

LYNN B. REID

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PROFILE

Tenacious, rapid-learning hydrogeologist with extensive educational background in civil engineering, mathematics and statistics.

Excellent interpersonal, oral, and written communication skills. Comfortable with fundraising and client contact.

Extensive experience with hydrogeologic computer applications: **porous media models, geophysical data processing, and geostatistical analysis**. Experienced with **subsurface databases, three-dimensional earth modeling, and high-end data visualization packages**.

Skilled **programming and software design** in C++, Fortran, Matlab.

EDUCATION

1996

Massachusetts Institute of Technology, Cambridge, MA.

Sc.D. (Doctorate in Civil and Environmental Engineering)

Thesis:

A functional inverse approach for three-dimensional characterization of subsurface contamination. Advisor: Professor Dennis McLaughlin.

Doctoral research developed methodology for mapping hydraulic conductivity distribution in subsurface reservoirs from scattered well measurements with a statistical approach. Novel methodology employed analytical solutions of flow and transport equations, extensive numerical modeling, and uncertainty analysis. Applied techniques to a field site contaminated with coal gasification wastes.

Relevant course work covered stochastic methods and geostatistics, inverse theory, surface and groundwater hydrology, water resources management, and subsurface chemistry.

1987

University of Dundee, Dundee, Scotland.

M.Sc. (Applied Mathematics).

Thesis:

Galerkin finite element schemes applied to a non-linear reaction diffusion equation. Advisor: Professor A. Ron Mitchell.

Thesis developed finite element solutions to a non-linear equation describing flow in porous media.

Course work covered numerical solution of integral, ordinary differential and partial differential equations, approximation theory, optimization, and linear algebra.

1985

Princeton University, Princeton, NJ, USA

B.S.E. (Geological Engineering), *summa cum laude*.

Thesis:

Analysis of spatial input uncertainty: An application to groundwater flow in Woburn, Massachusetts. Advisor: Professor George F. Pinder.

Thesis investigated the effects of spatial variation in hydraulic conductivity; utilized Monte Carlo simulations of a groundwater flow model of water supply to a suburban town. Kriging and two-dimensional correlation schemes were utilized to characterize the structure of hydraulic conductivity.

Course work covered structural and engineering geology, numerical modeling, and traditional civil engineering subjects.

EXPERIENCE**2000**

Independent Programmer, Thigma Consulting, Chicago, IL, USA. Principal programmer of display software in Visual C++ on Windows platforms for oil industry data. Collaboration with other developers; approval of project specifications.

1999–2000

Geostatistician, RDS Resource, Peregrine Road, Westhill Business Centre, Aberdeen, Scotland UK.. Primary responsibility for spatial data analysis, statistical, and numerical consulting within an oil services firm. Computer modeling of earth properties using three-dimensional stochastic reservoir description packages, including geological mapping. Geophysical and petrophysical analysis; quality control of data and reports. Development of company workflows for technical subjects including Monte Carlo analysis and permeability upscaling. Brainstorming and troubleshooting for projects; education of coworkers.

1998

Geophysical Applications Programmer, READ Well Services Ltd., Offshore Technology Park, Aberdeen, Scotland UK. Development and programming of novel algorithms for acquisition and processing of vertical seismic profile, cased-hole caliper, and production logging data. Implementation of graphical user interfaces for algorithms; upgrading pre-existing software. Maintenance of Unix and NT networks, and development of Intranet, Internet, and HTML documentation.

1996–1997

Irrigation Engineer, Department of Crop Sciences, University of Sydney, NSW 2006 Australia. Application of inverse techniques to modeling two-phase, unsaturated flow through soil at drip irrigation field sites. Computer modeling of light infiltration through plant canopies. Developed field sampling strategies. Supervised Ph.D. candidates. Interaction with sponsoring government agencies; funding proposals and report generation.

1987–1989

Staff Engineer, ENVIRON Corporation, 214 Carnegie Center, Princeton, NJ 08540 USA. Supervised and completed various responsibilities within a private environmental consulting firm: Executed environmental site assessments at industrial sites, including fulfilling regulatory requirements and interacting with lawyers. Reviewed listings and Remedial Investigation/Feasibility Studies under federal Superfund legislation. Organized and executed monitoring plans involving contaminated soil, surface water and ground water sampling at industrial sites, including analysis and verification of data. Numerically modeled groundwater flow and contaminant transport for remediation design and landfill expansions, including data preparation, graphical results, and risk assessment. Numerically modeled surface water quality to assess impacts of proposed waste water treatment plant expansion. Presented results to clients and regulatory agencies.

1984-1985

Teaching Assistant and Instructor, Department of Civil Engineering and Summer Geology Institute, Princeton University, Princeton, NJ USA. Taught introductory personal computer usage, demonstrated graphics packages, and developed assignments for an undergraduate engineering course. Taught basic geology to high school science teachers and led field trips.

IT SKILLS

Proficient on **Unix**, **Windows**, and **Macintosh** computer platforms. Capable of administering small Unix and Windows networking systems.

Proficient **independent programming** in Fortran, C++ (including MFC), Matlab, HTML. Conversant in C, Perl, Tcl/Tk, Visual Basic.

Developed **porous media models** with many types of commercial software: e.g. MODFLOW, MT3D, SWMS2D, FEMWATER. Written flow and transport codes, including stochastic simulations, in Fortran. Hydrologic and chemical modeling with various packages including HEC-1, QUAL2E, and DAMBREAK.

Experienced with packages for **subsurface databases and three-dimensional earth modeling** e.g. GMS, Argus, Irap-RMS, Petrel; Landmark OpenWorks applications including Stratworks and Petroworks. Proficient application of common geostatistical codes and packages including GSLIB.

Produced **four-dimensional graphical results** with data visualization packages e.g. TECPLOT, IBM Explorer, AVS; also produced results with OpenGL, Matlab, GKS, and other subroutine-based systems.

PERSONAL

USA Citizen; full UK work permit.

Engineer-in-training, Commonwealth of Massachusetts

Conversant in written and spoken Spanish; some experience in written and spoken Nepali.

Publications in refereed journals available upon request.