

Daniel Gomes, M.S.

Partner, Senior Principal Hydrogeologist and Groundwater Modeler

EDUCATION:

M.Sc. Hydrology, University of São Paulo, Brazil, 2004

B.Sc. Geology, University of São Paulo, Brazil, 1985

PROFESSIONAL AFFILIATIONS:

NGWA – National Groundwater Association

IGWMC – Integrated (former International) Groundwater Modeling Center

PROFESSIONAL HISTORY:

Mutch Associates, LLC: Senior Principal Hydrogeologist and Groundwater Modeler 2019

ERM West Inc. Technical Director - 2014 to 2019

Waterloo Hydrogeologic Division, Nova Metrix LLC: Global Consulting and Training Manager - 2014 to 2015

North America, Schlumberger Water Services USA Inc.: Global Training Manager - Water Technologies 2013 to 2014

Schlumberger Water Services USA Inc.: Business Development Manager 2012-2013

Schlumberger Water Services USA Inc.: Principal Hydrogeologist and Consulting Team Lead 2010-2011

Schlumberger Water Services USA Inc.: California Operations Manager 2006-2010

EXPERIENCE SUMMARY:

Mr. Daniel Gomes is a Hydrogeologist and Groundwater modeler located in Denver, Colorado. He has 30 years of experience in groundwater hydrology, contaminant fate and transport, as well as numerical modeling of complex groundwater systems such as large mine dewatering projects, saltwater intrusion, heat transfer etc., under a variety of natural conditions (heterogeneous porous media, fractured and karstic systems, including temperate to tropical and desert conditions). He has provided consulting services for large Industrial/Superfund contaminated sites; open pit and underground mine dewatering, mine tailings impacts; water supply and hydrologic impacts; saltwater intrusion and density-dependent problems (brine infiltration); and remediation measures.

Mr. Gomes has extensive international experience, especially in Latin America. He is fluent in Portuguese and Spanish and has worked throughout South, Central and North America and the Caribbean. He has also completed projects or training programs in Europe (Germany, Italy, Sweden, and Spain), Asia/Oceania (Australia, New Zealand, China, Japan, Philippines, Thailand, Vietnam) and Africa/Middle East (Ethiopia, Libya, Saudi Arabia, UAE).

He has taught numerous groundwater training courses (flow, contamination, and modeling), including the annual Modflow Course (National Groundwater Association). He also served as Executive Director of the prestigious G-360 Groundwater Research Center led by Dr. Beth Parker and Dr. John Cherry at the University of Guelph in Canada.

Given his experience and deep knowledge of groundwater and modeling, he is frequently hired as a modeling peer reviewer and auditor for complex modeling litigation cases. He has reviewed several large scale flow and transport models for both private and government clients. He has also been hired by International Agencies including IAEA – International Atomic Energy Agency; PAHO - Pan American Health Organization, and The World Bank as an expert in hydrogeology and numerical modeling.

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PROFESSIONAL HISTORY (Cont.):

Waterloo Hydrogeologic, Inc. a
Schlumberger Company, Waterloo,
ON.: General Manager 2005-2006

Waterloo Hydrogeologic, Inc.: Software
Division Manager 2004-2005

Waterloo Hydrogeologic, Inc.:
Associate, Manager of International
Division 1996-2003

CSD-GEOKLOCK: Associate, Site
Assessment Manager 1990-1996

Pan-American Health Organization,
CEPIS: Young Professional –
Groundwater Sector 1988-1989

CETESB – Sao Paulo State EPA:
Hydrogeologist 1985-1990

CERTIFICATIONS:

Professional Geologist in Brazil - CREA

HONORS and AWARDS

Former Executive Director of G-360
Groundwater Research Centre at
University of Guelph led by Dr. John
Cherry and Dr. Beth Parker.

Former Member of the Latin American
Groundwater Pollution Prevention
Partnership – Pan American Health
Organization

Principal Instructor for the NGWA's
(National Ground Water Association)
Modflow Groundwater Modeling short
training course) (2000-2014).

PRINCETON REMEDIATION

COURSE: Lead Instructor of the
Groundwater Modeling Workshop.
Princeton Groundwater Inc.

SELECTED PROJECT EXPERIENCE:

Industrial Contaminated Sites

- Santa Susana Field Laboratory Discrete Fracture Network conceptual modeling. Simi Valley, CA. Working under Dr. John Cherry and Dr. Beth Parker, served as Project Manager and Senior Reviewer of a discrete fracture network modeling effort at a superfund site in California. The project involved the application of advanced Schlumberger fracture detection and parameter estimate logging tools, and a sophisticated data analysis software (PETREL) to identify fracture networks at the site and generate discrete fracture networks using FRACMAN (within PETREL). Client: University of Guelph, on behalf of a confidential group of Multi-National companies and NASA. 2009-2010.
- AEROJET Superfund Site, Rancho Cordova, CA. Currently participating in the Island Operable Unit RI/FS project as Lead F&T Modeler, involved in all aspects including agency negotiations. Ongoing project since 2008. Client: Shaw Group/AEROJET.
- MEW - Middlefield-Ellis-Whisman (MEW) Superfund Site wide focus feasibility study fate and transport and optimization models (Mountain View, CA). Revised the Site Conceptual Model to include a system of paleo-channels and aquitard windows not previously identified and assessed back diffusion effects on remediation time frames using dual-domain fate and transport simulation. Client: Schlumberger Technology Corporation (on behalf of other PRPs).
- Senior peer reviewer of a saprolite/fractured rock high resolution site assessment and flow and particle tracking model. Greater Sao Paulo area, Brazil. Ongoing.
- Lead modeler for a 65-year calibrated transient flow and particle tracking model with multiple PRPs to evaluate capture zone effectiveness and estimate travel times from multiple source areas. Client: Honeywell, Phoenix region, AZ. Ongoing project.
- Senior Hydrogeologist providing guidance for two tracer tests (bromide, fluoresceine) in saprolite/fractured media. Santo Andre regions, Sao Paulo, Brazil. Client AKZO-Nobel.
- Sangamo Site (Pickens County, South Carolina) Characterization and geological modeling. Sr. Reviewer. Client: Schlumberger Technology Corporation. Included advanced borehole logging for fracture detection, and a 3-D high resolution seismic reflection survey to map fractures and identify/map anomalies potentially identifying residual DNAPL.

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- Sr. Modeling auditor of the Cabot- Koppers Superfund Site F&T model in Gainesville, Florida. On behalf of the City of Gainesville, an existing MODFLOW/MT3D model prepared by the PRP consultant was reviewed to verify its ability to predict Naphthalene plume migration rates to the city's well field (Upper Transmissive Zone- Ocala limestone karstic system. 2005-2006.
- Evaluation of groundwater pumping requirements to capture deep plumes from the Cabot-Koppers Superfund Site to the City of Gainesville Murphree well field. 2008. Client: Edmunds and Jones Inc. on behalf of the City of Gainesville, FL.
- Senior modeler in the development of a RT3D parent-daughter degradation chain model (TCE–DCE–VC) plume in Toronto, Ontario. Developed remedial alternatives using cut-off walls and pump and treat alternatives. 2004. Client: confidential.
- Involved as senior reviewer of a 3-D Modflow-Modpath modeling project, with the purpose of evaluating funnel-and-gate systems design (TCE plume). Canada. 2004. Client: confidential.
- Senior Fate and Transport modeler of a naphthalene containment litigation project, close to Vancouver, Canada. Successfully defended a partial cut-off, followed by natural attenuation approach in which a deep cut-off wall was used to increase time of travel and allow for natural decay of naphthalene. 2003-2004.
- Principal modeler for a large 1,4-dioxane plume in a complex fluvio-glacial environment with preferential gravel channels pathways. Michigan, Confidential client. 2017- present.
- PFAS Modeling peer-review services in preparation for litigation. State of New York, Confidential client. 2018-present.
- GenX compounds (substitutes to PFAS compounds) preliminary groundwater screening level modeling to determine safe air emission rates. Confidential client, Eastern USA. 2018.
- Unsaturated zone modeling (code: Hydrus 1D) of chlorinated compounds to determine the effectiveness of capping an industrial solvents landfill with multiple compounds. Multinational legacy site in Brazil. 2018-2019.
- Air sparging optimization modeling using Modflow Surfact. Client: Monsanto. Brazil. 2018.
- Tidal effects modeling in groundwater to determine remediation goals. Conducted a large transient simulation at a site bounded by an estuary to fully account for additional dispersion on the plume front. Client: Monsanto. Brazil. 2016-2017.
- Capture zone analysis at a large Superfund site in Oregon, subject to tidal influence. Confidential client, 2018.
- Back-Diffusion assessment of long-term impacts in groundwater following remediation of source areas (Matrix Diffusion Tool Kit). Client: DOW Chemical, Sao Paulo, Brazil. 2019.
- Groundwater modeling of alternative permeable reactive walls (Bio-mulch), funnel and gate systems and reactive injection barriers at a site near Barcelona, Spain to aid remedy decision making and pilot testing. Confidential client. 2017-ongoing.
- Senior reviewer for the fate and transport model of a fly ash deposit in the banks of the Mississippi river in Illinois. Supervised the simulation of numerous CoCs including Sulfate, Iron, Manganese and Boron for a period of 30 years following the proposed cap installation. Client: Grand Tower Energy Center LLC. 2016.
- Reactive transport modeling of a parent-daughter reductive chlorination simulation using RT3D at a site in Japan. CoCs: PCE, TCE, DCE, VC, TCA. 2017.

- Senior F&T modeler for several benzene and naphthalene RI/FS projects for CSN, a large iron and steel multinational company. Rio de Janeiro, Brazil. 2003-2004.
- Participated as senior F&T modeler for a Human Health Risk Assessment as part of a large RI/FS of a multi-PRP site involving over 10 multinational companies. Supervised and audited a 3-D Modflow – MT3D model used to evaluate receptor point concentrations over time, as well as for remedial design simulations. São Paulo, Brazil. 2003.
- Developed a 3-D flow model to simulate the capture efficiency of soil vapor extraction/injection systems in Alaska to remediate a Jet Fuel plume. Based on model results, regulators approved the deactivation of the existing SVE system and monitored natural attenuation as the main remedy for the site. 2002.
- Development of seven three-dimensional flow and transport model for the evaluation of remedial alternatives for groundwater clean-up in Brazil. Cubatão, Sao Paulo, Bahia, Rio de Janeiro. 1996-1998. Client: CSD-GEOKLOCK (local engineering firm).
- Managed phase 1 and phase 2 site assessments and clean-up projects of 11 high profile sites contaminated with chlorinated solvents (PCE, TCE) and pesticides (PCP, Hexachlorobenzene). Developed of groundwater flow and transport models of three sites, where clean-up alternatives were evaluated. Successfully help clean-up level negotiations with Environmental Agencies and the Public Ministry. São Vicente, Brazil. 1990-1995.
- Managed a clean-up feasibility project and pilot pumping test for a chemical industry with acid wastes site. Developed a two-dimensional, finite elements flow and transport model for plume capture and clean-up time estimate. Bahia, Brazil.
- Participated in the environmental Impact Assessment of the third largest Petrochemical Complex of Latin America (upgrading of existing installations). Project management of multi-disciplinary team. Triunfo, Brazil, 1995.
- Performed site assessments and designed pump-and-treat remediation projects at several gas stations and storage facilities in Brazil.
- Conducted soil, groundwater, wipe and asbestos sampling for a Human Health Risk Assessment of a decommissioned multinational lighting company. In conjunction with McLaren-Hart. Recife, Brazil.
- Developed a performance evaluation of a petrochemical landfarming unit. Bahia, Brazil.
- Managed a Hazardous Wastes Landfill Environmental Impact Study. Project permitting, negotiations with environmental authorities, and local political and community leaders. Araraquara, Brazil. 1991; Rio de Janeiro, 1992-1993.
- Independent Auditor of a groundwater clean-up project at the Chloro-Chemical Complex in Maceió, Brazil. Second opinion report prepared for the Brazilian Institute of Environment (IBAMA). 1993.

Mining and Oil and Gas

- Soto-Norte Project (Bucaramanga, Colombia, 2017 on going). Senior Technical Reviewer (groundwater modeling and hydrogeology) for a large integrated surface water-groundwater modeling for Environmental Impact Assessment for the largest gold and silver project in Colombia in challenging topography and fractured media/saprolite conditions. Client: MINESA (Mubadala Group).

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- Senior Technical Reviewer for the pit closure modeling and conceptual-related tasks, Confidential Coal mine in Australia. 2017 (on going).
- Senior Modeler advisor for a fly ash deposit on top of a former open pit/underground coal mine in Australia, with density effects due to brine application. Confidential client, 2018-2019.
- Data management (data migration; QA/QC and integrated visualization consulting services. Pueblo Viejo Mine – Dominican Republic; Antamina Mine, Peru. Client: confidential Consulting company in South America. 2015-2016.
- Principal Fate and Transport Modeler and Project Manager for a large-scale site assessment, modeling and remedial design of acid drainage from a decommissioned coal mine. CSN, Criciuma, Southern Brazil. 2003.
- Minera Los Pelambres, Chile, 2002-2005 – Developed and calibrated a complex 3-D MODFLOW model to estimate long-term dewatering requirements and simulate dewatering /optimize works in hard rock fractured media with high altitude perched systems. Trained local staff to use the model for future simulations.
- Provided training services for CODELCO's staff on groundwater modeling with Visual MODFLOW. 2003. Calama, Chile.
- Minera Barrick Misquichicla – Peru, 2009 - 2010. Principal modeler for the Pierina pit closure and post closure water quality modeling. Developed a MODFLOW SURFACT model to estimate pit inflows and post closure pit lake formation/development of mitigation measures.
- Evaluated the risk of saltwater brine uplifting due to pumping with a density-dependent Finite Element model (FEFLOW). Canadian Mining Company Chile, Region III. 2003.
- Developed a three-dimensional groundwater flow model of the Northern Sector of the Salar de Atacama aquifer, for a Canadian mining company. Atacama Desert, Chile. 1999.
- Minera Los Pelambres, Chile, 2007-2008 – Principal modeler for the mine tailings regional 3-D flow and particle tracking models for seepage control and environmental impact assessment.
- ALPART – Sr. Reviewer of a finite elements red mud disposal regional FEFLOW model at a bauxite mining site in Karst environment, using two-dimensional fractured elements to simulate large fracture corridors, including effects of density-driven flows. Jamaica, 2002-2003.
- Supervised the development of EA level 3D groundwater flow models in Northern Chile: Northern Salar de Atacama Aquifer; Negrillar Aquifer, Salar de Pedernales Watershed and Piedra Pomez Aquifer (Salar de Maricunga Basin). 1999-2002. Client: Placer Dome and Rio Chilex/Rio Algoma.
- Senior reviewer for mine dewatering models in Chile (MODFLOW SURFACT, FEFLOW), including the largest underground copper mine in the world (CODELCO - El Teniente). Client: Metalica (engineering firm). 2007.
- DIAVIK (Rio Tinto), Northwest Territories, Canada, 2014: Provided training services on data management systems (2 weeks) and initial data migration services, consolidating several years of data into an MSSQL Server using SWS' software solution Hydro GeoAnalyst.
- Deep injection of Produced Water and Saltwater Intrusion Risk Assessment Model – Dos Bocas Oil Terminal, PEMEX, 2011-2013-2014. Managed a regional scale hydrogeological modeling project that included the joint assessment of the risk to shallow drinking water aquifers from both pumping for drinking water, as well as deep injection of high H₂S content produced water

into deep saline aquifers. Codes: SEAWAT and ECLIPSE. Included simulation of up to 12 directional injectors.

- Resolution Cooper Underground Mine historic dewatering/recovery flow model. Rio Tinto, Arizona, USA. 2011. Senior Reviewer of a complex underground mine historic dewatering/recovery model (Modflow Surfact), for a total of over 80 years of flow and head calibration targets.
- Managed site assessment and free phase extraction systems design/operation projects at the 3rd. largest Petrochemical facility in South America. Client – COPENE (BRASKEM). 1990-1996.

Water Resources/Water Supply

- Evaluation of groundwater pumping requirements to capture deep plumes from the Cabot-Koppers Superfund Site to the City of Gainesville Murphree well field. 2008. Client: Edmunds and Jones Inc. on behalf of the City of Gainesville, FL.
- Sr. Hydrogeologist for the regional **Mojave R-cubed** (<http://r3project.com/>) artificial recharge modeling project (ECLIPSE coupled surface water – variable saturation groundwater model). Client: Mojave Water Agency, California, 2006; 2008-2009.
- Coca-Cola FEMSA, Panama, 2013. Provided technical guidance for a saltwater intrusion risk assessment project. Project involved TDEM survey at a coastal area and preliminary SEAWAT modeling of saltwater intrusion. Panama City, Panama.
- Senior Consultant for the project “Sao Sebastiao Aquifer Zoning”. Project included elaboration of a groundwater well GIS-Database, water quality mapping, elaboration of a three-dimensional MODFLOW groundwater flow and particle tracking model; assessment of wellhead capture zones and quantification of groundwater reserves and sustainable yield; and elaboration of a Groundwater Management Plan. Bahia, Brazil, 2002-2003.
- Senior Modeling Reviewer for the groundwater flow model of the city of Bogotá, Colombia (5 million people). Project funded by the UNDP. 1999.
- Groundwater Flow Model development for the City of Lahore, Pakistan (6 million people fully supplied with groundwater wells). International Expert in Groundwater Flow Modeling for the IAEA. Prepared and calibrated a 3D Regional Model to aid in sustainable management of groundwater resources and provided technology transfer to local counterparts in Pakistan and a 3-month on-the-job training in Waterloo, Canada.
- Groundwater Flow Model development for the Caracas Valley Aquifer, Venezuela. International Expert in Groundwater Flow Modeling for the IAEA.
- Project management of a wellhead protection project for the Municipality of Caçapava, Brazil, based on a unique Modeling - GIS - Risk Assessment Methodology. Funded by CIDA, Canadian International Development Agency.
- Technical Expert in six IAEA missions to Tacna, Peru, Caracas, Venezuela, and Montevideo, Uruguay providing hands-on training on groundwater modeling, and evaluating hydrogeologic data for the development of 3-D flow models. Counterparts: Peruvian Institute of Nuclear Energy – IPEN, Venezuelan Environment Ministry – MARNR, and Obras Sanitarias del Estado – OSE (water planning/regulator).

TEACHING AND PRESENTATION HISTORY

- 2016** Groundwater Flow for Mining Operations using Visual Modflow. Custom training course delivered to Schlumberger Water Services in Hermosillo, Mexico. February 2016.
- 2015** East African Regional Groundwater Training program: Environmental Data Management, Aquifer Testing, Aqueous Geochemistry and Groundwater Flow and Transport Modeling. Arba Minch University, Arba Minch, Ethiopia, May 2015
- 2015** Aquifer Test Interpretation with AquiferTest PRO for Petroleum Scientists. Dammam, Saudi Arabia. Custom 5-day course for Saudi Aramco Hydrogeology Division. Part of the Waterloo Series 'Water for Oil and Gas Professionals'. February 2015.
- 2015** Groundwater Modeling with Visual Modflow for Petroleum Scientists. Dammam, Saudi Arabia. Custom 5-day course for Saudi Aramco Hydrogeology Division. Part of the Waterloo Series 'Water for Oil and Gas Professionals'. February 2015.
- 2014** Groundwater Modeling with Visual Modflow and Visual Modflow Flex. Unicamp University, Campinas, Brazil. 4-day course focused on conceptual and numerical modeling and practical applications.
- 2014** Groundwater Fundamentals. Dammam, Saudi Arabia. Custom 5-day course for Saudi Aramco Hydrogeology Division. Part of the Waterloo Series 'Water for Oil and Gas Professionals'. A complete course on groundwater origin, flow, water well design and construction, flow principles and equations, capture zones and impacts of pumping, groundwater resource assessment and introduction to contamination and remediation and modeling of aquifer systems.
- 2014** Environmental Data Management and Introduction to Aquifer Testing. Private 5-day course for ICE – Instituto Costaricense de Electricidad. San Jose, Costa Rica.
- 2014** Groundwater Modeling with Visual Modflow and Visual Modflow Flex. Gothenburg, Sweden. 4-day course focused on conceptual and numerical modeling and practical applications.
- 2014** Groundwater Modeling with Visual Modflow and Visual Modflow Flex. Hyderabad, India. 3-day course focused on conceptual and numerical modeling and practical applications.

- 2002-present** The New Modflow Course – Applied Groundwater Flow and Transport Modelling using Visual MODFLOW. NGWA annual short course (32 hours), delivered twice a year in Las Vegas (June) and Princeton (October).
- 2013** Introduction to environmental data management using HydroGeoAnalyst. Private course (32 hours) for SENARA – Costa Rica’s water for irrigation Government Agency. San Jose, Costa Rica.
- 2013** Introduction to environmental data management using HydroGeoAnalyst. Private course (32 hours) for Diavik Mine in Northern Canada.
- 2013** Groundwater Flow and Transport Modelling using Visual MODFLOW. Schlumberger’s open enrolment short training course. Mexico City (in Spanish). Duration: 32 hours.
- 2011** Artificial Groundwater Recharge and solutions to water table decline: the Mojave R³ (Recycle, Recharge, Reuse) Project in California. Keynote speaker at The First Integrated Water Management Seminar. CONAGUA (Mexico’s Water Protection and development Agency). Mexico City.
- 2007** Groundwater Flow and Transport Modelling using Visual MODFLOW. Schlumberger's open enrolment short training course. Sacramento, CA. 32hours.
- 2007** Groundwater Pollution Risk Assessment and Flow and Transport Modelling using Visual MODFLOW, RISC and RBCA tool kit. WHI's open enrolment short training course. Santiago, Chile, In association with Fundación Chile. 40 hours.
- 2006** Groundwater Flow and Transport Modelling for Risk Assessment using Visual MODFLOW and RISC. WHI's open enrolment short training course. Santiago, Chile, In association with Fundación Chile. 32 hours.
- 2004** Groundwater Flow and Transport Modeling and Well Placement at the Camaçari Petrochemical Complex. Private course for CETREL. 32 hours. Bahia, Brazil (In Portuguese).
- 2003** Natural Attenuation of Contaminants in the subsurface using MoNa Tool kit. Private course for CETREL. 32 hours. Bahia, Brazil (In Portuguese).
- 2001** Groundwater Flow and Transport Modelling using Visual MODFLOW. Private course for the Comisión Nacional de Energía Nuclear (Nuclear Energy Commission). Sponsored by the United State's Department of Energy. Ezeiza, Argentina (in Spanish).
- 2001-2010** Groundwater Flow and Transport Modelling using Visual MODFLOW. WHI's open enrolment short training course. In association with José Pardo Foundation. Madrid, Spain (in Spanish).

- 2001** One-Month on-the-job training on Groundwater Flow and Transport Modelling using Visual MODFLOW, for two IAEA sponsored Fellows from Uruguay.
- 2001** Groundwater Flow and Transport Modelling using Visual MODFLOW. WHI's open enrolment short training course. In association with the University of Waterloo and the Autonomous University of Mexico State. Toluca, Mexico (in Spanish). Duration: 40 hours.
- 2001** Groundwater Flow and Transport Modelling using Visual MODFLOW. WHI's open enrolment short training course. In association with the Latin American Association of Hydrogeologists. Santiago, Chile (in Spanish).
- 2001** Groundwater Flow and Transport Modelling using Visual MODFLOW. Private course for the Chilean Water Authority - (Dirección General de Aguas). Santiago, Chile (in Spanish).
- 2000** Groundwater Flow and Transport Modelling using Visual MODFLOW. WHI's open enrolment short training course. In association with José Pardo Foundation. Madrid, Spain (in Spanish).
- 2000** IAEA Latin American Region Urban Hydrology Course. Montevideo, Uruguay. Lectures on groundwater modelling. Duration: 36 hours.
- 2000** Three Presentations for Chinese counterparts of IAEA project on 'State of the Art' Groundwater Modelling Techniques and its Integration with Isotope Studies. For: Chinese Academy of Sciences; Beijing Institute of Uranium Geology, and Nanjing University. Beijing and Nanjing, China.
- 2000** Regional Training Course on numerical modelling for water resources management. Sponsored by IAEA. Bangkok, Thailand. Duration: 2 weeks. Included hands on training of representatives of 12 countries from Southeast Asia. AS part of the training, 15 groundwater flow and a couple of transport models were developed during the training, using local data brought in by participants. Model applications included water supply, water resources sustainability assessment, and mine dewatering and fate and transport of mine tailing. Codes: Modflow and MT3DMS.
- 1999** Assessment Workshop on Development of Hydrological Dynamic Simulation Models for Managing Drinking Water Resources. Sponsored by IAEA. Ho Chi Mihn City, Vietnam. Duration: 40 hours.
- 1999** Groundwater Flow and Transport Modelling using Visual MODFLOW. WHI's open enrolment short training course. In association with the University of Waterloo and the Autonomous University of Mexico State. Toluca, Mexico (in Spanish). Duration: 40 hours.

- 1998** Groundwater Flow and Transport Modelling using Visual MODFLOW. WHI's. For the Colombian Petroleum Institute. Bucaramanga, Colombia (in Spanish). Duration: 40 hours.
- 1998** Groundwater Flow and Transport Modelling using Visual MODFLOW. WHI's open enrolment short training course. In association with the University of Waterloo and the Autonomous University of Mexico State. Toluca, Mexico (in Spanish).
- 1998** Integrated Groundwater Management Using Modelling and GIS. Presentation at the Conference 'Groundwater in a Watershed Context'. National Water Research Institute, Burlington, Ontario. 1998.
- 1997** Groundwater Flow and Transport Modelling using Visual MODFLOW. WHI's open enrolment short training course. In association with the Latin American Association of Hydrogeologists. Santiago, Chile (in Spanish).
- 1997** The Vizcachas Watershed Groundwater Flow Model and its Management and Protection. Engineers College of Peru, Tacna Section (in Spanish).
- 1996** Use of 3-D Flow and Transport Models for aquifer remediation and risk assessment. For CSD-Geoklock (Brazilian Consulting firm). In Portuguese. São Paulo, Brazil. Duration: 40 hours.
- 1996** Use of Flow and Transport Mathematical Models in Groundwater Resource Management and Protection. Engineers College of Peru, Tacna Section (in Spanish).
- 1995** Invited speaker of the First International Seminar on Gasoline Stations Leak Detection, Prevention and Remediation in Brazil. Presentation: Free phase removal methods used in Brazil (in Portuguese).
- 1992** Invited teacher for the course "Technical Basis for Groundwater Contamination Prevention and Control". Sponsored by Pan-American Health Organization, and the Brazilian Association of Hydrogeologists. Salvador, Bahia, Brazil.
- 1992** Invited Teacher for the IBAMA (Brazilian Environmental Institute) annual short course on Environmental Control, co-sponsored by U. N. PNUMA. Topic: Soil and Groundwater Protection and Monitoring. Brasilia, Brazil.
- 1991** Invited to make the presentation: "Limitations of traditional groundwater sampling methods and improved alternatives". CEPIS 6th Seminar on Groundwater Pollution Prevention and Control. Sponsored by the Pan-American Health Organization (UN's PAHO). Santa Cruz de la Sierra, Bolivia.

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- 1988** Invited teacher (with Dr. Stephen Foster) at Universidad Nacional de Ingeniería for the graduate short course Groundwater Quality sponsored by the United Nations. Lima, Peru. Duration: 2 weeks.
- 1986-1994** Invited teacher at CETESB's (São Paulo Environmental Control Agency, Brazil) annual short courses, including:
- Groundwater pollution control and prevention;
 - Landfarming design and operation criteria; and
 - Industrial Landfills: project design and control procedures.

PUBLICATIONS

Foster, S., Hirata, R., Gomes, D. D'Élia, M., Paris, M. - 2001 - Groundwater Quality Protection. A guide for water service companies, municipal authorities and environmental agencies. World Bank, Groundwater Management Advisory Team (GW-Mate). Co-sponsored by WHO-PAHO-CEPIS and UNESCO-ROSTLAC-PHI.

Gomes, D.C. and R. Stuetzle – 2016. A numerical assessment of large screened wells on flow fields and solute distribution. Presented at the 2016 NGWA Groundwater Summit held in Denver, CO, May, 2016.

Graham, J.E., Martin, P.J., GOMES, D.C. - 2001 - Coupled Flow and Transport Modeling to Simulate Density Dependent Transport in a Faulted Environment. Proceedings of the Conference MODFLOW 2001 and Other Modeling Odysseys, Vol II pp.628-633. International Groundwater Modeling Centre, Colorado School of Mines, US Geological Survey. September 11-14, 2001.

Martin, P.J.M., D. Gomes, N. Guiguer. Integrated Groundwater Management Using Modeling and GIS. Groundwater in a Watershed Context Conference. National Water Research Institute, Burlington, Ontario. 1998.

Gomes, D.C., N. Guiguer, R. Rojas, G. Palza, O. Avallos, L. Araguas Araguas. Use of Groundwater Three-Dimensional Flow Models for Aquifer Management and Environmental Impact Assessment: The Example of a Volcano-Sedimentary Valley Aquifer in Southern Peru. Keynote paper presented at the Conference Water Quality Problems in the Mediterranean. IAWQ. North Cyprus. 1997.

Gomes, D.C. Coastal Aquifer Pollution Due To Land Disposal of Sulphuric Acid and Inorganic Wastes from a Titanium Dioxide Plant. M.Sc. Thesis. Instituto de Geociencias, University of São Paulo, Brazil. 1994.

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Gomes, D.C., M. Alarsa, M.C. Salvador, and C. Kupferschmid. Environmental Soil and Groundwater Assessment Using High Resolution Passive Soil-Gas Samplers - Petrex Method: Methodology and Results of a Case-Study Performed in Brazil. In: Water Science and Technology, Vol.29 (8): 161-172. United Kingdom. 1993.

Gomes, D.C., R.C.A. Cunha, and E. Gloeden. Evaluation of a Petroleum Refinery Land Treatment Unit Using Unsaturated Zone Monitoring Data. In: Water Science and Technology, Vol. 24(12): 217-227. United Kingdom. 1991.