

## **CEE 595 – Geotechnical Engineering Seminar**

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Thursday, March 29, 2018  
11:00AM, Newmark Lab 1310

### **Advances in the Prediction and Control of Ground Movements**

*Professor Andrew Whittle*

#### **Abstract**

There are many diverse geotechnical problems where reliable predictions of ground deformations are critical in design and only limited options are available to control these movements. This lecture will compare and contrast experiences in the application of advanced constitutive models in the prediction and control of ground movements in four distinct classes of problem: urban excavations, mechanized tunneling, seismic retrofit of waterfront structures, and long-term prediction of settlements on clay.

#### **Bio**

Dr. Whittle earned his BSc. (1st class honors) in Civil Engineering from Imperial College in 1981 and Sc.D in Geotechnical Engineering at MIT (1987). He joined the MIT faculty as an Assistant Professor in 1988, became a Full Professor in 2000 and has served as Head of the Department of Civil and Environmental Engineering, 2009-2013. Dr Whittle is an expert in geotechnical engineering, whose research deals principally with formulation of constitutive models for representing the complex mechanical properties of soils and their application in predicting the performance of foundations and underground construction projects. His research has been widely used in the design of foundation systems for deepwater oil production facilities and in major urban excavation and tunneling projects including the Central Artery-Third Harbor Tunnel ('Big Dig') in Boston, and Tren Urbano in San Juan, Puerto Rico. Most recently he has led research efforts in the application of wireless sensor networks for monitoring underground water distribution systems and construction projects. He serves as Chief Scientific Advisor for an associated spin-off company, Visenti Pte. Ltd. that provides smart water analytics services (acquired by Xylem Inc. in 2016).