

## RESUME

### I. Personal Information

- **Name:** Luis Alonso Díaz-Robles
- **ID:** 11.162.556-5
- **Nationality:** Chilean
- **Date of Birth:** November 10, 1967, Location of Birth: Ovalle, Chile
- **Marital Status:** Married and two kids
- **Address:** Belfast # 03175, Barrio Inglés, Temuco, Chile.

### II. Present Occupation

Dean of the College of Engineering  
Associated Professor of the School of Environmental Engineering  
Vice Director of the Centre of Renewable Energies and Environmental Quality, CREEQ  
Director of the Air Quality Unit (AQU), [www.uctemuco.cl/aire](http://www.uctemuco.cl/aire)  
Catholic University of Temuco, Temuco, Chile  
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### III. Academic Background

Period	Major, degree, institution, country
2005	Ph.D. in Civil Engineering (Air Quality), Department of Civil & Environmental Engineering, University of Tennessee, Knoxville, Tennessee, United States. Dissertation Title: "Health Risk Assessment Posed by the Mobile Source Air Toxics on an Urban to Regional Area."
2005	Minor in Statistics, Department of Statistics, University of Tennessee, Knoxville, Tennessee, United States.
1993	Chemical Civil Engineer, Department of Chemical Engineering, Universidad de Santiago de Chile, Chile. Thesis Title: "Dynamic Simulation of the Mass and Heat Transfer of an Industrial Rotator Direct Dryer."
1992	BS in Sciences of Engineering, Department of Chemical Engineering, Universidad de Santiago de Chile, Chile. Research and Consulting Experience

### IV. Research Experience

Dr. Díaz-Robles has been actively involved in numerous air quality related projects. His experience covers a broad range of areas, from emission inventory development and processing, to emission factors, air quality modeling, air quality forecasting models, air quality monitoring, emissions data acquisition, and health risk. He has worked on application of scientific principles concerning movement and fate of chemicals at

interfaces of air, water, and earthen solids in environment. It has included methods of assessing risk posed by presence of those chemicals. His last research work has included international air quality modeling assessment; characterizing diesel fueled sources and mobile sources air toxics (benzene, 1,3-butadiene, formaldehyde, acetaldehyde, acrolein, and diesel particulate matter) on air quality impacts, and health risk assessment. His research has also included development of environmental decision support system on identification and demonstration of how decision support and optimization can assist in the development of large-scale environmental management and policies.

## **V. Research and Consulting Areas**

- Urban air quality management and air pollution control
- Air quality modeling
- Indoor air quality
- Fate and transportation of pollutants
- Health and environmental risk assessment
- Development of renewable energies and biomass utilization

## **VI. ISI Publications.**

Díaz-Robles L.A., J.S. Fu, G.D. Reed, Emission Scenarios and the Health Risk Changes Posed by Priority Mobile Air Toxics on an Urban to Regional Area; an application in Nashville, Tennessee, Environment International, Submitted March 2010.

Cereceda-Balic F, Díaz-Robles L.A., Vidal V., Guevara J.L, Cayón J.L., Claudio Saavedra, and Etcharren P.” Speciation of Volatile Organic Compounds (VOCs) in the atmosphere of O'Higgins's region-Chile”, Journal of the Air & Waste Management Association, Submitted March 2010.

Díaz-Robles L.A., Fu J.S., and Reed G.D., “Seasonal Distribution and Modeling of Diesel Particulate Matter in the Southeast US.”, Environment International, 35 (6), 956–964, 2009.

Sanhueza P.A., Díaz-Robles L.A., Torreblanca M.A., Shiappacasse L.N., Silva M.P., and Astete T.D., “Particulate Air Pollution and Health Effects for Cardiovascular and Respiratory Causes in Temuco City, Chile; A Woodsmoke Polluted Urban Area.”, Journal of the Air & Waste Management Association, 59, (12) 1481-1488, 2009.

Díaz-Robles, L.A.; Ortega-Bravo, J.C.; Fu, J.S.; Reed, G.D.; Chow, J.C.; Watson, J.G.; and Moncada, J.A. “A Hybrid ARIMA and Artificial Neural Networks Model to Forecast Particulate Matter in Urban Areas: The Case of Temuco, Chile.” Atmospheric Environment. 42 (35) 8331-8340, 2008.

Díaz-Robles L.A., Fu J.S., and Reed G.D., “Modeling and Source Apportionment of Diesel Particulate Matter.” Environment International, 34 (1), 1-11, 2008.

Tonn B.E., Peretz J.H., Reed G.D., and Díaz-Robles L.A., “Ozone Concentrations Around the Great Smoky Mountains”, Futures Research Quarterly, 21:3:56 (2005).

Peretz J.H., Tonn B.E., Garnmeister S., Reed G.D., Díaz-Robles L.A. "Impact of Status Quo on Air Pollution in the Great Smoky Mountains National Park," Public Works Management & Policy, 2005 10: 170-185.

## **VII. Participation in seminars, conferences, and congresses**

- 2010 **Luis A. Díaz-Robles**, Juan Moncada-Herrera, Nicolás Schiappacasse P., Pablo Etcharren, Francisco Cereceda-Balic, Robert Flocchini, Paul Wakabayashi, Nathalie Araneda, Ingrid Pérez, "Source Apportionment of PM<sub>2.5</sub> in Temuco, Chile, Using Factor Analysis and IMPROVE Sampling. A Seasonal Analysis." Extended Abstract 250, A&WMA International Specialty Conference: Leapfrogging Opportunities for Air Quality Improvement, Xi'an, China, 2010.
- 2010 **Luis A. Díaz-Robles**, Eddio Carimán, Pablo Etcharren, Francisco Cereceda-Balic, Cristian Varela-Bruce, "Modeling the Biogenic Emissions using WRF/MCIP/MEGAN in Chile; a Comparison among three Urban Areas." Extended Abstract 252, A&WMA International Specialty Conference: Leapfrogging Opportunities for Air Quality Improvement, Xi'an, China, 2010.
- 2010 Francisco Cereceda-Balic, Víctor Vidal C, Juan L. Guevara, **Luis A. Díaz-Robles** et al., "Speciation of Volatile Organic Compounds (VOCs) in the Atmosphere of O'Higgins's Region-Chile." A&WMA International Specialty Conference: Leapfrogging Opportunities for Air Quality Improvement, Xi'an, China, 2010.
- 2010 Francisco Cereceda-Balic, Nicolás Schiappacasse, Víctor Vidal, **Luis A. Díaz-Robles** et al., "Atmospheric PAHs Determination: Influence of the Air Sampling Time Program in the Occurrence of Artifacts." A&WMA International Specialty Conference: Leapfrogging Opportunities for Air Quality Improvement, Xi'an, China, 2010.
- 2010 **Luis A. Diaz-Robles**, Nathalie Araneda, Ingrid Pérez, Joshua S. Fu, and Nicolás Schiappacasse, "Polycyclic Aromatic Hydrocarbons (PAHs) Changes Posed by Residential Wood Combustion Scenarios on an Urban Area; an Application in Temuco, Chile." School of Environmental Engineering, College of Engineering, Catholic University of Temuco, Temuco, Chile, Extended Abstract 2010-A-1191-AWMA, Proceedings of the A&WMA's 103th Annual Conference & Exhibition 2010, Calgary, Canada. 2010.
- 2010 **Luis A. Diaz-Robles**, Juan C. Ortega, María Paola Silva, and Marcela Guerrero, Particulate Air Pollution and Health Effects for Cardiovascular and Respiratory Causes over an Industrial Neighborhood; Linking Epidemiological Time Series Studies and the Power of a Health Perception Survey." Extended Abstract 2010-A-1411-AWMA, Proceedings of the A&WMA's 103th Annual Conference & Exhibition 2010, Calgary, Canada. 2010.
- 2009 Eddio Carimán Linares, **Luis A. Diaz-Robles**, Cristian Varela-Bruce, and Pablo Etcharren Ulloa, School of Environmental Engineering, College of Engineering, Catholic University of Temuco, Temuco, Chile, 8th Annual CMAS Models-3 User's Conference, October 19-21, 2009 Chapel Hill, NC
- 2009 **Díaz-Robles L.A.**, Etcharren P., Moncada-Herrera J., Araneda N., Pérez I., Flocchini R., Wakabayashi P., Schiappacasse L.N, and Cereceda-Balic F., "Source Apportionment of High Episodes of PM<sub>2.5</sub> in Temuco, Chile, Using

- Factor Analysis and IMPROVE Sampling.”, Extended Abstract 2009-A-641-AWMA, Proceedings of the A&WMA’s 102th Annual Conference & Exhibition 2009, Detroit, Michigan, US.
- 2009 Cereceda-Balic F., Fadic X., Llanos A., Vidal V., Schiappacasse L.N, **Díaz-Robles L.A.**, and Etcharren P. “Application of a new methodology for determining Polycyclic Aromatic Hydrocarbons (PAHs) in atmospheric aerosols using different filter configurations, PUF and XAD-Denuder.”, Extended Abstract 2009-A-623-AWMA, Proceedings of the A&WMA’s 102th Annual Conference & Exhibition 2009, Detroit, Michigan, US.
- 2009 Cereceda-Balic F., Fadic X., Llanos A., Vidal V., Schiappacasse L.N, **Díaz-Robles L.A.**, and Etcharren P. “Obtaining PAH Concentration Ratios and Molecular Markers for Residential Wood Combustion: Temuco, a Case Study.”, Extended Abstract 2009-A-600-AWMA, Proceedings of the A&WMA’s 102th Annual Conference & Exhibition 2009, Detroit, Michigan, US.
- 2008 Sanhueza P., **Díaz-Robles L.A.**, "Particulate Air Pollution and Health Effects for Cardiovascular and Respiratory Causes in Temuco City, Chile." Paper # EE-1a-186-AWMA, Proceedings of the A&WMA’s 101th Annual Conference & Exhibition 2008, Portland, Oregon, US.
- 2007 **Díaz-Robles L.A.**, Ortega-Bravo J.C. “A Hybrid ARIMA and Artificial Neural Networks Model to Forecast Particulate Matter in Urban Areas: The Case of Temuco, Chile.” Paper # AB-1a (1)-522-AWMA, Proceedings of the A&WMA’s 100<sup>th</sup> Annual Conference & Exhibition 2007, Pittsburgh, Pennsylvania, US, 2007.
- 2006 **Díaz-Robles L.A.**, Fu J.S., and Reed G.D., “Health Risk Assessment Posed by Primary Diesel Particulate Matter and Vapor Air Toxics in Southeastern US”, Paper # EE-1c (2)-417-AWMA, Proceedings of the A&WMA’s 99<sup>th</sup> Annual Conference & Exhibition 2006, New Orleans, Louisiana, US, 2006.
- 2006 **Díaz-Robles L.A.**, Fu J.S., and Reed G.D., “Seasonal Distribution and Modeling of Diesel Particulate Matter in the Southeast US”, Paper # AB-1a (2)-491-AWMA, Proceedings of the A&WMA’s 99<sup>th</sup> Annual Conference & Exhibition 2006, New Orleans, Louisiana, US.
- 2005 **Díaz-Robles L.A.**, Reed G. D., and Fu J. S., University of Tennessee. “Diesel Particulate Matter Modeling and Inhalation Cancer Risk in Nashville, Tennessee, using Models-3/CMAQ.” Poster presentation at the 4th Annual CMAS Models-3 User’s Conference. UNC-Chapel Hill, 26-28 September 2005.  
[http://cf.cmascenter.org/html/2005\\_conference/conf\\_agenda.cfm](http://cf.cmascenter.org/html/2005_conference/conf_agenda.cfm)
- 2005 **Díaz-Robles L.A.**, Reed G. D., and Fu J. S., University of Tennessee. “Source Apportionment of Diesel Particulate Matter in the Southeastern United States Using Models3-CMAQ.” Proceedings of the 14<sup>th</sup> International Emissions Inventory Conference, Session 5. Las Vegas, Nevada, 2005.  
<http://www.epa.gov/ttn/chief/conference/ei14/index.html>
- 2005 Vllasi E, **Díaz-Robles L.A.**, Yun J, University of Tennessee. "A Methodology to Validate the 2002 Air Toxics Inventory for Tennessee." Proceedings of the 14<sup>th</sup> International Emissions Inventory Conference, Session 10. Las Vegas, Nevada, 2005. <http://www.epa.gov/ttn/chief/conference/ei14/index.html>
- 2004 **Díaz-Robles L. A.**, Greene D., Reed G. D., and Fu J. S., University of Tennessee. “The Effect of Switching Mobile Sources to Natural Gas on the Ozone in the

- Great Smoky Mountains National Park.” Proceedings of the A&WMA 97<sup>th</sup> Annual Conference & Exhibition 2004. Session: ET-1b: Cost and Emission Control Effectiveness of Transportation Control Measures, Indianapolis, Indiana, 2004.
- 2004 May 21<sup>st</sup>, 2004  
Coal Gasification: What are you afraid of? The American Institute of Chemical Engineering, Oak Ridge, TN, US.
- 2004 December 7-10<sup>th</sup>, 2004  
Society for Risk Analysis, Annual Meeting, Baltimore, US.
- 2001 June 14<sup>th</sup>, 2001  
PROCHILE Araucania Seminar “Environment and Competitively: A challenge for the exporting sector from the Araucania Region.” Temuco
- 1999 October 6-8<sup>th</sup>, 1999  
XVIII Congress in Engineering Education, Chilean Engineering Education Association, SOCHEDI, University of Concepcion, Chile.
- 1998 September 2-4<sup>th</sup>, 1998  
AIDIS-Chile, Seminar “Operation of Activated Sludge Wastewater Treatment Plants.” Santiago, Chile.
- 1996 SERCOTEC, Competing with Quality Market, Conversations among Big Business and its Supplier Development Provider, Santiago, Chile.
- 1995 Unilever Chile S.A., Total Quality Course, Viña del Mar, Chile.
- 1994 Unilever Chile S.A., Managing the Risk Prevention and First Aid, Ex Planta Lontue, Chile.

### **VIII. Research and Consulting GRANTS**

Period	Fund, institution, name of the study, budget, responsibility
2010-2014	INNOVA-CORFO project “Centre for Renewable Energies and Environmental Quality (CREEQ).” US\$ 781,000, Vice-Director.
2010-2014	FONDEF (Fund for the Promotion of Scientific and Technological Development) project “Research and generation of air pollutant emission factors for residential wood combustion of national importance.” US\$ 1,412,000, Director.
2009-2010	FONIS (Health Research Funding) project, “Ultrafine particulate matter pollution, mortality, and morbidity at Temuco; susceptibility among the elderly and children.” US\$ 120,000, Director.
2009-2011	FONDEF (Fund for the Promotion of Scientific and Technological Development) project, “Research and Development of a Technological Packet to Produce Cellulosic Ethanol from Hybrid Poplars in Chile.” US\$ 1,150,000, Vice-Director
2009-2011	INNOVA-CORFO, “Technologies Development for firewood burning, cleaner and more efficient for domiciliary use.” US\$ 1,100,000, Vice-Director
2009	CONAMA Los Lagos Project, “Determination of the saturated zone of particulate matter in Osorno” US\$ 10,000, (Director)

- 2009 CONAMA Araucania Project, “Emissions scenarios analysis using WRF/SMOKE/CMAQ at Temuco, a non-attainment area for particulate matter” US\$ 30,000, (Director)
- 2009 CONAMA Valparaiso Project, “General Analysis and Proposal for the Atmospheric Decontamination Plan of Ventanas.” US\$ 34,000, (Co-Inventigator)
- 2008 CONAMA O’Higgins Project, “Diagnostic study of the VOCs inventory and photochemical campaign at Rancagua city.” US\$ 104,000, (Vice-Director)
- 2008 CONAMA Bio-Bio Project, “Emissions Inventory Development for Metropolitan Concepcion, Chile.” US\$ 32,000, Principal Investigator (PI)
- 2008 CONAMA Bio-Bio Project, “Emissions Inventory Development for Chillan and Los Angeles Urban Areas, Chile.” US\$ 62,000, Principal Investigator (PI)
- 2008 CONAMA Bio-Bio Project, “Short term effects analysis due to atmospheric pollution over mortality and morbidity by respiratory and cardiovascular diseases in the Concepcion and Talcahuano area, Chile.” US\$ 32,000, PI
- 2008-2010 FNDR-CONAMA Araucanía, Catholic University of Temuco, “Emissions Measurement from Wood Devices.”, which includes to build and implement an emissions laboratory with EPA’s standard methods to measure emissions, and estimate emission factors for the main wood devices used in the south of Chile to heating or cooking. UCT-FNDR 30040008-0, US\$ 66,000, PI
- 2008-2009 “Mega Monitoring of Temuco’s Air Quality” International Collaboration with the University of California, Davis, University of Siena, Italy, Universidad Técnica Federico Santa María, Chile, CONAMA Araucanía, and Catholic University of Temuco, Principal Investigator (PI).
- 2007-2009 DIUCT, Research Direction, Catholic University of Temuco, “Chemical dispersion, fate, and transport of pollutants over air and soil resources base on the high performance Cluster Beowulf architecture as tool to solve complex problems of scientific calculus.” DIUCT number 2006-2-03, US\$ 30,000, PI.
- 2006-2007 FNDR-CONAMA Araucanía, University of Santiago of Chile, Catholic University of Temuco, “Short term effects analysis due to particulate matter atmospheric pollution over mortality and morbidity by respiratory and cardiovascular diseases in Temuco, Chile.” US\$ 24,000, Co-PI.
- 2007-2008 CONAMA Maule, Catholic University of Temuco, “Environmental impact assessment generated by the presence of pollutants in the Mataquito River and Design of an Environmental Restoration and Recovering Plan.” Water Quality Modeling, US\$ 312,000. Co-PI
- 2004-2005 Waste Management Research and Educational Institute, University of Tennessee, “Source apportionment of diesel particulate matter in the southeastern United States using advanced air quality modeling.” Co-PI

- 2003-2005 Waste Management Research and Educational Institute, University of Tennessee, "Air Toxic Pollutants Control to Reduce Health Risks in Tennessee." US\$73,010, Co-PI.
- 2002-2004 U.S. Environmental Protection Agency (EPA), University of Tennessee, "Air Quality Initiative for the Great Smoky Mountains National Park." US\$750,000. Co-PI.
- 2002-2003 FNDR Regional, Catholic University of Temuco, "Comprehensive Emission Inventory Development of Persistent Organic Pollutants in the Araucania Region, Chile." PI
- 1993-1996 Unilever Chile S.A., COPRONA S.A., Production Department, Optimization of the Grape Seed Oil Production, PI.
- 1993-1996 Unilever Chile S.A., COPRONA S.A., Production Department, Optimization of the Oil Winterization Process, PI.

## IX. Teaching

Period	Institution, <b>graduate program</b> , course
2007-to date	Catholic University of Temuco, Master of Environmental Engineering Air Quality Management and Air Pollution Control Air Quality Modeling, Applied Time Series Environmental Risk Assessment
2006-2008	Catholic University of Temuco, Master of Territorial Planning Research and Applied Multivariate Statistics.
2000-2001	Catholic University of Temuco, Major in Environmental Management. Waste Management

Institution, **undergraduate program**, course, period

Catholic University of Temuco, under graduate programs of Environmental Engineering, Chemical Engineering, and Industrial Engineering:

- Air quality management and air pollution control (2006-to date)
- Air quality modeling (2006-2008)
- Pollutant Fate Modeling & Environment Risk Assessment (2006-2008)
- Introduction to engineering (2007)
- Solid waste management (2006)
- Waste water treatment (1999-2001)
- Transport phenomena (1998-2001)
- Heat transfer (1998-2001)
- Dynamic simulation and process control (1998-2001)

## **X. Thesis advising**

Year	Student, institution, title, status, responsibility
2010	Ignacio Fernández, Catholic University of Temuco, "Environmental Risk Assessment for Mercury Exposure Emitted from Coal Burning Power Plants in the Puchuncaví Area." Starting, Advisor
2010	Delia Franco Espinoza, Catholic University of Temuco. "Installation and start up of a Suitcase Dilution Tunnel for measuring emission factors from wood stove devises." Starting, Advisor
2010	Guisselle Soto, Catholic University of Temuco, "Source Apportionment of PM2.5 in Temuco, Chile, Using PMF and UNMIX models and IMPROVE Sampling." Starting, Advisor
2010	Samuel Cortés, Catholic University of Temuco, "Mortality and morbidity short term effects due to particulate matter in Chile, re analysis using gam.exact." Almost done, Advisor
2010	Cristian Varela, Catholic University of Temuco, "Health Risk Assessment due to SO2 exposure using CMAQ Air Quality Modeling: the Case of Puchuncaví-Ventanas." Finished, Advisor.
2010	Miguel Morales, Catholic University of Temuco, "Design and fluid dynamic simulation of a dilution tunnel to sample VOCs and particulate matter from combustion processes; a FLUENT software application." Finished, Advisor
2010	Ingrid Pérez, Catholic University of Temuco, "Health risk assessment due to PAHs exposure at Temuco; a Models-3/CMAQ simulation." Finished, Advisor
2010	Nathelie Araneda, Catholic University of Temuco, "Emissions scenarios analysis to reduce PAHs at Temuco; a Models-3/CMAQ simulation." Finished, Advisor
2009	Eddio Carimán, Catholic University of Temuco, "Biogenic Sources Emission Inventory using WRF/MEGAN model." Finished, Advisor.
2009	Patricio Rojas, Catholic University of Temuco, "Concentration Prediction of Fine Particulate Matter Using AOD from MODIS, CALIPSO, and MISR Satellites: The Case of Santiago of Chile." Finished, Advisor
2009	Carlos Oñate, Catholic University of Temuco, "Mobile Sources Emission Inventory for Temuco using MOBILE6.2 and NONROAD models: 2005 and 2020." Finished, Advisor.
2009	Francisco Hohmann, Catholic University of Temuco, "Hybrid ARIMA and Artificial Neural Networks Models to Forecast Particulate Matter in Urban Areas: A Cluster Analysis." Finished, Advisor
2008	Sergio Dávila, Catholic University of Temuco, "Installation and start up of a laboratory for measuring particulate matter and gases emissions from wood stove devises." Finished, Advisor

- 2008 Evelyn Castel, Catholic University of Temuco, "Area Sources Emission Inventory for Temuco 2005 and 2020." Finished,, Advisor.
- 2008 Jaime Andrés Romero Acevedo, Catholic University of Temuco, "Hexanuronic acid removal in eucalyptus kraft pulp using peracids" Finished, Co-Advisor.
- 2007 Felipe Humberto Barrientos Watson, Catholic University of Temuco, "Characterization and Treatment of Liquid Effluents from a Cellulose Bleaching Step with Per-acids." Finished, Co-Advisor.
- 2007 Juan Carlos Ortega, Catholic University of Temuco, "A Hybrid ARIMA and Artificial Neural Networks Model to Forecast Particulate Matter in Urban Areas: The Case of Temuco, Chile." Finished, Advisor.
- 2006 Viviana Espinoza Carrasco and Susana Sánchez Valenzuela, Catholic University of Temuco, "Technical and Economical Study for the Integral Management of Municipal Solid Waste of Temuco and Surrounding Counties." Finished, Co-Advisor.
- 2006 Claudia del Carmen Paredes Tapia, Catholic University of Temuco, "Study of the technical and economic feasibility for the implementation of a manual landfill manual for the Ercilla county, Chile." Finished, Co-Advisor.
- 2003 Carolina Camelio and Carola Soto, Catholic University of Temuco, "Emissions Inventory of Persistent Organic Pollutants in the Araucania Region, Chile." Finished, Advisor.
- 2002 Daniela Fariña, Catholic University of Temuco, "Design of an aerobic biological pilot waste water treatment plant for teaching." Finished, Advisor.
- 2001 José Raúl Henríquez L. y Jorge Mauricio Sandoval Errázuriz, Catholic University of Temuco, "Feasibility study on the technical and economic recovery and purification of bovine hemoglobin through the ultrafiltration process in the slaughterhouses of Chile." Finished, Co-Advisor
- 2000 Martín Fierro, Catholic University of Temuco, "Process optimization of the trementine recovering in CMPC Celulosa S.A., Planta Pacífico." Finished, Advisor.
- 2000 Antonieta Pilar Molina Inostroza, Catholic University of Temuco, "Reverse osmosis process simulation under a spiral configuration for the heavy metals elimination from industrial wastewater " .Finished, Advisor.
- 2000 Waldemar Andrés Cepeda Valenzuela, Catholic University of Temuco, "Estimating the ecological risk associated with discharges of urban effluents in the middle of the river Cautín, Temuco, Region IX, Chile." Finished, Co-Advisor.
- 2000 Christian Moisés Báez Valles, Catholic University of Temuco, "Concentration of sulphate cadmium and nickel sulphate solutions using a reverse osmosis system." Finished, Co-Advisor.
- 2000 Luis Wolfredo Alejandro Henríquez, Catholic University of Temuco, "Application of the ISO 14000 standard in the IX Region, Chile." Finished, Co-Advisor.

1999 Marcelo Cofré, Catholic University of Temuco, “Water quality modeling of the Cautin river.” Finished, Advisor.

## **XI. Management Experience**

Dr. Díaz-Robles is the Dean of the College of Engineering since January 2009. He provides leadership and vision and oversees all aspects of the College's activities, including academic planning and faculty recruitment, budgetary and personnel matters, fund raising, and management and development of physical resources. Dr. Díaz-Robles has been responsible for developing relations and enhancing connections with leaders from other disciplines, schools, and industry and for raising the College's profile both within the University and externally, in national and international contexts. So far, the College of Engineering has a total of 60 full-time faculties, lecturers, and staff members, 1000 undergraduate students, and 35 graduate students. The College offers one MS degree, and six B.S. degrees; Environmental Engineering, Chemical Engineering, Informatics Engineering, Accounting, Commercial Engineering, Industrial Engineering, and a Common Engineering Plan.

Dr. Díaz-Robles is the Director of the Air Quality Unit since 2006. He is responsible for the operation of Laboratories, including oversight and leadership for Strategic Planning for it and supporting research and consultant activities. His responsibilities includes assisting faculty in identifying new multidisciplinary research opportunities, reviewing project proposals, managing grants and contracts and developing research collaborations with North American Universities, European Universities, Chilean Universities, International Associations, and local Government Agencies.

Dr. Díaz-Robles was the Head of the School of Environmental Engineering (SEE) between January 2006 and January 2008. He was responsible for the operation of the School, including oversight and leadership for Strategic Planning for the School, current graduate and undergraduate programs, development of new programs, and support of research activities. His responsibilities included mentoring new faculties, assisting faculty in identifying new multidisciplinary research opportunities, reviewing project proposals, managing grants and contracts and developing research collaborations with North American Universities, Chilean Universities, International Associations, and local Government Agencies. Dr. Díaz-Robles has also been responsible for fiscal planning and resource management, supervising office staff and technicians. Actually, the SEE has a total of 13 full-time faculties, lecturers, and staff members. The SEE offers three B.S., Environmental Engineering, Chemical Engineering, and Industrial Engineering, and one M.S. in Environmental Engineering.

As Process Refinery Engineer at the Unilever Chile S.A. (1993-1997), Dr. Díaz-Robles was responsible for the operation, production, and health and safety of the two oil refinery plants, Lontue Plant and Panamericana Norte Plant. It included leadership for 115 employees at Lontue Plant, development of new products, quality control, training, production planning, and transportation management of the products and raw materials.

## **XII. Membership in Professional and Honorary Societies**

- **Air and Waste Management Association (A&WMA)**. Member from 2002 to day. 2003-2004, **President** of the Graduate Student Chapter  
Department of Civil and Environmental Engineering  
University of Tennessee  
Knoxville, TN 37996-2010, US  
(423) 974-7728 Fax: (423) 974-2669
- Member of the **Scientific Steering Committee** of the First China A&WMA International Specialty Conference; Leapfrogging Opportunities for Air Quality Improvement, May 10-14, 2010, Xi'an, Shaanxi Province, China.
- **Reviewer** of the 2009 AWMA's Critical Review, "Remote Sensing of Particulate Pollution from Space: Have we Reached the Promised Land?"
- **Chair** of the Atmospheric Chemistry Technical Council of the A&WMA 2010-2013
- **Vice-Chair** of the Atmospheric Chemistry Technical Council of the A&WMA 2007-2009
- **Chairman (Editor)** of an AB-1 and AB-2 Sessions at the 103<sup>th</sup> A&WMA Conference, June 2010, Calgary, Canada.
- **Chairman (Editor)** of an AB-1 and AB-2 Sessions at the 102<sup>th</sup> A&WMA Conference, June 2009, Detroit, Michigan, US.
- **Chairman (Editor)** of an AB-1 and AB-2 Sessions at the 101<sup>th</sup> A&WMA Conference, June 2008, Portland, Oregon, US.
- Member of the Sub Technical Committee of the AWMA's for **Critical Reviews**, 2008-2010.
- **Co-Chairman (Editor)** of an AB-1 Session (Particulate matter pollution) at the 100<sup>th</sup> A&WMA Conference, June 26-28, 2007, Pittsburgh, Pennsylvania, US.

## **XIII. Achievements/Honors/Awards**

- **Research Excellence Award**, Catholic University of Temuco, 2009.
- **Academic Excellence Award**, Catholic University of Temuco, 2008.
- **Regional Personality of the Year Award**, Productive Development Area, Araucania, 2007.
- **MECESUP UCT-02**, Ph.D. Scholarship for the academic years 2002-2004.
- **Best World Wide Student Chapter** of the A&WMA, 2003-2004. Dr. Díaz-Robles was the President.
- English Language Institute at the University of Tennessee, two Honor Certificates. (2002)
- **Ranked first** in the 1985 Academic Aptitude Exam, (P.A.A. in Spanish) (Chemistry and Biology) at the Limarí Province, Chile.

#### **XIV. Relevant Experience:**

- January 2009-to date: Dean of the College of Engineering, Catholic University of Temuco, Chile.
- May 2010-to date: Vice-Director of the Centre for Renewable Energies and Environmental Quality, CREEQ, Catholic University of Temuco, Chile.
- January 2006-to date: Director of the Air Quality Unit, Catholic University of Temuco, Chile.
- January 2006-February 2008: Head of the School of Environmental Engineering, Catholic University of Temuco, Chile.
- January 2009 to date: Associate Professor, Environmental Science School, Catholic University of Temuco, Chile.
- August 1998-December 2001: Academic Secretary, Environmental Science School, undergraduate program, Catholic University of Temuco, Chile.
- March 1998-December 2008: Assistant Professor, Environmental Science School, Catholic University of Temuco, Chile.
- September 1993-December 1997: Process Refinery Engineer, Lontue and Panamericana Norte Plants, COPRONA S.A., Unilever Chile S.A. January-February 1990: Professional Practice, Department of Supply, Compañía Minera Panulcillo S.A., ENAMI, Chile.
- January-February 1992: Professional Practice, Department of Production, Envases e Impresos S.A, Buin Plant, Santiago, Chile
- January-February 1991: Professional Practice, Chemical Laboratory, Compañía Minera Panulcillo S.A., ENAMI, Chile.

#### **XV. Representation and Participation Activities:**

- Member of the Council of the Deans of Colleges of Engineering, 2009-to date
- Member of the Consultative Council, COREMA Araucanía Region, 2006-2008.
- Official Representation of the Catholic University of Temuco President during June 2007 in US. Visit at the University of Tennessee, Desert Research Institute, and the University of California, Davis, US.

#### **XVI. Extension activities**

2010	Reviewer of the Journal of the Air & Waste Management Association
2009-2011	DAAD Project “Strategic Management of College of Engineering”, Catholic University of Temuco, Technical University of Berlin, and Escuela Politécnica Nacional, Ecuador, co-investigador (Decano)
2009	Extensión project, Open House of the College of Engineering. Director
2007	Reviewer Journal Gestión Ambiental
2004	Reviewer FONDECYT 106/0706 Project: A Hybrid approach to urban air quality modeling.
2000	Reviewer of the Project “Calculation of Liquid-Vapor Equilibrium binary mixtures through equations of state of Redlich-Kwong Family.” Universidad de Playa Ancha.

## **XVII. Other skills**

- Languages: English and Spanish.
- Computer skills: Site Conceptual Exposure Model (SCEM) Builder, Multimedia Models (Level I, II, and III), Air Dispersion and Air Quality Models (SCREEN, CALINE, ISC, AERMOD, OZIPPR, MOBILE6.2, NMIM, SMOKE, EGAS, CMAQ, MCIP, MM5 (NCAR using bluesky machine), PAVE, Water Quality Models (AQUATOX, WASP7.0, CORMIX), MATLAB and Neural Networks, FORTRAN, and Statistic Software (SAS, SAS Enterprise Miner, NCSS, and JMP).

Luis Alonso Díaz –Robles, Ph.D.