



GEOTECHNICAL  
ENGINEERING

STUDENT  
ORGANIZATION

GESO Guest Speaker Presentation  
Friday, January 31<sup>st</sup>, 2014  
12 – 1 PM  
Yeh Center Room 3310

**“THE USE OF PURE SAND LEVEES IN THE ROCK  
ISLAND DISTRICT CORPS OF ENGINEERS”**



**Thomas E. Mack, Chief, Geotechnical Branch, Rock Island District,  
US Army Corps of Engineers**

In the Rock Island District Corps of Engineers, there are nearly 360 miles of sand levees protecting approximately 335,000 acres of land along the Upper Mississippi River in Iowa, Illinois and Missouri. During the 2008 Flood, the District received many inquiries about sand levees. There was also much misunderstanding about the applicability of sand as a levee building material in the civil engineering community. Sand levees have been in existence since late 1800s and early 1900s. This presentation will discuss some of the early history of sand levees and why early levee builders used sand in circa 1900 levees. In the 1960's many levees along the Uppers Mississippi River where improved and again, the builders used sand to improve the levees. At that time, the Corps of Engineers undertook an extensive research program to develop and verify the design procedures. They constructed full scale test levees and subject them to high water and documented the results. Test sections were also evaluated numerically. Based upon these test sections and numerical analysis, design procedures where developed which are still used today. This presentation will discuss these procedures. The presentation will also discuss the construction of sand levees, and the merits and weakness of sand levees.

*As always, food and refreshments will be provided.*

*Everyone is welcome!!*