

## Charles Merguerian, PhD, MSci, PG

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# DUKE

Dr. Merguerian is internationally recognized as the leading authority on the geologic structure and tectonics of New York City. He is the Principal of Duke Geological Laboratory in Stone Ridge NY, Professor Emeritus and former Chairman of Geology at Hofstra University (1981-2014), Curatorial Associate at Yale University and has a broad range of expert consulting experience with the United States Geological Survey, the California- and Connecticut State Geological Surveys, New York City DEP, Con Edison, many prominent private megaconstruction joint ventures as well as geotechnical and engineering firms.



Since 1972, Merguerian has gathered over a half century of professional experience in geologic mapping and structural analysis of complexly deformed metamorphic terrains, plutonic- and volcanic districts and areas underlain by sedimentary- and glacial strata throughout the United States. His chief geological expertise encompasses basic geologic mapping, petrography, ductile- and brittle-fault analysis, tectonics, and earthquake-hazard assessment of crystalline terrains with forays into the fields of sedimentary- and glacial geology. He has performed pure- and applied research and has annually published since 1977 over 235 maps, papers, guidebooks, technical reports and abstracts from such widely separated areas as NY, NJ, CT, MA, CA, and NV. [<https://www.dukelabs.com/Publications/PubsPdf/DLPubs.html> for free downloads]



During the past five decades his research efforts have focused on field- and tunnel mapping, laboratory research and geotechnical analysis related to the subsurface structure of New York City and vicinity. Merguerian has concentrated on the relationship between construction of subsurface tunnels, shafts, and foundations and the geological controls that dictate means and methods and performance expectations of tunnel boring machines and by mechanized means including hoe rams, roadheaders, and excavators. His expertise ranges from artisanal removal techniques such as EHF plasma tool technology to traditional drill and blast methods. This work has paved the way for more efficient tunneling and excavation of rock in the New York City area and has facilitated municipal megaconstruction projects including water, utility and transportation tunnels and micro-tunnels as well as providing in-depth knowledge of the risk variables of ground conditions for the purposes of planning and bidding contracts for civil engineering projects.

Largely due to his dedication and prominence in the geological sciences, Dr. Merguerian has been featured in many national and international public science broadcasts distributed by the BBC, National Geographic, The History Channel and The Discovery Channel and by television, radio and print outlets and public lectures. Plus, he is one hell of a nice guy.

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