Javier Hernandez

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EDUCATION

University of Illinois at Urbana-Champaign
M.S. in Civil & Environmental Engineering, *May 2012*
Environmental Hydrology and Hydraulic Engineering - GPA 4.00.

Universidad Nacional del Litoral – Agentina
B.E. in Water Resources Engineering*, June 2010*
Class Rank: 1

Instituto Superior del Profesorado N° 8 Joaquín V. González - Argentina
B.A in English Translation, *March 2008*
Class Rank: 1

WORK EXPERIENCE

Assistant Design Engineer, **Part-Time** *10/2012 –present*
Pacific Advance Civil Engineering (PACE), Fountain Valley, California

Associate, Civil Engineering Practice, *08/2012– 11/2012*
Exponent- Irvine, California

- Conducted project-based work including forensic investigation and research on urban and rural flooding, levee and dam breaches, and reservoir construction.
- Performed two-dimensional modeling of overland and open-channel flow using Flow2D.

Research Assistant, *8/2010 – 5/2012*
University of Illinois at Urbana-Champaign

- Conducted hydrologic and hydraulic modeling of the Tunnel and Reservoir Plan (TARP) wastewater collection system for the Metropolitan Water Reclamation District of Greater Chicago.
- Evaluated the conveyance, combine sewage overflow occurrence and geysering effects in the TARP deep tunnels under different storms and gate operation scenarios.
- Constructed and tested a physical model for the Alaska Railroad Corporation to study scour effects around bridge piers due to local erosion, flow contraction and debris accumulation.
- Applied groundwater models to study the response of groundwater flow to different pumping scenarios, rainfall events, river stages and aquifer's physical characteristics.

Research Fellow, *5/2008 – 6/2010*
Universidad Nacional del Litoral- Santa Fe, Argentina

- Studied sedimentation processes in San Pedro Port (Buenos Aires) and determined cause-effect relationships related to port access problems, dredging costs and recreational purposes.
- Investigated fluvial erosion of river banks and determined alternative locations for a power line in danger of collapse.
- Determined the effect of sedimentation on river navigation, riverbed dredging and bank erosion.
- Investigated flow and sediment configuration around sand bars and islands in the Parana River, and conducted field measurement using echo sounder, GPS and Doppler technology.

Intern, *3/2010 – 6/2010*
Ministry of Water, Public Services and Environment - Santa Fe, Argentina

- Computed stormwater runoff and designed stormwater retention reservoirs for municipalities with severe flooding problems.
- Designed stormwater pipe networks, including the calculation of culvert conveyance, design of inlets and a pumping station.
- Established relationships with local authorities and worked directly with stakeholders on flood prevention planning.

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SKILLS

***Hydraulics and Hydrology*:** ArcGIS, SWMM, Flow 2D, MODFLOW, MODPATH, HEC–RAS, HEC-GeoRAS, HEC HMS, InfoSWMM, InfoWorks, TR-55, TR-20, AutoCAD, Surfer, TecPlot, WinStorm, WinRiver, Microsoft Office.
Programming Languages: Matlab, VBA and FORTRAN.
Fluent in English and Spanish. Intermediate proficiency in French.

RELEVANT PROJECTS

Hydraulic modeling of Boneyard Creek - Champaign IL
Developed HEC-RAS ad HEC-GeoRAS models to determine conveyance capacity under different flow scenarios. Applied TIN and Raster datasets, HPGs and ARC-GIS in the modeling process.

Mitigating storm water runoff with green infrastructure in Onondaga Creek, NY
Modeled BMPs/LIDs with HEC-HMS and SWMM to quantify CSO reduction and compliance with the Clean Water Act.

Design of water treatment plant - Cañada de Gomez, Santa Fe Province, Argentina
Designed different plant components: intake, chemical mixing facilities, flocculation/settling basin, filters, water storage tanks and pumping stations.

Evaluation of river stability and sediment transport of Colastiné River - Santa Fe, Argentina
Studied channel stability, channel evolution, sediment transport and river dynamics -- Results helped determine the need for relocation of high voltage power line near river eroding shoreline.

Design of center-pivot irrigation system for 25- acre cultivated land parcel - Cordoba, Argentina
Selected best irrigation alternative based on systems' efficiency, water consumption, economic and hydrologic factors – Analyzed various groundwater exploitation alternatives, pump and filter designs and determination of best location for well points.

Analysis of groundwater for domestic and agricultural use - Cañada de Gomez, Santa Fe, Argentina
Determined aquifer water quality, resource exploitation possibilities and sustainable rates of extraction-- Conducted mapping of groundwater conductivity, pH and salinity.

HONORS

Valedictorian – School of Water Resources Engineering - Universidad Nacional del Litoral, 2010
Research Fellowship recipient- Universidad Nacional del Litoral, 2007-2010
Scholarship recipient - Universidad Nacional del Litoral, 2007-2009
Scholarship recipient - Rafaela City Hall, 2005 -2009

PUBLICATIONS

Flow fields, bed shear stresses and suspended bed sediment dynamics in bifurcations of a large river. Water Resources Research, in press. Szupiany R. N., Amsler M. L., Hernandez J., Parsons D., Best J., Fornari E., and Trento A.

The role of suspended bed sediment dynamics and secondary flow at large braid-bar bifurcations. IAHR XXIV Latin American Congress. November 2010. Szupiany R. N., Amsler M. L., Hernandez J., Fornari E., Parsons D., Best J. L., and Trento A.

Morphological evolution, disparities, and sediment transport of successive enlargements in the Parana River. 4th Symposium on River Hydraulics. November 2009. Pereira M. S., Montagnini M. D., Cafaro E. D., Gallego M. G., Hernandez J., and Ramonell C. G.

***Flow and suspended sediment dynamics at two large braid-bar bifurcations*.** 6th Symposium on River, Coastal and Estuarine Morphodynamics, *RCEM*. September 2009. Szupiany R. N., Amsler M. L. and Hernandez J.