

NORTHEASTERN UNIVERSITY

Distinguished Seminar Series Civil & Environmental Engineering

Geoenvironmental Engineering

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ABSTRACT

Geoenvironmental Engineering can be described as the engineering of geologic (earthen) and geosynthetic (polymer) materials for problems related to the protection of human health and the environment. The primary problems addressed by Geoenvironmental Engineers relate to either the potential for or the existence of subsurface pollution, and focus to a great extent on issues related to waste containment for prevention of subsurface pollution and remediation or cleanup of sites that were previously polluted. This goal is achieved by first providing a brief background on the Geoenvironmental Engineering program at Colorado State University, including the research focus areas, interests, and approaches related to the presenter, followed by brief descriptions of several recent and current research projects to emphasize the extent of collaboration and interdisciplinary nature of research in Geoenvironmental Engineering. Emphasis is placed on breadth rather than depth to illustrate the range of disciplinary topics covered by the research. The research described includes projects related to the semipermeable membrane and compatibility behaviors of clay barriers used for containment of wastes, hydrologic modeling of alternative covers for waste disposal, the concept of lumping in describing subsurface migration of organic chemical mixtures, and *in situ* remediation technologies involving soil mixing for treatment of chlorinated hydrocarbons and sulfate reducing bacteria for remediation of acid mine drainage.



Charles Shackelford received his Ph.D. at the University of Texas, 1988. He is currently a professor in the civil and environmental engineering

department at Colorado Stat University. He does research in environmental geotechnics, geotechnical engineering for waste containment, geoenvironmental engineering, and groundwater flow, seepage, and contaminant transport. He has received the following awards: NSF National Young Investigator Award 1992, Walter L. Huber Civil Engineering Research Prize (ASCE) 1995, and is the Director of the Rocky Mountain Regional Hazardous Substance Research Center, EPA Region 8 2001-2006

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12:00 p.m. – 1:00 p.m.

335 Shillman Hall