

Dr. Cataldo is a Professional Engineer and hydrologist with over 40 years of applied and academic experience on water resource projects. As professor of hydrology and civil engineering at The Cooper Union for the Advancement of Science and Art in New York, he is director of the Hydraulics Laboratory, and teaches undergraduate and graduate courses in water resources, open channel flow, groundwater, hydraulic, hydrologic, environmental and sanitary engineering, fluid mechanics, differential and integral calculus and engineering mathematics. At EDD, he has provided senior modeling support on a variety of watershed, stormwater, and urban hydrology projects since 2003. Recent experience includes:

Applied Projects

Mathematical modeling of a discharge into Lake Ontario to determine the mixing patterns of the flow.

- Mathematical modeling of a diffuser discharge into the Hudson River. This modeling included the determination of the river hydrodynamics.
- Mathematical modeling of General Electric discharge into Ohio River.
- Mathematical Modeling of the Saugus River North of Boston to determine the mixing patterns of a thermal discharge into the river.
- Physical modeling of Lake Ontario discharge to determine thermal plume hydrodynamics.
- Field studies in the Hudson River and Saugus River to trace the flow patterns of these rivers.
- Hydraulic and process design of sanitary treatment plants.
- Stream and estuary pollution studies including WAC analysis.
- Hydraulic, environmental and computer modeling study and design of a pump well for a 500 bed prison.
- Field (10 wells) and analytical study of leachate from a hazardous waste landfill.
- Computer modeling of water distribution systems and re-design of the piping network. Hydraulic studies of the NYC Croton Water Shed (HEC5).
- Mathematical modeling of the impact of thermal plumes on receiving waters for five different rivers, and the design of submerged multiport diffusers.
- Studies on the Great Lakes and Saugus, Delaware and Hudson Rivers.
- Directed field studies on the Hudson River to determine the water quality and effect of thermal pollution.
- Feasibility study and preliminary design of the water supply network and sanitary system for a 3,000 room Caribbean resort.
- Hydrologic and hydraulic studies for environmental impact studies of shopping malls.

- Invited panel guest on a cable television program to discuss water and waste water technology.
- Beach erosion studies due to storms and ground water pollution analysis.
- Hydraulic and hydrologic studies of reservoir-dam sites in New York, New Jersey and Connecticut (HEC 1&2).
- Hydraulic, hydrologic and water quality studies of a pump storage project.
- Expert witness on hydraulic, hydrologic water quality and ground water pollution projects. Mathematical study of two 300-pipe municipal water supply network systems.

1971-1973

Dames & Moore

Senior Hydraulic Engineer. Project Manager for water pollution project on the Hudson River. Mathematical modeling of dye patterns in an ocean environment to determine the diffusion characteristics of the ambient water.

1969 – 1971

Tippets Abbett McCarthy Stratton

Engineer. Mathematical modeling and physical modeling (at Colorado State University) of hydroelastic vibration, resonance, tunnel hydraulics and basic hydraulic problems.

1960 – 1963

Brooklyn Naval Shipyard

Naval Architect. Layout and design of naval vessels.

Academic Affiliation

1973 – Present

The Cooper Union for the Advancement of Science and Art,

Department of Civil Engineering

Professor. Conducted research and principal investigator on a two-year, \$100,000 contract to determine the water quality of Jamaica Bay-Fresh Creek Basin. This Combined Sewage Overflow project consisted of field surveys, physical, and mathematical modeling. Mathematical and physical modeling of groundwater flow and petroleum spills. Conducted research and principal investigator on a three-year, \$200,000 contract for a water quality-thermal pollution modeling project on the Great Lakes and Hudson River. Developed a water quality and sanitary engineering laboratory for graduate and undergraduate students. Presently director of the hydraulics laboratory.

Taught undergraduate and graduate courses in water resources, open channel flow, groundwater, hydraulic, hydrologic, environmental and sanitary engineering, fluid mechanics, differential and integral calculus and engineering mathematics. Developed a Master's Degree program in water resources, environmental and sanitary engineering.

1971-1990

The Cooper Union for the Advancement of Science and Art,
Department of Applied Mathematics

Lecturer in Applied Mathematics, Fluid Mechanics and Hydraulic Engineering. Lecture series for Professional Engineering Examinations (part time).

1975-1992

Polytechnic Institute of New York

Taught graduate courses in open channel flow, hydrology, hydraulic design of structures, analysis of stream and estuary pollution and hydrodynamics for civil engineers.

The City College of The City University of New York

Assistant Professor (1967 – 1969). Conducted research in liquid and thermal jets and in diffusion of pollutants in estuaries. Mathematical modeling of the hydrodynamic patterns of gas flow.

Lecturer (1963 – 1967). Taught Fluid and Solid Mechanics and Mechanics Laboratory. Research in Gas dynamics.

EDUCATION

Ph.D.	1969	The City College of the City University of New York	
M.S.E.	1964	The City College of the City University of New York	1st in Class
B.C.E.	1960	The City College of the City University of New York	Top Third

PUBLICATIONS

Over 30 publications in major journals, ASCE Power Division and Hydraulic Division, ASME Journal of Fluids Engineering, Physics of Fluids, Review of Scientific Instruments, Plasma Physics, Fluid Dynamics Transactions, etc.

PROFESSIONAL ENGINEERING LICENSES

New York State and State of New Jersey