Dr. Michael Annable

- Professor, Department of Environmental Engineering Sciences, University of Florida
- annable@ufl.edu

Dr. Michael Annable is a Professor in the Department of Environmental Engineering Sciences at the University of Florida. He joined the faculty in 1992 after receiving his Ph.D. from Michigan State University where he worked on soil vapor extraction of multi-component non-aqueous phase liquids. His current interests are in physical-chemical processes related to field scale application of innovative technologies for subsurface remediation. He is also investigating innovative techniques for measuring groundwater flow and contaminant flux in aquifers. He has published more than 60 journal articles and currently serves as an Associate Editor for the Journal of Contaminant Hydrology.

Research Areas of Interest

- Subsurface Remediation
- Flux Meter ESTCP Project
- Wetland Hydrology
- Dry Cleaner Site Remediation

Selected Papers

Jawitz, J.W., Desormeaux, A.M., Annable, M.D., Borchardt, D., Dobberfuhl, D. (2020). Disaggregating Landscape-Scale Nitrogen Attenuation Along Hydrological Flow Paths. Journal of Geophysical Research: Biogeosciences, 125(2).

Kwon, H., Mohamed, M.M., Annable, M.D., Kim, H. (2020). Remediation of NAPL-contaminated porous media using micro-nano ozone bubbles: Bench-scale experiments. Journal of Contaminant Hydrology, 228, pp. 103563.

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

Desormeaux, A., Annable, M.D., Dobberfuhl, D., Jawitz, J.W. (2019). In Situ Measurement of Nitrate Flux and Attenuation using a Soil Passive Flux Meter. Journal of Environmental Quality, 48(3), pp. 709-716.

Haluska, A.A., Schaefer, C.E., Cho, J., Lavorgna, G.M., Annable, M.D. (2019). Long-term mass flux assessment of a DNAPL source area treated using bioremediation. Journal of Contaminant Hydrology, 227, pp. 103516.

Kwon, H., Choi, J. K., Annable, M. D., Kim, H. (2019). Surfactant-enhanced air sparging with viscosity control for heterogeneous aquifers. Hydrogeology Journal, 1-13.

Yang, M., McCurley, K.L., Annable, M.D., Jawitz, J.W. (2019). Diffusion of solutes from depleting sources into and out of finite low-permeability zones. Journal of Contaminant Hydrology, 221, pp. 127-134.

Yang, M., Yaquian, J.A., Annable, M.D., Jawitz, J.W. (2019). Karst conduit contribution to spring discharge and aquifer cross-sectional area. Journal of Hydrology, 578, pp. 124037.

Portois, C., Essouayed, E., Annable, M.D., Guiserix, N., Joubert, A., Atteia, O. (2018). Field demonstration of foam injection to confine a chlorinated solvent source zone. Journal of Contaminant Hydrology, 214, pp. 16-23.

Brooks, M. C., Wood, A. L., Cho, J., Williams, C. A., Brandon, W., Annable, M. D. (2018). Source strength functions from long-term monitoring data and spatially distributed mass discharge measurements. Journal of contaminant hydrology, 219, 28-39.

Essouayed, E., Annable, M. D., Momtbrun, M., Atteia, O. (2018). An innovative tool for groundwater velocity measurement compared with other tools in laboratory and field tests. Journal of Hydrology, 2, 100008.

Haluska, A., Thiemann, M., Evans, P., Cho, J., & Annable, M. (2018). Expanded Application of the Passive Flux Meter: In-Situ Measurements of 1, 4-Dioxane, Sulfate, Cr (VI) and RDX. Water, 10(10), 1335.

Choi, J.K. et al. (2018). Effect of increased groundwater viscosity on the remedial performance of surfactant-enhanced air sparging. Journal of Contaminant Hydrology, 210, pp. 42–49.

Schaefer, C.E., Lavorgna, G.M., Haluska, A.A., Annable, M.D. (2018). Long-Term Impacts on Groundwater and Reductive Dechlorination Following Bioremediation in a Highly Characterized Trichloroethene DNAPL Source Area. Groundwater Monitoring & Remediation, 38(3), pp. 65-74.

Kunz, J. V., Annable, M. D., Rao, S., Rode, M., Borchardt, D. (2017). Hyporheic passive flux meters reveal inverse vertical zonation and high seasonality of nitrogen processing in an anthropogenically modified stream (Holtemme, Germany). Water Resources Research, 53(12), pp. 10155-10172.

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

Zhang, X., Gao, B., Zheng, Y., Hu, X., Creamer, A.E., Annable, M.D., Li, Y. (2017). Biochar for volatile organic compound (VOC) removal: Sorption performance and governing mechanisms. Bioresource technology, 245, pp. 606-614

Yang, M., Annable, M.D., Jawitz, J.W. (2017). Forward and back diffusion through argillaceous formations. Water Resources Research, 53(5), pp. 4514-4523.

Shukla, A., Shukla, S., Annable, M. D., Hodges, A. W. (2017). Volume reduction outweighs biogeochemical processes in controlling phosphorus treatment in aged detention systems. Journal of contaminant hydrology, 203, pp. 9-17.

Schaefer, C.E., Lavorgna, G.M., White, E.B., Annable, M.D. (2017). Bioaugmentation in a Well-Characterized Fractured Rock DNAPL Source Area. Groundwater Monitoring & Remediation, 37(2), pp. 35-42.

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, 1-12.