

LORRAINE M. LAFRENIERE

Applied Geosciences and Environmental Management Section
Environmental Science Division
Argonne National Laboratory

Education:

	Colorado School of Mines, Geology courses, 1977-1982
Ph.D.	University of Wisconsin at Madison, Geology, 1977
M.S.	University of Wisconsin at Madison, Geology, 1974
B.S.	University of Wisconsin at Madison, Geology, 1971

Professional Experience:

2003-Present	Manager, Applied Geosciences and Environmental Management Environmental Science Division Argonne National Laboratory
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As principal investigator, manage all aspects of environmental characterization programs at hazardous waste sites. This work is under the sponsorship of the Commodity Credit Corporation, U.S. Department of Agriculture. Annual funding is in excess of \$5 million. Responsibilities include planning, budgeting, staffing, interactions with sponsors and regulators, logistics and performance of fieldwork, and interpretation and reporting of findings. Develop new technologies to improve the site characterization process. Investigate innovative remedial options for implementation at suitable sites.

1996-2003	Geologist, Applied Geosciences and Environmental Management Environmental Science Division Argonne National Laboratory
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Provide geologic expertise for hazardous-waste-related projects, with emphasis on groundwater characterization, drilling, data analysis, and interpretation. Advance geologic models for highly variable depositional environments. Design and implement field programs including drilling, cone penetrometer (CPT) work, sampling, and retrieval of geophysical and analytical data. Assist in collection, analysis, and integration of data to arrive at a concise geologic/hydrogeologic model for each site. Work in multidisciplinary teams to design multiphase programs to test working hypotheses. Assist with fate and transport modeling and prepare reports. Develop and organize three International Symposia on Integrated Approaches to Site Characterization at Argonne; chair sessions and present papers; coauthor proceedings volumes. Administer CPT program, including complete mechanical and electronic retrofit of CPT vehicle and field and geologic oversight for all CPT investigations. Handle custom design and purchase of All-Track CPT "Crawler" vehicle from A.P. van den Berg, Inc., The Netherlands. Organize and present at CPT courses at Argonne.

Summary of Previous Experience:

1991-1996 Fluor Daniel Corporation, DOE Naval Petroleum and Oil Shale Reserves (Colorado, Utah, Wyoming)

Supervise geologic exploration and development at the DOE Naval Petroleum and Oil Shale Reserves in the Piceance, Powder River, and Uintah Basins. Periodically brief DOE Headquarters officials up to the Assistant Secretary of Energy level. Work with the Rocky Mountain Oil Testing Center (RMOTC), with individuals and consortia of industry and academia wishing to test new equipment and theories related to the petroleum industry. Develop DOE educational programs such as the Native American Training Program offered to tribal council members, as well as a summer internship program offered through DOE and RMOTC.

1977-1991 Various geologic and petroleum companies

Develop petroleum prospects throughout the entire Rocky Mountain Province. Review and recommend projects for governmental and private institutions. Generate prospects, resulting in the drilling of several productive wells, many using the newest horizontal drilling techniques. Schedule and oversee workover and drilling rigs and crews. Develop frontier plays, specializing in stratigraphy and basinal analysis, particularly in carbonate reservoirs. Conduct regional analyses and detailed petrographic studies. Conduct well site work and subsurface studies through the use of electric logs, cuttings, and cores.

Research Interests:

Innovations in remediation of environmental contamination
Role of geologic/hydrogeologic characterization in environmental site evaluation
Innovations in CPT operations, testing, and research
Quaternary glaciofluvial and glaciolacustrine stratigraphy, sedimentology, and paleoenvironmental reconstruction
Tectonostratigraphic terrane analysis
Upper Paleozoic fusulinid and algal biostratigraphy
Role of microorganisms and hydrodynamic constraints in tight gas sand hydrocarbon
Petroleum reservoirs of the Piceance, Paradox, and Uintah Basins
Fluvial sedimentology and stratigraphy of the Eocene/Paleocene Wasatch Formation and Upper Cretaceous Mesaverde Group

Professional Activities:

American Association of Petroleum Geologists, Geological Society of America, Society of Economic Paleontologists and Mineralogists, Paleontologic Society, Rocky Mountain Association of Geologists, American Petroleum Institute, Wyoming Geological Association, Society of Professional Well Log Analysts, Oklahoma Geological Society, PHI KAPPA PHI Honor Society, SIGMA XI Honor Society

Publications:

Author or co-author of more than 100 journal, book, report, and conference publications and presentations.