Pontificia Universidad Católica de Chile

Institute full name: **Pontifical Catholic University of Chile,** School of Engineering, Department of Hydraulic and Environmental Engineering

Institute acronym: PUC

Institute logo:

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Institute profile: The Pontificia Universidad Católica de Chile (PUC), founded on 1888, has 21,000 undergraduate and graduate students and 2,000 professors. It offers training in traditional professions and in technological and practical fields such as business, accounting, chemistry, and civil engineering, among others. In 1930, it was declared a Pontifical University, and in 1931 it was granted academic autonomy by the Chilean government. The PUC is a private (with public support), urban, multi-campus University. It is one of eight Catholic Universities in Chile, and one of 61 institutions within the Chilean university system. It has 18 Faculties that are distributed on four campuses in Santiago and one regional campus located in southern Chile. The university's leadership in research and graduate programs has had considerable influence on the country's cultural and scientific development, making its intellectual, creative, and spiritual capacity available to the community. In addition, PUC has been ranked among the top five universities in the Spanish speaking world. The School of Engineering at PUC ranks among the top Latin American engineering institutions and is one of the leading Schools within the University. The main objectives of the School of Engineering at PUC are to prepare students for their professional careers, and to improve the knowledge in the engineering profession and the quality of engineering practice. Its undergraduate and graduate teaching programs are accredited by the Chilean Accreditation Commission (CNA), and the undergraduate programs are also accredited by the Accreditation Board of Engineering and Technology (ABET) of the US.
The Department of Hydraulic and Environmental Engineering belongs to the School of Civil Engineering. The Department trains Civil Engineers and graduate students (M.Sc. and Ph.D. level) to deal with problems related to understanding, planning, design and operation of hydraulic, hydrological and environmental systems. The Department integrates in its teaching and research activities three main areas: (1) *hydraulics and fluid mechanics*: oriented to the study multiphase flows, fluvial and oceanic hydraulics, erosion and sedimentation in rivers, design of hydraulic structures, urban hydraulics, and stormwater management techniques; (2) *hydrology and water resources*: focused on mathematical modeling of rainfall and runoff, hydrological design, ecosystem hydrology, probabilistic and stochastic hydrology, regional flood analysis, drought studies, hydrogeological models to evaluate groundwater resources, flow and solute transport in the vadose zone and in saturated soils, and density-driven (due to changes in temperature and salinity) flows in aquifers; and (3) *water quality and environmental engineering*: addressing topics such as wastewater treatment, remediation of contaminants in the environment, environmental microbiology, modeling of the fate and transport of organic and inorganic contaminants, and environmental management.

Involved personnel

Name	*Contact details*	*Key qualifications*	*Photo*
Prof. Jorge Gironás	Tel: +56 2 354 5849 j.gironas@ing.puc.cl	He is an Assistant Professor at the Department of Hydraulic and Environmental Engineering. His areas of interests are in hydrologic sciences and engineering. His research focuses on the study of hydrologic processes, particularly in urban settings. Specific interests include the assessment and control of hydrologic impacts of urbanization and urban water control, watershed management and physical hydrology. He is an expert in the EPA model SWMM, and is the main author of its applications manual. Dr. Gironás teaches graduate and undergraduate classes in Hydrology and Urban water systems.	
Prof. José F. Muñoz	Tel: +56 2 354 4221 jfmunoz@ing.puc.cl	He is a Professor at the Department of Hydraulic and Environmental Engineering. His areas of interests are in hydrology, hydrogeology, and modeling of flow and solute transport in saturated and unsaturated porous media. He has led several projects for national agencies and private companies related to water resources, and served as strategic advisor to several companies on issues related to assessment, and water resource management. Dr. Muñoz teaches graduate and undergraduate courses in Groundwater, Fluid Mechanics, Hydraulics and Applied Hydrogeology.	
Prof. Bonifacio Fernández	Tel: +56 2 354 4241 bfernand@ing.puc.cl	He is a Professor at the Department of Hydraulic and Environmental Engineering. His areas of interests are in water resources assessment, modeling of hydrologic processes, drought analysis and urban hydrology. He has been visiting professor at Universidad Politécnica de Valencia, Spain and in Colorado State University, Colorado, USA. Since 2002 he has been appointed as Affiliate Faculty of Civil Engineering at Colorado State University. During 1995-97, he was President of the Chilean Society of Hydraulic Engineering. Dr. Fernández teaches graduate and undergraduate courses in Fluid mechanics, Open channel flows, Urban hydrology and Stochastic hydrology.	

Prof. Carlos Bonilla:	Tel: +56 2 354 7411 cbonilla@ing.puc.cl	He is an Associate Professor at the Department of Hydraulic and Environmental Engineering. His areas of interests are in soils and environmental biophysics. His research focuses on the relationship between physical and chemical processes associated with the occurrence of water and solute fluxes, soil erosion, the use of mathematical models, and the impact of management practices on the fate and transport of nutrients in soil and water. Dr. Bonilla is member of the Soil Science Society of America (SSSA), American Society of Agronomy (ASA), and Crop Science Society of America (CSSA). Dr Bonilla teaches undergraduate and graduate courses in environmental energy and soil science.	
Prof. Francisco Suárez	Tel: +56 2 354 4227 fsuarez@ing.puc.cl	He is an Assistant Professor at the Department of Hydraulic and Environmental Engineering. His areas of interest are hydrology, hydrogeology, contaminant transport, renewable energy and thermal desalination. He is interested on the interactions between water and energy. In particular, in the use of fiber-optic distributed temperature sensing to quantify the spatio-temporal variations of the water cycle components. Dr. Suárez research also focuses on the use of solar energy (salt-gradient solar ponds) to drive thermal desalination for sustainable water production.	
Christian K. Hunter PhD candidate	Tel: +56 2 354 4873 Christian.K.Hunter@gmail.com	He has a B.S. in Physics and a M.A. Teaching from Wheaton College (IL, USA). A former Fulbright Scholar, he currently is completing his coursework for his Ph.D. in Hydraulic Engineering at PUC and is the principal doctoral student working on the Copiapó site for COROADO.	
Jean-Marc Dorsaz, M.Sc	Tel: +56 2 354 4873 jme.dorsaz@gmail.com	He has a B.Sc. and M.Sc. in Environmental Science and Engineering from the Swiss Federal Institute of Technology in Lausanne (EPFL). He currently serves as a project engineer at the PUC for the COROADO project and participate on research regarding modeling of hydrological response in urban catchments.