

Maikel Méndez M

WORK ADDRESS:

Instituto Tecnológico de Costa Rica. (www.tec.cr)
Housing and Building Research Centre (CIVCO)
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PERSONAL DATA:

Date of birth: May 5, 1975
Place of birth: San Jose, Costa Rica
Family status: Single

EDUCATION:

Postgraduate Degree in Geo-Information Science & Earth Observation.

July 2010. Faculty of Geo-Information Science and Earth Observation (ITC), University of Twente, Enschede, Netherlands. (www.itc.nl).

Master of Science in Civil and Environmental Engineering.

May 2003. Ira A. Fulton School of Engineering, Arizona State University (ASU), Tempe, United States of America. (www.asu.edu).

Bachelor of Science in Agricultural Engineering.

February 1993 - February 1998. Instituto Tecnológico de Costa Rica (ITCR).
Cartago, Costa Rica. (www.tec.cr).

EMPLOYMENT:

Instituto Tecnológico de Costa Rica (www.tec.cr)

Cartago, Costa Rica. Escuela de Ingeniería en Construcción Academic Specialist, Water Resources. July 2005 to present

- Development of the research/outreach project "GIS based hydrological analysis of the urban watershed of the city of Cartago", oriented to characterize, analyze and evaluate the routing capacity of the city's natural drainage system, in order to establish areas under risk of flooding and undertake corrective actions. Financed by Municipalidad de Cartago and ITCR/CIVCO (*still in progress*).
- Development of the research/outreach project "Advanced GIS Water Distribution Modeling (MASDA)" oriented to enhance performance of the various municipal water distribution systems in the province of Cartago, Costa Rica. Financed by Plan Nacional de Desarrollo Urbano (www.prugam.go.cr) and ITCR/CIVCO (*first stage completed, second stage pending*).
- Design, construction and operation of the hydraulics and hydrogeology laboratory at the ITCR's School of Construction Engineering. Financed by ITCR/CIVCO (*completed*).
- Strategic framework, specifications and terms of reference for urban water systems characterization studies along with Plan Nacional de Desarrollo Urbano (www.prugam.go.cr) and ITCR/CIVCO (*completed*).

Instituto Costarricense de Acueductos y Alcantarillados (www.aya.go.cr)
San José, Costa Rica. Unidad de Aguas Residuales
Water & Wastewater Engineer. January 2000 to June 2005

- Designated engineer for the design of the new "DPMC Wastewater Treatment Plant" for the city of San Isidro de Perez Zeledón, Costa Rica.
- Designated engineer for the initial operation of the "Submarine-outfall primary wastewater treatment plant" for the Caribbean city of Limón, Costa Rica.
- Active participation in the project "Wastewater characterization at Industries and special sources", for the metropolitan area of San José, Costa Rica.
- Performance of the coagulation and flocculation processes optimization, for the 100 LPS rapid water treatment plant of city of Liberia, Guanacaste, Costa Rica.
- Design and construction of a 5 Km, Cast Iron-PVC water conveyance system, controlled by telemetry and conceived to join the water distribution systems of Nicoya and Nambí, Guanacaste, Costa Rica.
- Evaluation and optimization of the water conveyance system and SCADA controls, for the water distribution system Caimital-Hojancha, Guanacaste, Costa Rica.
- Preparation of the maintenance and operation program for the facultative-lagoons system of the city of Nicoya, Guanacaste, Costa Rica.

United Nations (www.un.org)
Department of Economic and Social Affairs
New York, USA. Statistics Division. Environment Statistics Section
Research Fellow. June 2003 to December 2003

- Design and development of the accounting framework for water use in agriculture according to the System of National Accounts (SNA), to be included in the Handbook of National Accounting-Integrated Environmental and Economic Accounting (SEEA).
- Development of an accounting framework intended to include key social aspects of water and sanitation according to the relevant MGD's. This covered issues dealing with access to sanitation and safe drinking water and a review of the various financing systems for infrastructure.

Ball Horticultural Company-Linda Vista (www.ballhort.com)
Cartago, Costa Rica. Mantenimiento y Desarrollo
Irrigation and Drainage Engineer. February 1998 to October 1999

- Design and construction of a 35,000 m³ artificial water storage basin, based on HEC-1/DOS hydrological modeling, Tobosi, Cartago, Costa Rica.
- Performance of a hydrological feasibility study for a 5 km water conveyance system from the Tiribí river basin to Llano Grande, Cartago, Costa Rica.
- Design and installation of an automatic hydraulic control-system for a 60 m³/hor greenhouse, mister-based irrigation system.

RESEARCH AND PROFESSIONAL INTERESTS:

- Simulation, validation and calibration of water-distribution and storm-sewer networks including flow regimes, water quality and flooding risk.
- Integration of GIS and remote sensing tools in the evaluation of natural drainage systems, accounting for extreme weather scenarios and climate change.
- Satellite rainfall estimations in tropical areas using combined VIS/IR, radar and MW techniques, accounting for cloud physical properties and severe storms.
- Quantification of regional hydrological budgets by means of remote sensing including various meteorological and ground-based data sources.

TEACHING EXPERIENCE:

Instituto Tecnológico de Costa Rica (www.tec.cr)

- Lectures on Applied Hydraulics, Hydrology and Geographic Information Systems (GIS) for the Construction Engineering and Agriculture Engineering Schools.

Universidad Nacional de Costa Rica (www.una.ac.cr/geog/maestriasig)

- Lectures on Advanced Hydrological Modeling for the School of Geography.

PARTICIPATION IN INTERNATIONAL COURSES:

- 2008. Simulación Hidrológica Distribuida con GRASS-GIS. AECID, Agencia Española de Cooperación Internacional y Desarrollo. Centro de Estudios Hidrográficos-CEDEX. Cartagena de Indias. Colombia.
- 2005. Diseño de alcantarillado sanitario y pluvial. Amanco, Piura. Colegio Federado de Ingenieros y Arquitectos. San Jose, Costa Rica.
- 2004. Leadership for Sustainable Development. LASPAU & Instituto Centroamericano de Administración de Empresas (INCAE). Centre for Competitiveness and Sustainable Development. Alajuela, Costa Rica.

PUBLICATIONS:

- Méndez, M. 2008. Introducción a la Modelación Asistida de Sistemas de Distribución de Agua; Caso de Estudio Acueducto Marsella. Revista Tecnología en Marcha. Instituto Tecnológico de Costa Rica. Vol. 21-4. ISSN 0379-3982. Pp 79.
- Méndez, M. 2008. Modelación Asistida de Sistemas de Distribución de Agua (MASDA). Ediciones, Centro de Desarrollo Bibliográfico. ISBN 978-9968-514-08-8.
- Méndez, M, Araya A, 2008. Prácticas de Laboratorio, CO-3501, Laboratorio de Hidráulica y Mecánica de Fluidos. Taller de Publicaciones, Instituto Tecnológico de Costa Rica. Pp 115.
- Méndez, M. 2006. Introducción a la Modelación Asistida de Sistemas de Distribución de Agua; Caso de Estudio Campo Escuela Scout de Costa Rica. Revista Tecnología en Marcha. Instituto Tecnológico de Costa Rica. Vol. 20-1. ISSN 0379-3982. Pp 12.

COMPUTER SKILLS:

- GIS & Remote Sensing:
 - ArcGIS, ERDAS, GRASS, GvSIG, ILWIS, SAGA, Sextante, Surfer
- Water Resources & Hydraulics:
 - Epanet, Modflow, HEC-HMS/RAS, MW-SWAT, StormNET, SWMM

STUDENT ADVISING:

- Vega V, A. 2009. "Puente sobre el Río Toyogres: Planteamiento de solución de puente y proceso constructivo de rescate del arco de piedra". ITCR. Advisors: Aguilar D, A & Mendez M, M.
- Navarro P, M. 2009. "Diseño y evaluación hidrológica del tramo del eje vial Guadalupe-Caballo Blanco del plan vial de la ciudad de Cartago". ITCR. Advisors: Fournier C, R & Mendez M, M.
- Murillo C, P. 2007. "Optimización del sistema de distribución de agua potable de la Marsella, Venecia de San Carlos, Costa Rica". ITCR. Advisor: Mendez M, M.