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## Fourth Charles C. Ladd Memorial Lecture



### Causes, Effects, and Mitigation of Sample Disturbance in Fine-Grained Soils

**Don J. DeGroot, ScD, PE**

*Professor, University of Massachusetts Amherst*

**Thursday, May 19, 2022 at Northeastern University**

**Registration and Social: 5:00 PM at Alumni Center, 716 Columbus Ave, 6th Floor, Boston, MA**

**Presentation: 7:00 PM at ISEC Auditorium, 805 Columbus Ave, Room 102 ISEC, Boston, MA**

### Synopsis

Professor Charles C. Ladd made significant contributions to our understanding of soil sample disturbance and the effects of poor-quality sampling on geotechnical engineering design. Sample disturbance causes changes in the natural soil state, and as a result key design parameters such as compressibility, yield stress and shear strength can be impacted. This lecture describes the current state of knowledge and practice in sampling of fine-grained soils. Each stage of the sampling process, from initiation of drilling to final preparation of laboratory test specimens, causes potential disturbance to samples and is described. Practical solutions during sampling are presented that can, if properly implemented, reduce the degree of sample disturbance. Qualitative and quantitative methods of assessing sample quality and laboratory mitigation strategies are also described. The lecture concludes with an overview of best practice recommendations for integrated site characterization programs for conduct of field operations (drilling, sampling, in situ testing) and laboratory work to enable reliable selection of soil parameters for establishing a design basis.

### Speaker

Don J. DeGroot is a geotechnical engineer and professor at the University of Massachusetts Amherst. He received his Doctor of Science degree in Civil Engineering at the Massachusetts Institute of Technology in 1989. He was a Research Council of Norway Guest Researcher Fellow at the Norwegian Geotechnical Institute in 1997 and a Gledden Visiting Senior Fellow at the University of Western Australia in 2005. His teaching, research and consultancy experience is primarily in soil behavior with an emphasis on field and laboratory measurements for geotechnical engineering site characterization programs. He has been a Principal/Co-Principal Investigator on numerous geotechnical engineering research projects that included research on drilling and sampling of soils, in situ testing, laboratory measurement of soil behavior, and selection of soil design parameters. His work in this area has been published widely in the leading geotechnical journals and international conference proceedings. He has trained two generations of students through his classroom teaching and research supervision, for which he has received several UMass Amherst awards.

**Registration Deadline: Thursday, May 12, 2022**

**Free to Members, Students, and Non-Members**

Register to attend this lecture in-person\* at [CCL Lecture](#). Register to attend this lecture virtually at [CCL Zoom](#). For questions regarding this event, contact Lucy Jen at [Lucy.Jen@Tufts.edu](mailto:Lucy.Jen@Tufts.edu) or 617/642-0502.

\* Please note that an inherent risk of exposure to COVID-19 exists anywhere other people are present, and even precautionary measures such as masking and social distancing cannot completely eliminate this risk. The Boston Society of Civil Engineers Section/ASCE (BSCES) requires any person attending a Society-sponsored in-person activity to be fully vaccinated against COVID-19 and to be prepared to provide proof of vaccination. In addition, any person who chooses to travel to and/or participate in any BSCES in-person activity assumes all risks arising from that decision. All participants must agree to comply with all safety procedures established by the Commonwealth of Massachusetts and Centers for Disease Control and Prevention (CDC) as well as any other protocols put in place by BSCES, the host sites, travel facilities, or any other applicable authorities.

Updated vaccination, testing, and masking requirements on Northeastern's Boston Campus are posted at <https://news.northeastern.edu/coronavirus/>.

## Charles C. Ladd Memorial Fund

Professor Charles C. Ladd was renowned as a gifted teacher (with a style emulated by many former students who became faculty members) and innovative researcher on advanced technical topics. He was internationally sought after as a consultant working on large, complex and difficult civil projects. Among his numerous professional achievements, Professor Ladd was elected in 1983 to the US National Academy of Engineering and was the recipient of many research awards from the American Society of Civil Engineers (ASCE) including the Walter L. Huber Civil Engineering Research Prize, the Croes Medal, the Norman Medal and the Terzaghi Lecture Award. In 1995, he was elected as a distinguished member of ASCE and received the Hogentogler Award from the American Society for Testing and Materials. In 2012, Professor Ladd was awarded the ASCE Outstanding Project and Leaders lifetime achievement award for his contributions to engineering education. Professor Ladd leaves a lasting legacy and tribute to his life's work with his commitment to his students at M.I.T. and significant contributions to geotechnical engineering.

The Charles C. Ladd Memorial Fund was established in 2015 to support a lecture presented biennially by an eminent academic or practitioner on a topic related to soil behavior and construction on soft ground. Donations to the fund can be made with check payable to BSCES with Charles C. Ladd Fund noted in the memo line. Check should be mailed to BSCES, Charles C. Ladd Fund, One Walnut Street, Boston, MA 02108-3616.

