John Nieber

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Professor and director of graduate studies at the Department of Bioproducts & Biosystems Engineering, University of Minnesota, Minneapolis. John received B.Sc. in forest engineering from Syracuse University in 1972, M.Sc. in civil and environmental engineering, in 1974 and Ph.D. in agricultural engineering in 1979, both from Cornell University. His current teaching and research activities are: teaching courses in fluid mechanics, heat and mass transport, watershed restoration, ecological engineering, capstone engineering design. Research interests involve hydrologic process discovery and modeling, flow and transport processes in porous media, process design in ecological engineering, sustainability of water resource systems, and watershed restoration.

EDUCATION

- Ph.D. - Agricultural Engineering, Cornell University. 1979.
- M. S. Civil and Environmental Engineering, Cornell University. 1974.
- B.S. Forest Engineering, Syracuse University. 1972.

AREAS OF INTEREST

Hydrologic process discovery through field experimentation, data synthesis, and modeling. Development of models for simulation and prediction of hydrologic processes and mass transport processes. Assessing the impact of landuse activities on the hydrology and water quality of ground water, streams, lakes, and wetlands.

TEACHING

- BBE 4013: Transport in Biological Systems
- BBE 4523
- BBE 5095: Impaired Waters Assessments
- BBE 8523

SELECT PUBLICATIONS

- Bakker, M. and J.L. NIEBER, 2004. Analytic element modeling of cylindrical drains and cylindrical inhomogeneities in steady two-dimensional unsaturated flow, Vadose Zone J., 3: 1038-1049.
- Bakker, M. and J.L. NIEBER, 2005. Two-dimensional steady unsaturated flow through embedded elliptical layers, Water Resour. Res., 40: W12406, woi:10.1029/2004WR0032995
- Egorov, A., R. Dautov, J.L. NIEBER, and A. Sheshukov, 2003. Stability analysis of gravity-driven infiltrating flow, Water Resour. Res.. 39: doi:10. 1029/2002WR001886
- NIEBER, J.L., R. Dautov, A. Egorov, and A. Shehsukov, 2005. Dynamic capillary pressure mechanism for gravity-driven flows; review and extension to dry conditions, Transport in Porous Media, 58: 147-172.
- NIEBER, J.L., T.S. Steenhuis, T. Walter, and M. Bakker, 2006. Enhancement of seepage and lateral preferential flow by biopores on hillslopes, Biologia, 61: S225-S228 Suppl. 19, 2006
- Van Eertwegh, G.A.P.H, J. L Nieber, P.G.B De Louw, H.A. Van Hardeveld, and R. Bakkum, 2006. Impacts of drainage activities for clay soils on hydrology and solute loads to surface water, Irrig. And Drain., 55:235-245.