This annual Cornell University Geotechnical Engineering Colloquium was created through a generous bequest by the late Dr. Robert L. Schiffman, Cornell Civil Engineering Class of 1944 and Professor Emeritus at the University of Colorado at Boulder. Professor Schiffman was a great believer in the need for all interested CE students to have the opportunity to meet and to hear lectures delivered by distinguished geotechnical engineers. Through his bequest, many generations of Cornellians will have this opportunity. Schiffman Lectures delivered to date are listed below:

1. *"Conduction Phenomena: From Theory to Geotechnical Practice"*
   13 Apr 1995 Prof. James K. Mitchell, Virginia Tech
2. *"Case History of Scott Dam: Geotechnical Practice for Public Safety"*
   8 Apr 1996 Prof. Richard E. Goodman, Univ. of California at Berkeley
3. *"Alternative Design Strategies for Piled Raft Foundations"*
   21 Oct 1996 Prof. Harry G. Poulos, Univ. of Sydney & Coffey Partners
4. *"Leaning Tower of Pisa – Current Situation"*
   1 Oct 1998 Prof. Michele B. Jamiolkowski, Technical Univ. of Torino
5. *"Soil Mechanics and U.S. National Defense – A Mutually Beneficial Relationship"* Dr. William F. Marcuson III, U.S. Army Engineer Waterways
   11 Nov 1999 Experiment Station
6. *"Uncertainty in Geotechnical Engineering: How Reliable is My Geotechnical Engineer?"* 31 Jan 2002 Dr. John T. Christian, Consulting Engineer
7. *"The World Trade Center - From Genesis to Armageddon"*
   24 Oct 2002 Mr. George J. Tamaro, Mueser Rutledge Consulting Engrs.
8. "*Geosynthetic-Reinforced Retaining Structure -The Future 'Standard Retaining Wall?"*
   28 Oct 2003 Prof. Robert D. Holtz, Univ. of Washington
9. *"Anatomy of a Court Trial on Tank Settlements"*
   7 April 2005 Prof. Charles C. Ladd, III, Massachusetts Inst. of Tech.
10. *"Long Term Performance of Contaminant Barrier Systems"*
    6 April 2006 Prof. R. Kerry Rowe, Queen's Univ.
11. *"Stability Assessment of Ten Large Landfill Failures"*
    17 April 2007 Prof. Robert M. Koerner, Drexel Univ.
12. *"Design of Foundations for the World's Tallest Buildings"*
    10 November 2009 Mr. Clyde Baker, Jr., STS Consultants
13. *"Re-Examination of Liquefaction Field Case Histories"*
    01 April, 2010. Prof. Emeritus Izzat M. Idriss, Univ. Cal Davis.
14. *"Current Approaches to Performance Monitoring and Future Trends"*
    07 April, 2011. Dr. W. Allen Marr, Geocomp Corporation
15. *"An Investigation into Why the Earthquake Liquefaction Charts Work So Well"*
    05 April, 2012. Prof. Ricardo Dobry, Rensselaer Polytechnic Institute
16. *"Performance-based Design in Geotechnical Engineering"*
    13 Sept 2012. Prof. Malcolm Bolton, University of Cambridge

17th Robert L. Schiffman '44 Geotechnical Colloquium

Thursday, 13 April 2017
Cornell University

Robert L. Schiffman
27 October 1923 – 10 August 1997

International Pioneer and Authority on the Theory of Consolidation of Soft Soils and on Computer Applications in Geotechnical Engineering

Smart Geotechnical Infrastructure and Construction

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Design, construction, maintenance and upgrading of geotechnical infrastructure will require thinking to minimize use of materials, energy and labor. This can only be achieved by understanding the performance of the geotechnical structures, both during its construction and throughout its service life. Can recent advances in sensor systems offer possibilities to radically alter methods of design and condition assessment of our geotechnical structures? In this lecture, several emerging sensor technologies such as distributed fiber optics sensing, wireless sensor networks, low power miniature sensors, energy harvesting, and computer vision are introduced and results from their deployments at tunneling, excavation and piling project sites in London are presented. These new sensor systems are producing datasets that are different from conventional monitoring systems and hence new engineering interpretation methods are required. It is argued that this leads to new opportunities for geotechnical engineers to improve the design, construction and maintenance of geotechnical infrastructure.

Kenichi Soga

Professional History:

Kenichi Soga is 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 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 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.

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