

# The L.A. Colding Lecture Series

## in Environmental Science and Technology

Ty P.A. Ferré

Associate Professor

Department of Hydrology and Water Resources

University of Arizona, Tucson, USA

Are we ready for Google Underground?

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**Abstract:**

Google Earth has had transformative impacts on both the practice and communication of geoscience research. Examples range from identifying a previously-unknown meteoric impact in Egypt, to tracking ash plumes from volcanoes, to visualizing the impacts of sea level rise, forest fires, tsunamis, and other natural disasters. Despite the broad range of these scientific applications, they all have one thing in common: they are based on visible light images of the Earth's surface. There have been some efforts to extend Google Earth to other modalities, notably to map the ocean floor and the surface of Mars. But, to date, there has been no real effort to look below the land surface. Over the past few years, US federal agencies have begun to consider the potential benefits of and challenges to creating a Google Underground. I will present and discuss some of these challenges, with particular emphasis on those that relate to hydrology.



Ludvig August Colding was Copenhagen's city engineer in the period 1857-1886 and designed the city's water supply system. He chose to base the supply entirely on groundwater. The system's general layout and many of its details date back to Colding's era. From 1869-1886, Colding was a professor at the Technical University of Denmark. At the age of 26, he discovered the law of conservation of energy, simultaneously with, but independently of Joule.

**DTU Environment**

Department of Environmental Engineering

Technical University of Denmark

Miljøvej, Building 113

DK - 2800 Kgs. Lyngby

Phone: (+45) 45 25 16 00

<http://www.env.dtu.dk/English/Research/tlcls.aspx>