



Dr. Kirk Hatfield

- Director, Engineering School of Sustainable Infrastructure and Environment, University of Florida
- kirk.hatfield@essie.ufl.edu

Dr. Kirk Hatfield is the Director of the Engineering School of Sustainable Infrastructure and Environment at the University of Florida, the Director of the Florida Water Resources Research Center, and a Professor in the Department of Civil and Coastal Engineering. Dr. Hatfield received his BS and MS degrees from the University of Iowa and his PhD degree from the University of Massachusetts in Amherst. Following graduation, he joined the University of Florida, Department of Civil Engineering in 1987.

Dr. Hatfield's ongoing research activities are in the areas of aqueous environmental monitoring, contaminant fate transport modeling subsurface, and in the environmental remediation, and water resources systems analysis. He has active research collaborations with universities and institutes in Russia, Brazil, Canada, Mexico, England, and Germany. These collaborations have produced several patents and several technical paper awards in 1994, 1998, 2006, and 2011 from ASEE and ASCE and from the editorial board of the most highly cited journal in his discipline, Environmental Science and Technology. In 2006, the Department of Defense awarded Dr. Hatfield and his colleagues the distinguished "Project of the Year Award" for their research to demonstrate and validate a new technology that provides direct measures of water and contaminant fluxes in subsurface aquifers.

Selected Papers

Klammler, H., Mohamed, M.M.A., Hatfield, K., Achar, J., Jung, J. (2020). Modelling Micro- and Nano-Bubble Stability and Treatment Mechanisms in Batch Reactors. Journal of Environmental Engineering, 146(8), pp. 04020079.

Klammer, H., Jawitz, J.W., Annable, M.D., Yaquian, J.A., Hatfield, K, Burger, P. (2020). Decadal scale recharge-discharge time lags from aqifer freshwater-saltwater interactions. Journal of Hydrology, 582, pp. 124514.

Yadav, B., Hatfield, K. (2018). Stream network conflation with topographic DEMs. Environmental Modelling & Software, 102(C), pp. 241-249.

Schaefer, C.E., Lippincott, D.R., Klammler, H., Hatfield, K. (2018). Evidence of rock matrix back-diffusion and abiotic dechlorination using a field testing approach. Journal of Contaminant Hydrology, 209, pp. 33-41.

Linkov, I. et al. 2018. Tiered approach to resilience assessment. Risk Analysis, 38, pp. 1772-1780.

Klammler, H., Rao, P.S.C., Hatfield, K. (2018). Modeling dynamic resilience in coupled technological-social systems subjected to stochastic disturbance regimes. Environment Systems and Decisions, 38(1), pp. 140-159.

Klammler, H., Layton, L., Nemer, B., Hatfield, K., Mohseni, A. (2017). Theoretical aspects for estimating anisotropic saturated hydraulic conductivity from in-well or direct-push probe injection tests in uniform media. Advances in Water Resources, 104, pp. 242-254.

Layton, L., Klammler, H., Hatfield, K., Cho, J., Newman, M.A., Annable, M.D. (2017). Development of a passive sensor for measuring vertical cumulative water and solute mass fluxes in lake sediments and streambeds. Advances in water resources, 105, pp. 1-12.

Kunz, J.V. et al. (2017). Quantifying nutrient fluxes with a new hyporheic passive flux meter (HPFM). Biogeosciences, 14 (3), pp. 631-649.

Klammler, H. et al. (2016). A new device for characterizing fracture networks and measuring groundwater and contaminant fluxes in fractured rock aquifers. Water Resources Research, 52(7), pp. 5400-5420.

Volikov, A.B. et al. (2016a). Silanized humic substances act as hydrophobic modifiers of soil separates inducing formation of water-stable aggregates in soils. CATENA, 137, pp. 229-236.

Volikov, A.B., Ponomarenko, S.A., Gutsche, A., Nirschl, H., Hatfield, K., Perminova, I.V. (2016b). Targeted design of water-based humic substances-silsesquioxane soft materials for nature-inspired remedial applications. RSC ADVANCES 6(53), pp. 48222-48230

Volikov, A.B., Ponomarenko, S.A., Konstantinov, A.I., Hatfield, K., Perminova, I.V. (2016c). Nature-like solution for removal of direct brown 1 azo dye from aqueous phase using humics-modified silica gel. CHEMOSPHERE, 145, pp. 83-88.

Acar, Ö. et al. (2013). A stochastic model for estimating groundwater and contaminant discharges from fractured rock passive flux meter measurements. Water Resources Research, 49, pp. 1–15.

Karpiouk, L.A., Ponomarenko, S.A., Mourran, A., Bochkariov, D., Muzafarov, A.M., Hatfield K., Perminova, I.V. (2012). Self-assembly of alkoxysilanized humic substances into multidomain adlayers at the water-solid interface: linking surface morphology to molecular structures of adsorbate. Soft Matter, 8(8), pp. 2452–2459.

Karpiouk, L.A., Ponomarenko, S.A., Konstatinov, A.I., Hertkorn, N., Muzafarov, A.M., Hatfield K., Perminova, I.V. (2012). Controlling Aqueous Sorption of Humic Substances on Silica Gel by Directed Alkoxysilyl-Derivatization of Their Functionalities, Colloids and Surfaces A: Physicochemical and Engineering Aspects, Vol 396, pp. 224-232.

Klammler H. et al. (2012). Contaminant Discharge and Uncertainty Estimates from Passive Flux Meter Measurements, Water Resources Research, 48.

Klammler H. et al. (2012). Water and contaminant flux estimation from multi-layer passive flux meter measurements. Advances in Fluid Mechanics, WIT Transactions on Engineering Sciences, 74, pp. 301-313.

Inglett, K.S., Bae, H.S., Aldrich, H.C., Hatfield, K., Ogram, A.V. (2011). Clostridium chromiireducens sp. nov., isolated from Cr(VI)-contaminated soil. International journal of systematic and evolutionary microbiology, 61 (11), pp. 2626-31.