



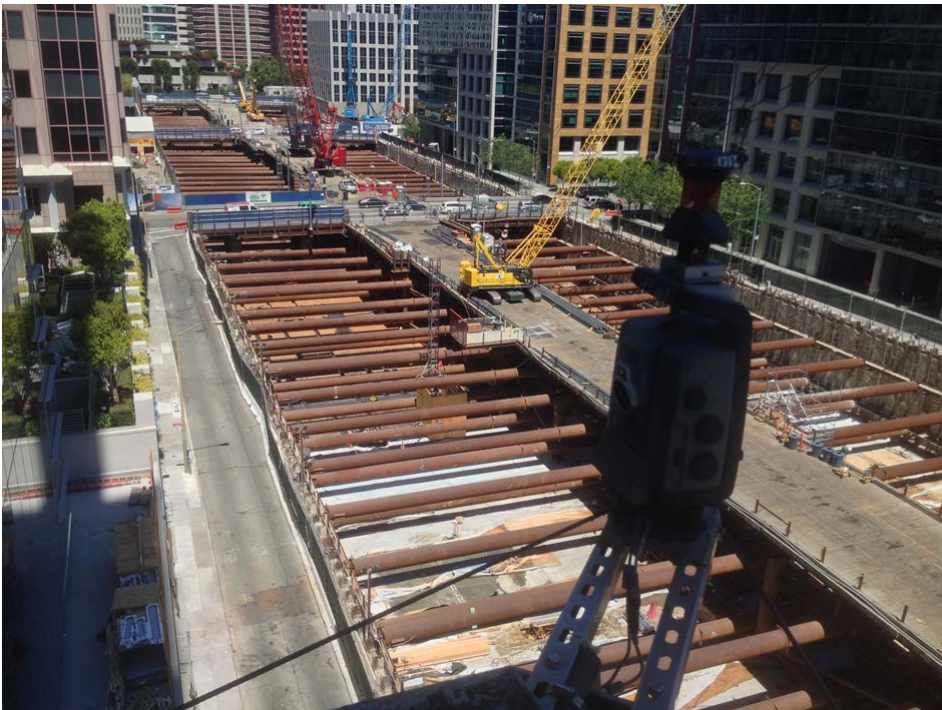
# Instrumentation and Monitoring: Current State of Practice and Emerging Technologies

Professor Kenichi Soga  
University of California, Berkeley

Monday, November 4, 2019  
ODOT Region 1 Headquarters  
123 NW Flanders Street  
Portland, Oregon  
Check-in begins: 8:30 a.m.  
Course: 9:00 a.m. – 5:00 p.m.

Sponsored By:

ASCE Geo-Institute Oregon Section



**Registration Is  
Now Open!  
Click Here to  
Register**

## **Purpose and Background:**

With the falling cost of instrumentation and the ever-increasing risk associated with large geotechnical projects, it is rare to have a major project without some sort of monitoring program deployed. As engineers, it is critical that we develop our skillset to critically design, evaluate, and make decisions based upon the monitoring data that is being produced. While a well-designed monitoring program can provide outsized benefit to the project as a whole, a poorly designed or ill-conceived monitoring program can have the opposite effect; creating more questions than it answers and damaging the opinion of monitoring among project owners and developers.

## **Why You Should Attend:**

After completing this course, you should:

- Understand the basics approach to designing and evaluating an instrumentation and monitoring program,
- Recognize the pros and cons associated with the most common types of monitoring and instrumentation,
- Have a basic understanding of the emerging technologies, and
- Feel comfortable implementing an instrumentation program into an overall project framework.

## **Who Should Attend Short Course:**

- Civil engineers
- Geotechnical engineers
- Geoenvironmental engineers
- Regulators and land-use planners at federal, state and local levels
- Public and private property owners

**Short Course Outline:**

(length of presentations will vary depending on questions and discussions)

**8:30-9:00.....Registration**

**9:00-10:00.....Monitoring Approach**

**10:00-11:00.....Geotechnical Monitoring Equipment**

**11:00-11:30.....Remote Sensing**

**11:30-12:00.....Case Study**

**12:00-12:45.....Lunch/Networking**

**12:45-2:15.....Emerging Technologies**

**2:15-2:45.....Uncertainty**

**2:45-3:00.....Break**

**3:00-4:00.....Example Exercise**

**4:00-5:00.....Questions/Discussion**

**Main Instructors: - Dr. Kenichi Soga, PhD, Professor and Andrew Yeskoo, PE**

### **Kenichi Soga, PhD**

Kenichi Soga is the Donald H. McLaughlin Chair in Mineral Engineering and a Chancellor's Professor at the University of California, Berkeley. He obtained his BEng and MEng from Kyoto University in Japan and PhD from the University of California at Berkeley. He was Professor of Civil Engineering at the University of Cambridge before joining UC Berkeley in 2016. He has published more than 350 journal and conference papers and is the co-author of "Fundamentals of Soil Behavior, 3rd edition" with Professor James K Mitchell. His current research activities are Infrastructure sensing, Performance based design and maintenance of underground structures, Energy geotechnics, and Geotechnics from micro to macro. He is a Fellow of the UK Royal Academy of Engineering and a Fellow of the Institution of Civil Engineers. He is the recipient of many awards including George Stephenson Medal and Telford Gold Medal from the Institution of Civil Engineers and Walter L. Huber Civil Engineering Research Prize from the American Society of Civil Engineers. He is a Bakar Fellow of UC Berkeley, promoting commercialization of smart infrastructure technologies. For more details, please go to <http://geomechanics.berkeley.edu/>

### **Andrew Yeskoo, P.E.**

Andrew Yeskoo is a second year PhD student at the University of California, Berkeley. He obtained his BS from Rensselaer Polytechnic Institute and his MS from the University of California, Berkeley. Prior to returning to Berkeley for his PhD, he worked at Arup in San Francisco on several large projects in the Bay Area. His research and career experience have been focused on the application of geotechnical instrumentation and monitoring; participating in the design, deployment, and interpretation of instrumentation programs ranging in application from centrifuge testing to field monitoring in urban environments. He is a co-author on a paper discussing the construction monitoring for the Salesforce (formerly Transbay) Transit Center in downtown San Francisco has participated in several other research and consulting projects. His current research is focused on the use of distributed fiber optic sensing (DFOS) in geotechnical monitoring.