, N. E., R. W. Harvey, and M. KazmierkiewiczTabaka** 1997. Effect of flagellates on free-living bacterial abundance in an organically contaminated aquifer Fems Microbiol. Rev. **20**:249-259.
 119. **Kinoshita, T., R. C. Bales, K. M. Maguire, and C. P. Gerba** 1993. Effect of Ph on Bacteriophage Transport through Sandy Soils J. Contam. Hydrol. **14**:55-70.
 120. **Kinoshita, T., R. C. Bales, M. T. Yahya, and C. P. Gerba** 1993. Bacteria Transport in a Porous-Medium - Retention of *Bacillus* and *Pseudomonas* on Silica Surfaces Water Res. **27**:1295-1301.
 121. **Kovacik, W. P., and W. E. Holben** submitted. Whole-cell quantitative PCR method to monitor subsurface bacterial transport. Appl. Environ. Microbiol.
 122. **Krumme, M. L., R. L. Smith, J. Egestorff, S. M. Thiem, J. M. Tiedje, K. N. Timmis, and D. F. Dwyer** 1994. Behavior of Pollutant-Degrading Microorganisms in Aquifers - Predictions for Genetically-Engineered Organisms Environ. Sci. Technol. **28**:1134-1138.
 123. **Kucukcolak, E., B. Koopman, G. Bitton, and S. Farrah** 1998. Validity of fluorochrome-stained bacteria as tracers of short- term microbial transport through porous media J. Contam. Hydrol. **31**:349-357.
 124. **Kuwabara, J. S., and R. W. Harvey** 1990. Application of a Hollow-Fiber, Tangential-Flow Device for Sampling Suspended Bacteria and Particles from Natural-Waters J. Environ. Qual. **19**:625-629.

125. **Lahlou, M., H. Harms, D. Springael, and J. J. Ortega-Calvo** in press. Influence of soil components on the transport of polycyclic aromatic hydrocarbon-degrading bacteria through saturated porous media. *Environ. Sci. Technol.*
126. **Lance, J. C., and C. P. Gerba** 1984. Virus Movement in Soil During Saturated and Unsaturated Flow *Appl. Environ. Microbiol.* **47**:335-337.
127. **Leblanc, D. R., S. P. Garabedian, K. M. Hess, L. W. Gelhar, R. D. Quadri, K. G. Stollenwerk, and W. W. Wood** 1991. Large-Scale Natural Gradient Tracer Test in Sand and Gravel, Cape-Cod, Massachusetts .1. Experimental-Design and Observed Tracer Movement *Water Resour. Res.* **27**:895-910.
128. **Lewus, P., and R. M. Ford** 1999. Temperature-sensitive motility of *Sulfolobus acidocaldarius* influences population distribution in extreme environments *J. Bacteriol.* **181**:4020-4025.
129. **Li, B. L., C. Loehle, and D. Malon** 1996. Microbial transport through heterogeneous porous media: Random walk, fractal, and percolation approaches *Ecol. Model.* **85**:285-302.
130. **Li, Q., and B. E. Logan** 1999. Enhancing bacterial transport for bioaugmentation of aquifers using low ionic strength solutions and surfactants *Water Res.* **33**:1090-1100.
131. **Lindlow, S. E., A. C. Amy, W. R. Barchet, and C. D. Upper** 1978. The role of bacterial ice nuclei in frost injury to sensitive plants. *In* P. Li (ed.), *Plant Cold Hardiness and Freezing Stress*. Academic Press, New York.
132. **Lindqvist, R., and G. Bengtsson** 1995. Diffusion-Limited and Chemical-Interaction-Dependent Sorption of Soil Bacteria and Microspheres *Soil Biol. Biochem.* **27**:941-948.
133. **Lindqvist, R., and G. Bengtsson** 1991. Dispersal Dynamics of Groundwater Bacteria *Microb. Ecol.* **21**:49-72.
134. **Lindqvist, R., J. S. Cho, and C. G. Enfield** 1994. A Kinetic-Model for Cell-Density Dependent Bacterial Transport in Porous-Media *Water Resour. Res.* **30**:3291-3299.
135. **Lindqvist, R., and C. G. Enfield** 1992. Biosorption of Dichlorodiphenyltrichloroethane and Hexachlorobenzene in Groundwater and Its Implications for Facilitated Transport *Appl. Environ. Microbiol.* **58**:2211-2218.
136. **Lindqvist, R., and C. G. Enfield** 1992. Cell-Density and Nonequilibrium Sorption Effects on Bacterial Dispersal in Groundwater Microcosms *Microb. Ecol.* **24**:25-41.
137. **Logan, B. E., D. G. Jewett, R. G. Arnold, E. J. Bouwer, and C. R. Omelia** 1995. Clarification of Clean-Bed Filtration Models *J. Environ. Eng.-ASCE.* **121**:869-873.
138. **Logan, B. E., D. G. Jewett, R. G. Arnold, E. J. Bouwer, and C. R. Omelia** 1997. Clarification of clean-bed filtration models - Closure *J. Environ. Eng.-ASCE.* **123**:730-731.
139. **Loveland, J. P., J. N. Ryan, G. L. Amy, and R. W. Harvey** 1996. The reversibility of virus attachment to mineral surfaces *Colloid Surf. A-Physicochem. Eng. Asp.* **107**:205-221.
140. **Mace, R. E.** 1999. Estimation of hydraulic conductivity in large-diameter, hand-dug wells using slug-test methods *J. Hydrol.* **219**:34-45.

141. **Macleod, F. A., H. M. Lappinscott, and J. W. Costerton** 1988. Plugging of a Model Rock System by Using Starved Bacteria *Appl. Environ. Microbiol.* **54**:1365-1372.
142. **Macler, B. A., and J. C. Merkle** 2000. Current knowledge on groundwater microbial pathogens and their control *Hydrogeol. J.* **8**:29-40.
143. **Martin, M. J., B. E. Logan, W. P. Johnson, D. G. Jewett, and R. G. Arnold** 1996. Scaling bacterial filtration rates in different sized porous media *J. Environ. Eng.-ASCE.* **122**:407-415.
144. **Martin, R., and A. Thomas** 1974. An example of the use of bacteriophage as a groundwater tracer. *J. Hydrol.* **23**:73-78.
145. **Martin, R. E., and E. J. Bouwer** 1991. Determination of bacterial collision efficiencies in a rotating disk system. *Environ. Sci. Technol.* **25**:2075-2082.
146. **Martin, R. E., E. J. Bouwer, and L. M. Hanna** 1992. Application of Clean-Bed Filtration Theory to Bacterial Deposition in Porous-Media *Environ. Sci. Technol.* **26**:1053-1058.
147. **Mas, J., C. Pedrosalio, and R. Guerrero** 1989. Variations in Cell-Size and Buoyant Density of *Escherichia-Coli-K12* During Glycogen Accumulation *FEMS Microbiol. Lett.* **57**:231-236.
148. **Mawdsley, J. L., A. E. Brooks, and R. J. Merry** 1996. Movement of the protozoan pathogen *Cryptosporidium parvum* through three contrasting soil types *Biol. Fertil. Soils.* **21**:30-36.
149. **McCaulou, D. R., R. C. Bales, and R. G. Arnold** 1995. Effect of Temperature-Controlled Motility on Transport of Bacteria and Microspheres through Saturated Sediment *Water Resour. Res.* **31**:271-280.
150. **McCaulou, D. R., R. C. Bales, and J. F. McCarthy** 1994. Use of Short-Pulse Experiments to Study Bacteria Transport through Porous-Media *J. Contam. Hydrol.* **15**:1-14.
151. **McInerney, M. J.** 1997. Use of models to predict bacterial penetration and movement within a subsurface matrix. *In* C. J. Hurst (ed.), *Modeling the Environmental Fate of Microorganisms*. American Society for Microbiology Press, Washington.
152. **McKay, L. D., J. A. Cherry, R. C. Bales, M. T. Yahya, and C. P. Gerba** 1993. A Field Example of Bacteriophage as Tracers of Fracture Flow *Environ. Sci. Technol.* **27**:1075-1079.
153. **McKay, L. D., W. E. Sanford, and J. M. Strong** 2000. Field-scale migration of colloidal tracers in a fractured shale saprolite *Ground Water.* **38**:139-147.
154. **McKay, L. D., P. L. Stafford, and L. E. Toran** 1997. EPM modeling of a field-scale tritium tracer experiment in fractured, weathered shale *Ground Water.* **35**:997-1007.
155. **Miller, W. G., and S. E. Lindow** 1997. An improved GFP cloning cassette designed for prokaryotic transcriptional fusions *Gene.* **191**:149-153.
156. **Mills, A. L., J. S. Herman, G. M. Hornberger, and T. H. Dejesus** 1994. Effect of Solution Ionic-Strength and Iron Coatings on Mineral Grains on the Sorption of Bacterial-Cells to Quartz Sand *Appl. Environ. Microbiol.* **60**:3300-3306.

157. **Mohammed, N., and R. I. Allayla** 2000. Effect of groundwater velocity on pilot scale bioremediation of gasoline contaminated sandy aquifers *Water Air Soil Pollut.* **120**:315-329.
158. **Mohammed, N., and R. I. Allayla** 1997. Modeling transport and biodegradation of BTX compounds in saturated sandy soil *J. Hazard. Mater.* **54**:155-174.
159. **Mohanty, B. P., R. S. Kanwar, and C. J. Everts** 1994. Comparison of Saturated Hydraulic Conductivity Measurement Methods for a Glacial-Till Soil *Soil Sci. Soc. Am. J.* **58**:672-677.
160. **Montgomery, A. D., M. J. McInerney, and K. L. Sublette** 1990. Microbial Control of the Production of Hydrogen-Sulfide by Sulfate-Reducing Bacteria *Biotechnol. Bioeng.* **35**:533-539.
161. **Morley, L. M., G. M. Hornberger, A. L. Mills, and J. S. Herman** 1998. Effects of transverse mixing on transport of bacteria through heterogeneous porous media *Water Resour. Res.* **34**:1901-1908.
162. **Murphy, E. M., and T. R. Ginn** 2000. Modeling microbial processes in porous media *Hydrogeol. J.* **8**:142-158.
163. **Murray, J. P., and S. Laband** 1979. *Appl. Environ. Microbiol.* **37**:480.
164. **Niehren, S., and W. Kinzelbach** 1998. Artificial colloid tracer tests: development of a compact on-line microsphere counter and application to soil column experiments *J. Contam. Hydrol.* **35**:249-259.
165. **Niehren, S., W. Kinzelbach, S. Seeger, and J. Wolfrum** 1995. An All-Solid-State Flow Cytometer for Counting Fluorescent Microspheres *Anal. Chem.* **67**:2666-2671.
166. **Nir, S.** 1976. Van der Waals interactions between surfaces of biological interest. *Prog. Surf. Sci.* **8**:1-58.
167. **Pang, L. P., M. Close, and M. Noonan** 1998. Rhodamine WT and *Bacillus subtilis* transport through an alluvial gravel aquifer *Ground Water.* **36**:112-122.
168. **Parolin, C., A. Montecucco, G. Ciarocchi, G. Pedralinoy, S. Valisena, M. Palumbo, and G. Palu** 1990. The Effect of the Minor Groove Binding-Agent Dapi (2-Amidino- Diphenyl-Indole) on DNA-Directed Enzymes - an Attempt to Explain Inhibition of Plasmid Expression in *Escherichia-Coli* *FEMS Microbiol. Lett.* **68**:341-346.
169. **Pedrosalio, C., J. Mas, and R. Guerrero** 1985. The Influence of Poly-Beta-Hydroxybutyrate Accumulation on Cell-Volume and Buoyant Density in *Alcaligenes-Eutrophus* *Arch. Microbiol.* **143**:178-184.
170. **Petushkov, V. N., and J. Lee** 1997. Purification and characterization of flavoproteins and cytochromes from the yellow bioluminescence marine bacterium *Vibrio fischeri* strain Y1 *Eur. J. Biochem.* **245**:790-796.
171. **Pickens, J. F., J. A. Cherry, G. E. Grisak, W. F. Merritt, and B. A. Risto** 1978. A multilevel device for groundwater sampling and piezometric monitoring. *Ground Water.* **16**:322-327.
172. **Pieper, A. P., J. N. Ryan, R. W. Harvey, G. L. Amy, T. H. Illangasekare, and D. W. Metge** 1997. Transport and recovery of bacteriophage PRD1 in a sand and gravel aquifer: Effect of sewage-derived organic matter *Environ. Sci. Technol.* **31**:1163-1170.

173. **Powelson, D. K., and C. P. Gerba** 1994. Virus Removal from Sewage Effluents During Saturated and Unsaturated Flow-through Soil Columns *Water Res.* **28**:2175-2181.
174. **Powelson, D. K., and A. L. Mills** 1996. Bacterial enrichment at the gas-water interface of a laboratory apparatus *Appl. Environ. Microbiol.* **62**:2593-2597.
175. **Powelson, D. K., and A. L. Mills** 1998. Water saturation and surfactant effects on bacterial transport in sand columns *Soil Sci.* **163**:694-704.
176. **Powelson, D. K., J. R. Simpson, and C. P. Gerba** 1991. Effects of Organic-Matter on Virus Transport in Unsaturated Flow *Appl. Environ. Microbiol.* **57**:2192-2196.
177. **Pusey, P. N., and J. A. Tough** 1985. Particle interactions, p. 85-102. *In* R. Pecora (ed.), *Dynamic light scattering: applications to photon correlation spectroscopy*. Plenum, New York.
178. **Raiders, R. A., M. J. McInerney, D. E. Revus, H. M. Torbati, R. M. Knapp, and G. E. Jenneman** 1986. Selectivity and Depth of Microbial Plugging in Berea Sandstone Cores *J. Indust. Microbiol.* **1**:195-203.
179. **Rajagopalan, R., and C. Tien** 1976. Trajectory analysis of deep-bed filtration with the sphere-in-cell porous media model. *Journal of the American Institute of Chemical Engineering*.
180. **Reddy, H. L., and R. M. Ford** 1996. Analysis of biodegradation and bacterial transport: Comparison of models with kinetic and equilibrium bacterial adsorption *J. Contam. Hydrol.* **22**:271-287.
181. **Redman, J. A., S. B. Grant, T. M. Olson, J. M. Adkins, J. L. Jackson, M. S. Castillo, and W. A. Yanko** 1999. Physicochemical mechanisms responsible for the filtration and mobilization of a filamentous bacteriophage in quartz sand *Water Res.* **33**:43-52.
182. **Redman, J. A., S. B. Grant, T. M. Olson, M. E. Hardy, and M. K. Estes** 1997. Filtration of recombinant Norwalk virus particles and bacteriophage MS2 in quartz sand: Importance of electrostatic interactions *Environ. Sci. Technol.* **31**:3378-3383.
183. **Rehmann, L. L. C., C. Welty, and R. W. Harvey** 1999. Stochastic analysis of virus transport in aquifers *Water Resour. Res.* **35**:1987-2006.
184. **Ren, J., A. I. Packman, and C. Welty** 2000. Correlation of colloid collision efficiency with hydraulic conductivity of silica sands *Water Resour. Res.* **36**:2493-2500.
185. **Reynolds, P. J., P. Sharma, G. E. Jenneman, and M. J. McInerney** 1989. Mechanisms of Microbial Movement in Subsurface Materials *Appl. Environ. Microbiol.* **55**:2280-2286.
186. **Rice, K. C., and G. M. Hornberger** 1998. Comparison of hydrochemical tracers to estimate source contributions to peak flow in a small, forested, headwater catchment *Water Resour. Res.* **34**:1755-1766.
187. **Rijnaarts, H. H. M., W. Norde, E. J. Bouwer, J. Lyklema, and A. J. B. Zehnder** 1993. Bacterial Adhesion under Static and Dynamic Conditions. *Appl. Environ. Microbiol.* **59**:3255-3265.
188. **Rijnaarts, H. H. M., W. Norde, E. J. Bouwer, J. Lyklema, and A. J. B. Zehnder** 1996. Bacterial deposition in porous media: Effects of cell-coating, substratum hydrophobicity, and electrolyte concentration *Environ. Sci. Technol.* **30**:2877-2883.

189. **Rijnaarts, H. H. M., W. Norde, E. J. Bouwer, J. Lyklema, and A. J. B. Zehnder** 1996. Bacterial deposition in porous media related to the clean bed collision efficiency and to substratum blocking by attached cells *Environ. Sci. Technol.* **30**:2869-2876.
190. **Ripple, C. D., R. V. James, and J. Rubin** 1974. Packing-induced radial particle-size segregation: Influence on hydrodynamic dispersion and water transfer measurements. *Soil Sci. Soc. Am. J.* **38**:219-222.
191. **Robertson, B. R., D. K. Button, and A. L. Koch** 1998. Determination of the biomasses of small bacteria at low concentrations in a mixture of species with forward light scatter measurements by flow cytometry *Appl. Environ. Microbiol.* **64**:3900-3909.
192. **Rossi, P., A. Decarvalhodill, I. Muller, and M. Aragno** 1994. Comparative Tracing Experiments in a Porous Aquifer Using Bacteriophages and Fluorescent Dye on a Test Field Located at Wilerwald (Switzerland) and Simultaneously Surveyed in Detail on a Local Scale by Radio-Magneto-Tellury (12-240 Khz) *Environ. Geol.* **23**:192-200.
193. **Rossi, P., N. Dorfliger, K. Kennedy, I. Muller, and M. Aragno** 1998. Bacteriophages as surface and ground water tracers *Hydrol. Earth Syst. Sci.* **2**:101-110.
194. **Rothmel, R. K., R. W. Peters, E. St Martin, and M. F. Deflaun** 1998. Surfactant foam bioaugmentation technology for in situ treatment of TCE-DNAPLs *Environ. Sci. Technol.* **32**:1667-1675.
195. **Rutter, P. R., and P. Vincent** 1980. The adhesion of microorganisms to surfaces: physicochemical aspects. *In* R. C. W. Berkeley, J. M. Lynch, J. Melling, P. R. Rutter, and P. Vincent (eds), *Microbial adhesion to surfaces*. E. Horwood Ltd., Chinchester, U.K.
196. **Ryan, J. N., M. Elimelech, R. A. Ard, R. W. Harvey, and P. R. Johnson** 1999. Bacteriophage PRD1 and silica colloid transport and recovery in an iron oxide-coated sand aquifer *Environ. Sci. Technol.* **33**:63-73.
197. **Salanitro, J. P., G. E. Spinnler, C. C. Neaville, P. M. mANER, S. M. Stearns, and P. C. Johnson** 1999. Demonstration of the enhanced MTBE bioremediation (EMB) in situ process. *In* Proceedings of the 5th International Symposium on In Situ and On Site Bioremediation. 5th International Symposium on In Situ and On Site Bioremediation., San Diego, Ca.
198. **Schafer, A., H. Harms, and A. J. B. Zehnder** 1998. Bacterial accumulation at the air-water interface *Environ. Sci. Technol.* **32**:3704-3712.
199. **Schafer, A., P. Ustohal, H. Harms, F. Stauffer, T. Dracos, and A. J. B. Zehnder** 1998. Transport of bacteria in unsaturated porous media *J. Contam. Hydrol.* **33**:149-169.
200. **Schijven, J. F., W. Hoogenboezem, S. M. Hassanizadeh, and J. H. Peters** 1999. Modeling removal of bacteriophages MS2 and PRD1 by dune recharge at Castricum, Netherlands *Water Resour. Res.* **35**:1101-1111.
201. **Scholl, M. A., and R. W. Harvey** 1992. Laboratory Investigations on the Role of Sediment Surface and Groundwater Chemistry in Transport of Bacteria through a Contaminated Sandy Aquifer *Environ. Sci. Technol.* **26**:1410-1417.

202. **Scholl, M. A., A. L. Mills, J. S. Herman, and G. M. Hornberger** 1990. The influence of mineralogy and solution chemistry on the attachment of bacteria to representative aquifer materials. *J. Contam. Hydrol.* **6**.
203. **Shales, S. W., and S. Kumarasingham** 1987. Bacterial Transport through Porous Solids - Interactions between *Micrococcus-Luteus* Cells and Sand Particles *J. Indust. Microbiol.* **2**:219-227.
204. **Sharma, P. K., and M. J. McInerney** 1994. Effect of Grain-Size on Bacterial Penetration, Reproduction, and Metabolic-Activity in Porous-Glass Bead Chambers *Appl. Environ. Microbiol.* **60**:1481-1486.
205. **Sharma, P. K., M. J. McInerney, and R. M. Knapp** 1993. In-Situ Growth and Activity and Modes of Penetration of *Escherichia-Coli* in Unconsolidated Porous Materials *Appl. Environ. Microbiol.* **59**:3686-3694.
206. **Simoni, S. F., T. N. P. Bosma, H. Harms, and A. J. B. Zehnder** 2000. Bivalent cations increase both the subpopulation of adhering bacteria and their adhesion efficiency in sand columns *Environ. Sci. Technol.* **34**:1011-1017.
207. **Simoni, S. F., H. Harms, T. N. P. Bosma, and A. J. B. Zehnder** 1998. Population heterogeneity affects transport of bacteria through sand columns at low flow rates *Environ. Sci. Technol.* **32**:2100-2105.
208. **Simoni, S. F., A. Schafer, H. Harms, and A. J. B. Zehnder** in review. Factors affecting mass transfer limited biodegradation in saturated porous media *J. Contam. Hydrol.*
209. **Sirokman, G., T. Wilson, and J. W. Hastings** 1995. A Bacterial Luciferase Reaction with a Negative Temperature- Coefficient Attributable to Protein-Protein Interaction *Biochemistry.* **34**:13074-13081.
210. **Sjollema, J., H. J. Busscher, and A. H. Weerkamp** 1989. Experimental approaches for studying adhesion of microorganisms to solid substrata: Applications and mass transport. *J. Microbiol. Methods.* **9**:79-90.
211. **Smith, M. S., G. W. Thomas, R. E. White, and D. Ritonga** 1985. Transport of *Escherichia-Coli* through Intact and Disturbed Soil Columns *J. Environ. Qual.* **14**:87-91.
212. **Smith, R. L., R. W. Harvey, and D. R. Leblanc** 1991. Importance of closely spaced vertical sampling in delineating chemical and microbiological gradients in groundwater studies. *J. Contam. Hydrol.* **7**:285-300.
213. **Stauffer, F., and T. Dracos** 1986. Experimental and Numerical Study of Water and Solute Infiltration in Layered Porous-Media *J. Hydrol.* **84**:9-34.
214. **Steffan, R. J., K. L. Sperry, M. T. Walsh, S. Vainberg, and C. W. Condee** 1999. Field-scale evaluation of in situ bioaugmentation for remediation of chlorinated solvents in groundwater *Environ. Sci. Technol.* **33**:2771-2781.
215. **Story, S. P., P. S. Amy, C. W. Bishop, and F. S. Colwell** 1995. Bacterial transport in volcanic tuff cores under saturated flow conditions *Geomicrobiol. J.* **13**:249-264.
216. **Straub, T. M., I. L. Pepper, and C. P. Gerba** 1995. Comparison of Pcr and Cell-Culture for Detection of Enteroviruses in Sludge-Amended Field Soils and Determination of Their Transport *Appl. Environ. Microbiol.* **61**:2066-2068.
217. **StrongGunderson, J. M., and A. V. Palumbo** 1997. Laboratory studies identify a colloidal groundwater tracer: Implications for bioremediation *FEMS Microbiol. Lett.* **148**:131-135.

218. **Sun, Y., J. N. Petersen, J. Bear, T. P. Clement, and B. S. Hooker** 1999. Modeling microbial transport and biodegradation in a dual- porosity system *Transp. Porous Media.* **35**:49-65.
219. **Sutton, D. J., Z. J. Kabala, D. E. Schaad, and N. C. Ruud** 2000. The dipole-flow test with a tracer: a new single-borehole tracer test for aquifer characterization *J. Contam. Hydrol.* **44**:71-101.
220. **Tan, Y., J. T. Gannon, P. Baveye, and M. Alexander** 1994. Transport of Bacteria in an Aquifer Sand - Experiments and Model Simulations *Water Resour. Res.* **30**:3243-3252.
221. **Taylor, S. W., and P. R. Jaffe** 1990. Substrate and Biomass Transport in a Porous-Medium *Water Resour. Res.* **26**:2181-2194.
222. **Thompson, S. S., and M. V. Yates** 1999. Bacteriophage inactivation at the air-water-solid interface in dynamic batch systems *Appl. Environ. Microbiol.* **65**:1186-1190.
223. **Toran, L., and A. V. Palumbo** 1992. Colloid Transport through Fractured and Unfractured Laboratory Sand Columns *J. Contam. Hydrol.* **9**:289-303.
224. **Trevors, J. T., J. D. Vanelsas, L. S. Vanoverbeek, and M. E. Starodub** 1990. Transport of a Genetically Engineered *Pseudomonas-Fluorescens* Strain through a Soil Microcosm *Appl. Environ. Microbiol.* **56**:401-408.
225. **Troussellier, M., C. Courties, P. Lebaron, and P. Servais** 1999. Flow cytometric discrimination of bacterial populations in seawater based on SYTO 13 staining of nucleic acids. *FEMS Microbiol. Ecol.* **29**.
226. **Unge, A., R. Tombolini, L. Molbak, and J. K. Jansson** 1999. Simultaneous monitoring of cell number and metabolic activity of specific bacterial populations with a dual *gfp-luxAB* marker system *Appl. Environ. Microbiol.* **65**:813-821.
227. **Unge, A., R. Tombolini, A. Moller, and J. K. Jansson** 1997. Optimization of GFP as a marker for detection of bacteria in environmental samples., p. 391-394. *In* J. W. Hastings, L. J. Kricka, and P. E. Stanley (eds), *Bioluminescence and Chemiluminescence: Molecular reporting with photons.* John Wiley & Sons, Chinchester, U.K.
228. **Unice, K. M., and B. E. Logan** 2000. Insignificant role of hydrodynamic dispersion on bacterial transport *J. Environ. Eng.-ASCE.* **126**:491-500.
229. **van Oss, C. J.** 1994. *Interfacial forces in aqueous media.* Marcel Dekker, New York.
230. **Van Oss, C. J., and C. F. Gillman** 1972. Contact angles and phagocytosis of non-opsonized bacteria. **12**:283-292.
231. **van Oss, C. J., R. J. Good, and M. K. Chaudry** 1986. The role of van der Wals forces and hydrogen bonds in 'hydrophobic interactions between biopolymers and low energy surfaces. *J. Colloid Interface Sci.* **111**:378-390.
232. **Vandevivere, P., and P. Baveye** 1992. Relationship between Transport of Bacteria and Their Clogging Efficiency in Sand Columns *Appl. Environ. Microbiol.* **58**:2523-2530.
233. **Vandevivere, P., and P. Baveye** 1992. Saturated Hydraulic Conductivity Reduction Caused by Aerobic- Bacteria in Sand Columns *Soil Sci. Soc. Am. J.* **56**:1-13.

234. **Vanelsas, J. D., J. T. Trevors, and L. S. Vanoverbeek** 1991. Influence of Soil Properties on the Vertical Movement of Genetically-Marked *Pseudomonas-Fluorescens* through Large Soil Microcosms *Biol. Fertil. Soils*. **10**:249-255.
235. **Wan, J. M., T. K. Tokunaga, and C. F. Tsang** 1995. Bacterial Sedimentation through a Porous-Medium *Water Resour. Res.* **31**:1627-1636.
236. **Wan, J. M., and J. L. Wilson** 1994. Visualization of the Role of the Gas-Water Interface on the Fate and Transport of Colloids in Porous-Media *Water Resour. Res.* **30**:11-23.
237. **Wan, J. M., J. L. Wilson, and T. L. Kieft** 1994. Influence of the Gas-Water Interface on Transport of Microorganisms through Unsaturated Porous-Media *Appl. Environ. Microbiol.* **60**:509-516.
238. **Wang, D. S., C. P. Gerba, and J. C. Lance** 1981. Effect of soil permeability on virus removal through soil columns. *Appl. Environ. Microbiol.* **42**:83-88.
239. **Wellings, F. M., A. L. Lewis, C. W. Mountain, and L. V. Pierce** 1975. Demonstration of virus in groundwater after effluent discharge into soil. *Appl. Environ. Microbiol.* **29**:751-757.
240. **Williams, V., and M. Fletcher** 1996. *Pseudomonas fluorescens* adhesion and transport through porous media are affected by lipopolysaccharide composition *Appl. Environ. Microbiol.* **62**:100-104.
241. **Wilson, J. T., L. E. Leach, M. Henson, and J. N. Jones** 1986. In situ bioremediation as a ground water remediation technique. *Ground Water Monitoring Reviews.* **6**:56-64.
242. **Witt, M. E., M. J. Dybas, R. M. Worden, and C. S. Criddle** 1999. Motility-enhanced bioremediation of carbon tetrachloride- contaminated aquifer sediments *Environ. Sci. Technol.* **33**:2958-2964.
243. **Wood, W. W., and G. G. Ehrlich** 1978. Use of baker's yeast to trace microbial movement in ground water *Ground Water.* **16**:398-403.
244. **Yadav, J. S., J. F. Quensen, J. M. Tiedje, and C. A. Reddy** 1995. Degradation of Polychlorinated Biphenyl Mixtures (Aroclor-1242, Aroclor-1254, and Aroclor-1260) by the White-Rot Fungus *Phanerochaete-Chrysosporium* as Evidenced by Congener-Specific Analysis *Appl. Environ. Microbiol.* **61**:2560-2565.
245. **Yao, K. M., M. T. Habibian, and C. R. O'Melia** 1971. Water and waste water filtration: Concepts and applications. *Environ. Sci. Technol.* **5**:1105-1112.
246. **Yates, M. V., and C. P. Gerba** 1985. Factors Controlling the Survival of Viruses in Groundwater *Water Sci. Technol.* **17**:681-687.
247. **Zhang, P., and W. P. Johnson** 1999. Rapid selective ferrographic enumeration of bacteria *J. Magn. Magn. Mater.* **194**:267-274.
248. **Zhang, P., W. P. Johnson, and R. Rowland** 1999. Bacterial tracking using ferrographic separation *Environ. Sci. Technol.* **33**:2456-2460.
249. **Zlotnik, V. A., and V. L. McGuire** 1998. Multi-level slug tests in highly permeable formations: 2. Hydraulic conductivity identification, method verification, and field applications *J. Hydrol.* **204**:283-296.