



The 2024 University of Washington Hennes Lecture

“Multi(geo)physics Sediment Characterization & Process Monitoring”

Organized by the UW Geotechnical Graduate Student Society (GIGGS)

Speaker: Professor J. Carlos Santamarina
Georgia Institute of Technology

Date & Time: Thursday May 2, 2024
6:00 Doors Open & Check-in
6:30 Dinner & Networking
7:00 Presentation

Location: Maple Hall Great Room

Directions & Parking:

Maple Hall is located at the southwest corner of 1135 NE Campus Parkway. Paid parking is available at the UW W-10 Lot, W-12 Lot or the Central Plaza Garage:
<https://hfs.uw.edu/Meeting-Spaces/Maple-Hall-Great-Room>

Abstract:

Soils are granular materials; thus, their properties depend on parameters such as fabric, pore fluid characteristics, and effective stress. Interparticle forces underscore fundamental differences between fine and coarse-grained soils, while interconnected porosity defines flow and transport processes, and multiphase fluid conditions give rise to a wealth of interaction phenomena. Multi(geo)physics characterization using elastic waves, electromagnetic waves, nuclear magnetic resonance, thermal conductivity and X-rays can be effectively used to gain complementary information about the soil and fluid properties and to monitor processes such as loading, consolidation, diagenesis, liquefaction, freezing, drying and mixed-fluid conditions, fluid fingerprinting and gas adsorption/desorption. Engineering applications include foundations and thermally active geosystems, tunneling and retaining walls, liquefaction assessment and monitoring, ponded tailings and fly ash, and energy geoengineering solutions. Geophysical methods make possible innovative laboratory and field developments highlighted throughout the presentation.

Speaker Bio:

J. Carlos Santamarina (Professor and Clough Chair, Georgia Tech) earned his bachelor’s degree from the Universidad Nacional de Córdoba and completed graduate studies at the University of Maryland and Purdue University. Throughout his career, he has taught at NYU-Poly, the University of Waterloo, and KAUST. His research team utilizes a combination of experimental and numerical methods to investigate geomaterials (sediments, fractured rocks, and complex fluids) within the context of energy geo-science and engineering, from resource recovery to energy and waste geostorage. He delivered the 50th Terzaghi Lecture on Energy Geotechnology and is a member of both the Argentinean National Academies. Santamarina has received ASTM’s Hogentogler Award, the Korean Geotechnical Society Award, and Saudi Arabia’s Tarek al-Qasabi Award.

This is a free dinner event. Please RSVP and add to your calendar at the following link:

<https://forms.office.com/r/X8rfm9BpNm>