

# **ASCE Geo-institute (G-I)**

## **Geoenvironmental Engineering Committee**

**Lectures on Offer from the Geoenvironmental Engineering Committee (2018-2019)**  
**Please Contact: Dimitrios Zekkos, [zekkos@umich.edu](mailto:zekkos@umich.edu)**

---

### **Elevated Temperatures in Landfills – Recent Cases** **T.D. Stark (University of Illinois at Urbana-Champaign)**

Elevated temperatures in landfills can produce obnoxious odors, toxic gases, and aggressive leachates, as well as damage gas extraction, leachate collection, interim cover, and composite liner systems. They also can result in expensive remedial measures and warrant permanent closure of the facility. This presentation will discuss recent events and some of the factors that can lead to elevated landfill temperatures, including air ingress, partially extinguished surface fires, reactive wastes, and spontaneous oxidation.

### **Landfill Seismic Stability Case History – March 2013** **T.D. Stark (University of Illinois at Urbana-Champaign)**

This presentation will discuss a recent slope failure in a MSW landfill and the design and interface testing lessons learned from this event.

### **Stability of Waste Containment Facilities** **T.D. Stark (University of Illinois at Urbana-Champaign)**

This presentation will discuss a number of slope failures in waste containment facilities and the events and/or the factors that resulted in the slope stability. The results of these investigations will be discussed, and the lessons learned.

### **Geosynthetic interface strengths for static and seismic stability** **T.D. Stark (University of Illinois at Urbana-Champaign)**

This presentation will discuss the geosynthetic interface strengths that should be used for various static and seismic design scenarios, the importance of geosynthetic interface strengths on slope stability, when to use peak and residual geosynthetic interface strengths; how to develop minimum shear strengths for specifications; measurement of geosynthetic and GCL interface strengths using single and multi-interface tests; and how to develop a shear testing work plan for a commercial laboratory that yields meaningful data.

### **Single v. Multi-geosynthetic interface testing and strengths** **T.D. Stark (University of Illinois at Urbana-Champaign)**

This presentation will discuss the advantages and disadvantages of single and multi-geosynthetic interface tests and some unique comparisons of the results for three (3) recently constructed landfill bottom liner systems. The comparison includes peak and large displacement combination strength envelopes from single- and multi-layer interface direct shear tests for the same geomembrane (GM)/ drainage geocomposite (GC), geosynthetic clay liner (GCL)/geomembrane, and soil/GCL interfaces. Based on this comparison, it is recommended that multi-layer interface tests be used for composite liner system design and if there is an

anomaly with the multi-layer interface test results, single interface tests can be conducted to verify the weakest interface and to clarify the test results.