

CIVIL & ENVIRONMENTAL ENGINEERING SEMINAR ANNOUNCEMENT

It's an Engineering Challenge

Mark Rains, Ph.D.
University of South Florida and the
Florida Department of Environmental Protection

Friday, Apr. 5
12:30 p.m.
Room A322



Mark Raines, Ph.D.
Professor of Geology at the University of South Florida

Mark Rains is an ecohydrologist with a B.A. in Ecology, Behavior, and Evolution, an M.S. in Forestry, and a Ph.D. in Hydrologic Sciences. He is a Professor of Geology at the University of South Florida and Chief Science Officer for the State of Florida. His research is focused on hydrological connectivity from aquifers to estuaries; the roles that hydrological processes play in governing ecosystem structure and function; and the roles that science plays in informing water-related law, policy, and decision-making. As the Chief Science Officer, he is charged with ensuring that science underlies sound environmental policy and protection, including working with stakeholders to build a shared knowledge informed by common values and directing that knowledge toward the most pressing statewide environmental needs.



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We are facing environmental challenges unparalleled in human history. Much of the attention is on climate change. It is, however, a slowly developing threat, and the full consequences will not be made manifest until the distant future. The more immediate challenge we face is related to land use-land cover change. In Florida, we have gone from a mostly natural to a largely built environment in the last 150+ years. A raindrop falling in Florida in the 19th century probably fell in a wetland and nowhere near a channel, and did not travel far before evaporating or re-charging underlying aquifers. A raindrop falling in Florida today probably falls in a built landscape and close to a drainage feature, the purpose of which being to move that water and whatever it carries into the nearest major waterbody. This is fundamentally an engineering challenge, one the attendees of this presentation must rise to overcome.