

*Curriculum Vitae*

**MARCELO HORACIO GARCIA**

**M.T. Geoffrey Yeh Endowed Chair in Civil Engineering  
Director, “Ven Te Chow” Hydrosystems Laboratory  
Department of Civil and Environmental Engineering  
University of Illinois at Urbana-Champaign  
205 North Mathews, Urbana, Illinois, 61801  
Email: [mhgarcia@illinois.edu](mailto:mhgarcia@illinois.edu) Phone: (217) 244-4484  
<http://www.vtchl.illinois.edu>**

**Born: April 22, 1959, Cordoba, Argentina**

**Citizenship: Argentina and US**

**EDUCATION**

- PhD in Civil Engineering (Fluid Mechanics & Hydraulics) Dec. 1989  
University of Minnesota - St. Anthony Falls Hydraulics Laboratory  
Thesis Title: Depositing and Eroding Sediment-Laden Flows: turbidity currents  
Thesis Advisor: Professor Gary Parker
- Master of Science in Civil Engineering Oct. 1985  
University of Minnesota – St. Anthony Falls Hydraulics Laboratory  
Thesis Title: Experimental Study of Turbidity Currents  
Thesis Advisor: Professor Gary Parker
- Dipl. Ing. Water Resources Engineering (*Class Salutatorian*) March 1982  
Universidad Nacional del Litoral, Santa Fe, Argentina  
Undergraduate Research: Experimental Study of Clay Erosion in the Parana River  
Research Advisor: Dr. Gertrud Onipchenko, Hydroproject, Moscow, Russia.

**DIRECTORSHIPS**

- Director, Ven Te Chow Hydrosystems Laboratory, Department of Civil and Environmental Engineering, University of Illinois, Feb. 1997–present.
- Founding Director, Centro Internacional de Estudios de Grandes Ríos (CIEGRi), Universidad Nacional del Litoral, Santa Fe, Argentina, 2001-present

**ACADEMIC APPOINTMENTS & PROFESSIONAL EXPERIENCE**

- M.T. Geoffrey Yeh Endowed Chair in Civil Engineering, Department of Civil and Environmental Engineering, University of Illinois, December 2014-present.
- Chester and Helen Siess Professor of Civil Engineering, Department of Civil and Environmental Engineering, University of Illinois, April 2001-December 2014.

Affiliate Professor, Center for Latin American and Caribbean Studies, University of Illinois, Urbana-Champaign, August 2016-

Fellow, National Great Rivers Research and Education Center (NGRREC), Lewis and Clark Community College, East Alton, Illinois, 2012-2015

Affiliate Professor of Geology, Department of Geology, University of Illinois at Urbana-Champaign, April 2006-

Honorary Professor, Universidad Nacional del Litoral, Argentina, October 2001-present

Professor, Department of Civil and Environmental Engineering, University of Illinois, August 2000-present

Associate Professor (tenured), Department of Civil and Environmental Engineering, University of Illinois, August 1996–July 2000

Visiting Associate Professor, Ecole Polytechnique Federale de Lausanne, Switzerland, July-August, 1999

Visiting Associate Professor, Civil Engineering and Environmental Engineering Science, California Institute of Technology, April 1997–July 1997

Assistant Professor, Department of Civil Engineering, University of Illinois, Jan. 1990–May 1996.

Profesor Titular (DS), Facultad de Ingeniería y Ciencias Hídricas, Universidad Nacional del Litoral, 2008-Present

Contract Professor, Istituto di Idraulica, University of Genoa, Italy, May 1993 - August 1993

Research Fellow, St. Anthony Falls Hydraulic Laboratory, University of Minnesota, Jan. 1988 - Dec. 1989

Research Assistant, St. Anthony Falls Hydraulic Laboratory, University of Minnesota, Sep. 1983 - Dec. 1987

Teaching Assistant, Fluid Mechanics Lab., Dept. of Civil and Mineral Engineering, University of Minnesota, Jan. 1984 - Jan. 1986

Research Docent, Apr. 1982 - Dec. 1987, and Teaching Assistant, Apr. 1979 - Mar. 1981, Department of Hydrology, Universidad Nacional del Litoral, Argentina.

Visiting Research Engineer, National Applied Hydraulics Laboratory, INCyTH, Ezeiza, Buenos Aires, Argentina, February-August 1983 (on leave from AyEE)

Assistant Engineer, Parana Medio Project, AyEE, Santa Fe, Argentina, Mar. 1982–Aug. 1983.

Technical Assistant, Parana Medio Project, AyEE, Santa Fe, Argentina, 1979 – 1982.

## **MEMBERSHIP IN PROFESSIONAL ASSOCIATIONS & REGISTRATION**

Distinguished Member, American Society of Civil Engineers (ASCE)

Fellow, Environmental and Water Resources Institute (EWRI)

Member, International Association for HydroEnvironmental Engineering and Research (IAHR)

Member, American Geophysical Union (AGU)

Member, American Society for Engineering Education (ASEE),

Licensed Engineer (PEng), Colegio de Ingenieros, Santa Fe, Argentina.

Corresponding Member, National Academy of Engineering of Argentina.

## **TEACHING EXPERIENCE**

Water Resources Engineering, Hydraulic Design and Analysis, Field Methods in Hydrology and Environmental Sciences, Sediment Transport, River Mechanics, Environmental Hydrodynamics, Mixing in Environmental Flows, Ecological Engineering, Open-Channel Hydraulics, Turbulence.

## **CURRENT RESEARCH ACTIVITIES**

Main areas of interest are river mechanics, environmental hydrodynamics, sediment transport and water resources engineering. Current research activities include the following:

Experiments on oscillatory boundary-layer flows involving mass transfer at sediment-water interfaces, in tandem with turbulence measurements and LES modeling of oscillatory flows around bed forms and objects.

Modeling transport and fate of invasive species eggs in the Illinois River and 3D hydrodynamic, sediment transport and water quality modeling in Chicago waterway system.

Study of bank erosion in the Mackinaw River, channel restoration in Kaskaskia River, Illinois, movable-bed hydraulic modeling and numerical experiments on sediment diversions for land reclamation in Mississippi delta.

Dynamics of meandering and meander cutoffs in Bermejo and Pilcomayo Rivers in South America and Wabash River in Illinois and Indiana.

Particle-turbulence interaction, turbulent resuspension under controlled turbulence to assess sediment diagenesis and benthic oxygen demand in urban streams with focus on Bubbly Creek, Chicago.

Large scale experiments on ripple morphodynamics in oscillatory boundary layer flows, including fluid-sediment-structure interaction and scour around objects under wave-current like conditions.

Transport and fate following oil spills in rivers and coastal areas, mechanics of oil-sediment aggregation-role of turbulence, control methods to reduce impact of oil pills. Entrainment of oil-sediment aggregates in the Kalamazoo River, Michigan.

Development of thermal model for Lake Clinton, Illinois to optimize Nuclear Power Plant cooling during summer months and minimize ecological impact.

Gravity current phenomena, flocculating turbidity currents, reservoir sedimentation by turbidity currents, dynamics of salt wedges and double-diffusion driven sedimentation of fine particles, and density currents in the Chicago River and associated waterways.

Urban flooding, water quality and excess water management in large metropolitan areas like Chicago, Illinois, Buenos Aires, Argentina, and Florence, Italy.

Roman hydraulic works including aqueducts and bridges and sustainable hydropower development in Latin America.

## **HONORS & RECOGNITIONS**

### ***Advising and Teaching***

Recognized for Excellence in Advising, College of Engineering, UIUC, 1997, 2001  
Included in Incomplete List of Teachers Ranked as Excellent by Their Students at UIUC: CE 459 "Sediment Transport" for Spring 1992, 1993, 1995, 1997, 2001, 2002, 2005; 2004, 2012, 2015; CE 498 EH "Environmental Hydrodynamics" for Spring 1994, 1996, 1998, 2003 CE 255 "Introduction to Hydrosystems Engineering" for Fall 1995, 1996, 1998, CEE 353 "Analysis and Design of Hydraulic Systems," for Spring 1999, 2004, 2006. CEE551 "Open Channel Hydraulics" fall 2009, 2011, 2013. CEE555 Mixing in Environmental Flows, 2014.  
Honorary Professor, Universidad Nacional del Litoral, Argentina, December 2001  
Honorary Member Chi Epsilon National Civil Engineering Honor Society, April 2004.  
Best Dissertation Award in Water Resources Engineering presented to PhD Advisee Arthur Schmidt -Water Resources Council-American Water Resources Association (AWRA), 2003.  
International L.G. Straub Award for Best Ph.D. Thesis presented to advisees: Yarko Niño (PhD 95), Jeffrey Parsons (PhD 98), Mariano Cantero (07), Jorge Abad (PhD 08), St Anthony Falls Laboratory, University of Minnesota.

### ***Research***

1989 Alvin G. Anderson Award, University of Minnesota  
1990 Hokkaido River Disaster Prevention Institute Fellowship, Japan  
1992 National Science Foundation Research Initiation Award  
1996 Karl Emil Hilgard Hydraulics Prize, Best Paper in Journal of Hydr. Eng., ASCE  
1998 Walter Huber Civil Engineering Research Prize, ASCE  
1998 Arthur and Virginia Nauman Faculty Scholar, CEE, UIUC  
1999 Illinois River Science Advisory Committee  
1999 Karl Emil Hilgard Hydraulics Prize, Best Paper in Journal of Hydr. Eng., ASCE  
2000 University Scholar Award, University of Illinois at Urbana-Champaign  
2001 12<sup>th</sup> Arthur Thomas Ippen International Award, IAHR, Beijing, China  
2001 Chester and Helen Siess Professor of Civil Engineering, University of Illinois  
2005 Elected Corresponding Member, National Academy of Engineering of Argentina  
2006 Hans Albert Einstein Award for contributions to Sedimentation Engineering, ASCE  
2008 Borland Distinguished Lecture in Hydraulics, Colorado State University  
2012 Wesly Horner Award, Best Paper in Journal of Environmental Engineering, ASCE

- 2012 Chandler-Misener Award for most notable paper in Journal of Great Lakes Research, International Association for Great Lakes Research
- 2012 National Award for Significant Contributions in Science and Technology, SENACYT, Panama Canal Authority, Government of Panama
- 2012 Enrico Marchi Distinguished Lecture, Italian Association of Hydraulics, University of Florence, Italy.
- 2012 Hunter Rouse Hydraulic Engineering Lecture Award, ASCE.
- 2013 Elected Fellow, Environmental and Water Resources Institute (EWRI)
- 2013 Elected Distinguished Member, American Society of Civil Engineers (ASCE)
- 2014 M.T. Geoffrey Yeh Endowed Chair in Civil Engineering, UIUC
- 2015 Donald R.F. Harleman Memorial Water Resources Engineering Lecture, Penn State University

### **EDITORSHIPS OF JOURNALS AND PROFESSIONAL PRACTICE MANUALS**

International Journal of Hydraulic Research, IAHR, *Editor-in-Chief*, 2001-2006  
 Water Resources Research (American Geophysical Union), *Associate Editor*, 1999-2000  
 Hydraulic Eng. in Mexico (Mexican Institute of Water Technology), *Assoc. Editor*, 1999-2005  
 International Journal of Infrastructure and Natural Disasters, *Assoc. Editor*, 2000-2005  
 Ingenieria del Agua, Madrid, Spain, *Associate Editor*, 2005-2010.  
*Editor-in-Chief*, ASCE Manual of Practice 110, Sedimentation Engineering (1999-2008)  
*Corresponding Editor*, ASCE Manual of Practice 74, Sedimentation Engineering, Classic Edition originally edited by Vito A. Vanoni, (1999-2006).  
 Editorial Board, Journal of Environmental Fluid Mechanics, (2014-present)  
 RIBAGUA - Revista Iberoamericana del Agua, Associate Editor, IAHR, Madrid, 2015-2020

### **REVIEW BOARDS, PANELS AND SCIENTIFIC COMMITTEES**

U.S. Environmental Protection Agency Review Panel on "The Role of Sediments on the Transport and Fate of Pollutants in Freshwater and Estuaries", Newport, Rhode Island, 1990.

U.S.-Taiwan Bilateral Panel on "Understanding Sedimentation and Model Evaluation", National Research Council and Federal Energy Regulatory Commission, Washington, DC, 1991.

U.S.-Taiwan Bilateral Panel on "Understanding Sedimentation and Model Evaluation", National Research Council and Federal Energy Regulatory Commission, San Francisco, California, 1993.

Office of Naval Research Workshop on "Continental Terrace Sediment Process", New York University at Stony Brook, New York, 1993.

National Science Foundation Review Panel for Research Initiation Awards in Fluid, Hydraulic, and Particulate Systems Program, Arlington, VA 1994.

Sino-German Workshop on "Unsteady Sediment Transport Modelling", Berlin, Germany, 1995. (only representative from USA).

Sino-USA Workshop on “Sediment-Related Disasters”, Beijing, China. (Supported by NSF), March 1999.

Delaware River Basin Commission (Dynamics of Contaminated Sediments), New Jersey, 2000-2001

Office of Naval Research Workshop on “Mine Burial Prediction in Coastal Environments,” New Orleans, Louisiana, 2000.

Workshop on “Modeling and Management of Environmental Issues,” Invited Panelist on Modeling of Contaminated Sediment Processes, Organized by Du Pont de Nemours and Company, July 2000.

Steering Committee for Workshop on Environmental Windows for Dredging Projects, U.S. Army Corps of Engineers, National Research Council, July 2000-June 2001.

Expert Panel for “Development of a TMDL Model for PCBs in the Delaware River Basin,” Delaware River Basin Commission, West Trenton, New Jersey, 2000-2001.

Expert Panel for “Housatonic River Hydrodynamic Modeling,” Commonwealth of Massachusetts, US Environmental Protection Agency, State of Connecticut, Department of the Interior, NOAA, March- 2001.

Expert Panel for “River Science at the US Geological Survey,” National Research Council, The National Academies, Washington, D.C., 2004-2006

Expert Panel for “Water Resources at the US Geological Survey.” National Research Council, The National Academies, Washington, D.C., 2004-2006.

Member, Science Advisory Committee, University of Trento, Italy, 2007-2010.

International Great Lakes Commission (Canada-USA) Co-Leader with Peter Ashmore Sedimentation Studies Task Working Group for St. Clair River, 2007-2010.

Scientific Board Chair, River, Coastal and Estuarine Morphodynamics Symposia (RCEM), Fluid Mechanics Committee, IAHR, 2007-present.

Expert Reviewer, Fargo-Moorhead Metropolitan Flood Risk Management Feasibility Study, North Dakota and Minnesota, Batelle & US Army Corps of Engineers, 2010-2011.

Chair, External Review Committee, Department of Civil and Environmental Engineering and Earth Sciences, University of Notre Dame, 2013

Expert Reviewer, Mississippi River Delta Hydrodynamic and Sediment Transport Modeling, US Army Corps of Engineers, 2013-2017.

Member, Selection Committee, International Lorenz G. Straub Award Competition for PhD Dissertation, University of Minnesota, 2014-2017.

Steering Committee Member, Community Surface Dynamics Modeling System, CSDMS, 2013-2017 (<http://csdms.colorado.edu>)

Member, International Technical and Scientific Advisory Committee (ITSC), Firenze 2016 Project for Flood Protection, Florence, Italy, 2014-2016

Proposal Review Panel, Gulf Research Institute, National Academies of Arts, Engineering and Sciences, 2016

Review Board, Smart Urban Water Supply Systems Program, Hong Kong University of Science and Technology, 2016-2020.

Review Board, RiverCare Program, the Netherlands 2016-2019 (<http://www.ncr-web.org/rivercare/about>)

### **MAJOR CONSULTING ACTIVITIES**

Movable-bed hydraulic modeling, Northern States Power Company, Minnesota (1989)  
Reservoir Sedimentation, Water Resources Planning Commission, Taiwan (1992)  
River Sedimentation, Parana-Santa Fe Sub-Fluvial Tunnel Commission, Argentina (1993)  
Environmental Impact of Navigation, U.S. Army Corps of Engineers, St. Louis Distr. (1996)  
Flood Hazard and Management in Pilar, Paraguay, USAID Office of International Aid (1998)  
Evaluation of Dam Removal Alternatives in the Pacific Northwest, Stillwater Science, Berkeley, CA (2000)  
Sedimentation Analysis for Stabilization of Rio Cuarto, Cordoba, Argentina, 2000  
Hydrodynamic and Sedimentation Modeling of Housatonic River, MA, General Electric and EPA, 2001-2005  
Evaluation of Hydrodynamic and Sedimentation Modeling in San Antonio River Tunnel (SART), Half Associates, Inc., 2002.  
Sediment Erosion and Washout at Howard Street Tunnel, Baltimore, Maryland, CFX Transportation, 2002.  
Evaluation of Stormwater Management Manual for Puerto Rico, FEMA and University of Puerto Rico, 2003.  
Review of Maldonado Flood Control Project for City of Buenos Aires, Argentina, The World Bank, 2004.  
Evaluation of Bermejo River Project, Argentina-Bolivia, United Nations Environmental Program (UNEP), 2004-2005.  
Evaluation of Rio Piedras Project for Flood Control and Stream Naturalization, Puerto Rico, Applied Ecological Services, 2005.  
Analysis of Reservoir Sedimentation and Water Supply, St Lucia, West Indies, Sir Halcrow and Partners, the World Bank (2005).  
Evaluation of Alternatives and Technology for Retention of Mining Tailings, West Papua, Indonesia, Freeport-McMoran and MWH, 2006.

Analysis of Reservoir Sedimentation for Valenciano Reservoir Project, Puerto Rico, CSA & Associates, 2007.

Sediment Management in Canal del Dique, Colombia, Universidad Nacional de Colombia, 2008.

Feasibility Analysis of Stream Aeration Technology using SEPA stations for the Matanza-Riachuelo River Corridor and Estuary, Buenos Aires, Argentina, AySA, 2009-2012.

Analysis of water intakes location and wastewater outfall for Buenos Aires, Argentina, AySA, 2010.

Development of Flood Control Scheme for Cañar-Bulubulu River, MC Engineering Consultants, Guayaquil, Ecuador, 2011.

Flood Control and Levee Risk Analysis in La Mojana, Colombia, Universidad Nacional, Bogotá, Colombia, 2011.

Yellowstone River Morphology and Pipeline Scour, ExxonMobil Co., 2011-2012.

Feasibility Study for Sustainable Hydropower Generation in the Middle Parana River, Argentina, Universidad Nacional del Litoral (UNL) y Universidad Nacional de La Plata (UNLP), 2012-2016

Expert Witness, Sacramento-San Joaquin Delta Hydraulics and Sedimentation, California, 2012.

River Sedimentation in Costa Rica, Instituto Costarricense de Electricidad, 2013.

Hydraulics Analysis and Revetment Stability of Belo Monte Hydropower Project Diversion Canal, NESA and Intertechne, Brazil, 2013.

Evaluation of Restoration Plan for Bogota River, Colombia, The World Bank, 2013.

Evaluation of Northfield Mountain / Turners Falls operations on the Connecticut River FERC Relicensing Hydropower Project, Franklin Regional Council of Governments, MA, 2014

Expert Witness, Barge Accident and Flooding at Marseilles, Illinois. US Department of Justice, 2013-2016.

Board of Experts, former Condor Cliff and La Barrancosa Hydroelectric Projects, Santa Cruz, Argentina, 2014-2016.

Board of Experts, Santo Domingo Hydropower Project, Empresa Pública de Medellín, Colombia, 2016-2020.

Expert Reviewer, Mississippi River Delta Hydrodynamic and Sediment Transport Modeling, US Army Corps of Engineers, 2013-2017.

## **AWARD, INVITED & KEYNOTE LECTURES**

<b>Title</b>	<b>Conference</b>	<b>Location</b>	<b>Year</b>
"Trends in Environmental Hydrodynamics"	XVI Latin American Congress of Hydraulics, International Association for Hydraulic Research, IAHR,	Santiago, Chile	1994
"Flood Hazards in Pilar, Paraguay: The Human Side of Engineering"	Lorenz G. Straub Award Lecture	Minneapolis, Minnesota	1998
"Sediment Entrainment by Unsteady Turbulent Flows"	Fall Meeting American Geophysical Union Invited Lecture	San Francisco, CA	1998



Title	Conference	Location	Year
“Near-Bed momentum Fluxes, Turbulent Bursting, and Bagnold’s Hypothesis for Sediment Suspension,”	IAHR Symposium on River, Coastal and Estuarine Morphodynamics (keynote lecture)	Genoa, Italy	1999
“Nuevas Tendencias en la Hidráulica Fluvial y el Manejo de Ríos”	XIX Latin American Congress of Hydraulics, International Association for Hydraulic Research, IAHR	Cordoba, Argentina	2000
“The Parana River: a Natural Laboratory-the tale of the tunnel under the river”	12th Arthur Thomas Ippen Award Lecture. <i>(originally scheduled for September 2001 in Beijing, China, but was postponed after 9/11 events)</i>	Cardiff, United Kingdom	2002
“Holistic Stream Restoration”	US-Chinese Joint Workshop on Sediment Transport and Environmental Studies	Marquette University, Milwaukee, WI	2002
“Water Management in the USA: Role of Water Transfers in California”	100th Aniversario Asociacion de Ingenieros de Caminos Canales y Puertos, Spain , & 150th Anniversary American Society of Civil Engineers (ASCE)	Madrid, Spain	2002
“Turbulence in Open Channel Flows with Simulated Vegetation: implications for sediment transport”	Keynote Lecture at Riparian Forest Vegetation Workshop	University of Trento, Italy	2003
“Holistic Stream Restoration: Challenges and Opportunities”	Symposium on “River, Coastal and Estuarine Morphodynamics (RCCEM)”	Universidad Politecnica de Barcelona, Spain	2003
“Naturalizacion de Rios”	Primer Simposio Regional sobre Hidráulica de Ríos	Instituto Nacional del Agua, Buenos Aires, Argentina	2003
“Sediment Science-New directions and evolving issues”	National Surface Water Meeting, US Geological Survey	San Antonio, Texas	2003
"Naturalización de Ríos en Zona Urbanas: desafíos y oportunidades para la hidráulica fluvial"	XXI Congreso Latinoamericano de Hidráulica, IAHR	Sao Pedro, Brazil	2004
“Hydraulic in the Times of Cholera: the Chicago River, Lake Michigan and Urban Growth,”	International Hydraulic Engineering and Research Association Congress (IAHR) (keynote lecture)	Seoul, South Korea	2005

Title	Conference	Location	Year
“La Hidráulica en los tiempos de Cólera: Chicago y el desarrollo sustentable”	20 Aniversario Instituto Mexicano de Tecnología del Agua, Inaugural Auditorium Lecture	Cuernavaca, Mexico	2006
“El Universo de las corrientes de densidad”	Congreso Latinoamericano de Hidráulica, IAHR-LAD	Ciudad Guayana, Venezuela	2006
"The Chicago River, Urban Growth and Public Health"	Borland Distinguished Lecture in Hydraulics	Colorado State University	2008
“Presentation of Manual of Practice 110: Sedimentation Engineering”	Congreso Latinoamericano de Hidráulica, IAHR-LAD	Cartagena de Indias, Colombia	2008
"The Universe of Coherent Turbulent Structures in Gravity Current Flows"	Coherent Flow Structures in Geophysical Flows at Earth's Surface Keynote Lecture	Simon Fraser University, Canada	2011
“Challenges in River Meandering Modeling,”	Advances in River Modeling Conference-Keynote	Universidad Politecnica de Barcelona, Spain	2011
"Gravity Currents: engineering aspects and geological implications"	3 <sup>rd</sup> Enrico Marchi Distinguished Lecture	University of Florence, Italy	2012
"Hunter Rouse's Turbulence- Jar Experiments on the Fluid Mechanics of Sediment Suspension: A Primer"	Hunter Rouse Hydraulic Engineering Award Lecture ASCE	Snowbird, Utah	2012
"Building the Canal that Saved Chicago and its impact on the Panama Canal Construction"	Panama Canal Congress Lecture	Panama City, Panama	2012
"Hydraulics in the Time of Cholera: the Chicago River, Urban Growth and Lake Michigan	Chicago Ideas Week ( <a href="https://www.chicagoideas.com/speakers/2506">https://www.chicagoideas.com/speakers/2506</a> ) Invited Presentation	Chicago, Illinois	2012
"Belo Monte Hydropower Project Diversion Channel: Rock Stability While Conveying 14,000 m <sup>3</sup> /s"	Symposium: "Current Watershed Management Issues in Brazil"	University of Texas, Austin	2014
"A sediment journey through the Bermejo River of Argentina and Bolivia: from debris flows to meandering, ending in washload"	RiverFlow 2014 International Conference Keynote Lecture	Lausanne, Switzerland	2014

Title	Conference	Location	Year
"Urban Hydraulics and Public Health: the Chicago Experience"	IAHR Latin American Congress of Hydraulics	Santiago, Chile	2014
Exploring the Universe of Density Currents: what do snow avalanches, dust storms, oceanic turbidity currents and density underflows in the Chicago River have in common?	Barr Engineering Distinguished Lecture	University of Minnesota, Minneapolis, MN	2014
"Flood management and sanitation Strategy for a lakefront metropolis: the Case of Chicago"	2015 Donald Harleman Memorial Lecture in Water Resources Engineering	Penn State University, PA	2015
"Impact of Sediments on River Ecology"	Keynote lecture at 1er. Congreso Iberoamericano sobre Sedimentos y Ecología	Queretaro, Mexico	2015
"Advances in River Modeling"	Keynote lecture at Quinto Seminario Internacional de Potamología José Antonio Maza Alvarez	Queretaro, Mexico	2015
"Morphodynamics in oscillatory boundary layer flows"	Keynote lecture at "From fluid dynamics to morphodynamics," Symposium in honour of Prof. Giovanni Seminara in occasion of his retirement	Genoa, Italy	2015
Fluid Mechanics of Density Currents	Environmental Fluid Dynamics Seminars Invited lecture	Johns Hopkins University Baltimore Maryland	2016
Ripple Morphodynamics in Oscillatory Boundary Layer Flows	Keynote lecture at Symposium on Aquatic Interfaces	University of Aberdeen, Scotland	2016
Dinámica de Desembocaduras en el Océano; Rio Magdalena, Colombia	Keynote lecture at "Dia del Mar" Celebration	Universidad del Norte, Barranquilla, Colombia	2016
Belo Monte Hydropower Project Diversion Channel: Rock Stability while Conveying 14,000 m <sup>3</sup> /s	IAHR-LAD Latin American Congress of Hydraulics Closing keynote lecture	Lima, Peru	2016
Impact of Extreme Hydrologic Events on Urban Areas: Chicago's Experience	30 Aniversario-Instituto de Mecánica de los Fluidos, Universidad de la Republica (IMFIA) Inaugural keynote lecture	Montevideo, Uruguay	2016
Coupling of urban hydrology, tunnels, and Chicago waterways models	Inaugural Workshop for Smart Urban Water Supply Systems (Smart UWSS)	Hong Kong University of Science and Technology	2016

## GRADUATE STUDENT EDUCATION & TRAINING

### M.S. Thesis Students (51 total)

Student Name	Year Graduated	Thesis Title	Placement
Yarko Niño	1992	Sediment bars in straight and meandering channels: experimental study on the resonance phenomenon	University of Chile
Laura Bittner	1994	River bed response to channel width variation: theory and experiments	Consulting Engineer
Anthony Dill	1994	Video-based particle tracking velocimetry technique for measuring flow velocity in porous media Co-advised with Albert Valocchi	Consulting Engineer
Fabian Lopez	1994	Near-wall turbulent coherent structures and their role on sediment transport in smooth-bed open channel flows	Universidad Nacional de Cordoba, Argentina
Jeffrey Parsons	1995	Flow structure and mixing characteristics in saline gravity current fronts	University of Washington
Jeffrey Freeman	1996	Yorkville Dam hydraulic model study: drown-proofing of a low overflow structure	Consulting Engineer
Chad Dunn	1996	Flow structure and resistance in a laboratory channel with simulated vegetation	Consulting Engineer
Bernardo Echavarria	1996	Reservoir sedimentation by free-surface and plunging flows: application to Lake Decatur, Illinois	Consulting Engineer, Mexico
Jose Rodriguez	1998	Wall shear stress in unsteady turbulent flow and its role in sediment transport	University of Newcastle, Australia
Juan Jose Fedele	1999	Bed roughness in alluvial streams	St. Cloud state University, Minnesota
Jonathan Armbruster	1998	Hydraulic model study for the restoration of Batavia dam, Fox River, Illinois	Consulting Engineer, Florida
Andrew Waratuke	1999	Hydraulic model study of the Boneyard Creek at Wright Street, Champaign and Urbana, Illinois	University of Illinois
Andrew Peabody	2000	Hydraulic model study of the Boneyard Creek at Lincoln Avenue, Urbana, Illinois	Consulting Engineer
Marjorie Caisley	2000	Hydraulic model study of a canoe chute for Illinois streams	Water resources Engineer, Water resources department, California
Josephine Schuster	2000	Hydraulic model study for the optimization of the spillway at Batavia dam, Fox River, Illinois.	Consulting, Wisconsin
Jacob Spenn	2001	Laboratory Study of Bubble Plumes in a Weakly Stratified, Sediment-Laden Flow - McCook Reservoir Studies. Co-advised with Chris Rehmann	Consulting Engineering
Pedro Garcia	2001	Mathematical modeling of Sugar Creek, Illinois (special project)	Consulting, Puerto Rico
Jose Guzman	2001	A first approach to suspended sediment modeling with the full equations model (FEQ)	CDM, Florida
Jorge Abad	2002	2D river models for prediction of sediment transport and morphological variations	University of Pittsburgh

Student Name	Year Graduated	Thesis Title	Placement
Brigid Briskin	2002	Investigation of Settling and Oxygen Demand of Resuspended Combined Sewer Overflow Sediments Using an Annular Flume - McCook Reservoir Studies	US Army Corps of Engineers, Chicago
Mariano Cantero	2002	Theoretical and numerical modeling of turbidity currents as two-phase flows	Instituto Balseiro, Centro Atómico Bariloche, Argentina
Felix Lopez	2006	Flow characteristics in pool-riffles structures under the presence of vegetation	Consulting, Puerto Rico
Lucas Rincon	2003	An experimental study of an airflow scaling procedure for bubble plumes	CDM, Miami
Rodrigo Musalem	2003	Particle image velocimetry (PIV) analysis of oscillatory flow field above self-formed vortex ripples	South Florida Water Management District, Florida
Octavio Sequeiros	2004	Sedimentation Management in Combined Sewer Overflow Storage Reservoirs Using Water Jets	Shell Co., The Netherlands
Daniel Kriesant	2005	Modeling of sediment transport in the Chache River, Illinois	US Army Corps of Engineers, New York
Claudia Manriquez	2005	Hydraulic model study of Chicago River density currents	South Florida Water Management District, Florida
Salih Demir	2005	Burial of finite-length cylindrical objects under pure oscillatory flow	Consulting, Turkey
Francisco Pedocchi	2005	Evaluation of a laser diffraction instrument and an annular flume for cohesive sediment studies	Universidad de la Republica, Uruguay
Javier Ancalle	2007	Experimental study on the hydraulics of high-amplitude Kinoshita-generated meandering channels. Co-advised with Gary Parker	Consulting, New Jersey
Davide Motta	2008	Two-dimensional hydrodynamic, sediment transport and water quality model for bubbly Creek, Chicago, Illinois	Amec Foster Wheeler, PA
Jon Czuba	2009	ADCP measurements in the St. Clair River.	US Geological Survey, Washington State
Christiana Barnas	2009	Flow measurements in a canoe-chute physical model for the North Branch of the Chicago River.	US Geological Survey, Washington State
David Waterman	2011	Sediment Oxygen Demand in Bubbly Creek, Chicago, Illinois	PhD Student, UIUC
Viviana Morales	2011	Hydrologic and Hydraulic Modeling of the Lawrence Avenue Underflow Sewer System	University of Cuenca, Ecuador
Roberto Fernandez	2011	Measurement of flow field with particle-tracking velocimetry in Kinoshita Flume	PhD Student, UIUC
Zhenduo Zhu	2011	Computational River Modeling of Cañar River, Ecuador	University of Buffalo, NY
Justin Boldt	2012	ADCP Measurements with DNS Turbulence	USGS, Kentucky
Javier Hernandez	2012	Hydrologic Modeling of O'Hare TARP System	Exponent Inc., California

Student Name	Year Graduated	Thesis Title	Placement
Marielys Ramos	2015	Laboratory Experiments on Venting of Turbidity Currents to Prevent Reservoir Sedimentation	U.S. Army Corps of Engineers, Vicksburg, MS
Som Dutta	2012	Sediment Induced Stratification Effects in Open Channel Flows	PhD Student, UIUC
Nicholas Muller	2015	LDV Turbulence Measurements in Unidirectional Free Surface Flows	BLACKMER®, Michigan
Heng Wan	2015	Analysis of PIV Measurements in Oscillatory Flow over a Rippled Bed	PhD Student, UIUC
Santiago Santacruz	2015	Hydraulic Modeling of Chicago Area Waterways System (CAWS) to Assess the Impact of Hydrologic Separation on Water Levels and Potential Flooding during Extreme Rainfall Events in Chicago, Illinois	PhD Student, UIUC
Christian Oswaldo Torres	2016	Hydrologic-Hydraulic Modeling for the Dual Drainage and Flooding Study of the Lawrence Avenue Underflow Sewer System	Consulting, Ecuador
Roberto Takahashi	2016	IMPLEMENTATION OF A HYDRODYNAMIC ONE DIMENSIONAL MODEL FOR THE MIDDLE PARAGUAY RIVER BASIN	Consulting, Paraguay
Esteban Lacunza	2016	CHANNEL-FORMING DISCHARGE AND RIVER MEANDER MIGRATION MODELING OF THE PILCOMAYO RIVER IN THE AREA OF MISION LA PAZ	Universidad de La Plata, Argentina
Jorge San Juan	2016	Flow Characterization in an Annular Flume	PhD Student, UIUC
David Ancalle	2016	A COMPARATIVE STUDY OF TWO UNSTEADY ONE DIMENSIONAL OPEN CHANNEL FLOW MODELS: FULL EQUATIONS MODEL (FEQ) AND RIVER ANALYSIS SYSTEM (HEC-RAS)	Consulting, Atlanta
Yifan He	2016	Water Quality Modeling in Chicago Waterways	PhD Student, UIUC
Lori Jones	2017	Modeling transport and fate of Asian carp eggs in the Illinois River (in progress)	MS/PhD Student, UIUC
Chieh-Ying "Cindy" Chen	2017	Sediment diagenesis in urban streams: the case of Bubbly Creek, Chicago (in progress)	MS Student, UIUC

### Ph.D. Graduate Students (34 total)

Student Name	Year Graduated	Thesis Title	Placement
Yarko Niño	1995	Particle motion in the near bed region of a turbulent open channel flow: implications for bedload transport by saltation and sediment entrainment into suspension. <i>International Straub Award for best PhD thesis in the field of Hydraulics and Hydrology.- University of Minnesota &amp; Chester Siess Dissertation Award Winner CEE, UIUC</i>	University of Chile, Santiago, Chile
Sung-Uk Choi	1996	Layer-averaged modeling of turbidity currents with a finite element method	Yonsei University, South Korea

Student Name	Year Graduated	Thesis Title	Placement
Fabian Lopez	1997	Turbulence measurements in boundary-layer flows	Universidad Nacional de Cordoba. Undersecretary Water Resources, Argentina
David Admiraal	1999	Entrainment of sediment into suspension by unsteady flows	University of Nebraska, Lincoln, NE
Jeffrey Parsons	1998	Mixing mechanisms in density intrusions. <i>(Winner of the International Straub award for best PhD thesis in the field of Hydraulics and Hydrology-University of Minnesota )</i>	University of Washington/ Consultant
Xin Huang	1999	Two-dimensional transient flows and stability of concentrated suspensions of clay particles and rheology	Motorola, Inc.
Art Schmidt	2002	Analysis of stage-discharge relations for open-channel flows and their associated uncertainties Co-advised with Ben Chie Yen. <i>Best Dissertation Award-Water Resources Council-American Water Resources Association (AWRA)</i>	University of Illinois at Urbana-Champaign
Juan Fedele	2003	Bedforms and gravity underflows in marine environments	St. Cloud State University, St. Cloud, Minnesota
Jose Rodriguez	2003	Mean flow and turbulence characteristics of pool-riffle structures in low-gradient streams	University of New Castle, Australia
Robert Holmes, Jr.	2003	Vertical velocity distributions in sand-bed alluvial rivers	US Geological Survey University of Missouri-Rolla
Michelle Guala	2003	Experiments in Coherent Structures in Turbulence PhD Granted by University of Padova, Advisor: G. Seminara, Co-Advisors: R. Adrian and M.H. Garcia (UIUC)	University of Minnesota
Yovanni Cataño	2005	Burial of short cylinders induced by local scour and bedform migration under waves plus currents	University of Illinois
Fabian Bombardelli	2004	Turbulence in multiphase models for aeration bubble plumes	University of California, Davis
Carlos M. Garcia	2006	Characterization of flow turbulence induced by a bubble plume in large-scale experiments	Universidad Nacional de Cordoba, Argentina
Jorge Abad	2008	Hydrodynamics and morphodynamics in Kinoshita meandering curves. <i>Straub Award Winner Best PhD Dissertation, University of Minnesota</i>	University of Pittsburgh
Mariano Cantero	2007	Modeling and large scale simulations of thermohaline and particulate density currents(Co-Ad: S. Balachandar) <i>Straub Award Winner Best PhD Dissertation, University of Minnesota</i>	Instituto Balseiro, Bariloche, Argentina
Xuejun Michael Yang	2007	3D Numerical modeling of the turbulent flow in hydraulic structures	Shaw Group, Boston
Arturo Leon	2007	Improved modeling of unsteady free surface, pressurized and mixed flows in storm-sewer systems	Oregon State University

Student Name	Year Graduated	Thesis Title	Placement
Xiaofeng Liu	2008	Numerical models for scour and liquefaction around object under currents and waves	Penn State University
Albert Dai	2008	Analysis of plunging flows	National Taiwan University, Taiwan
Octavio Sequeiros	2008	Bedload transport, self-acceleration, downstream sorting, and flow dynamics of turbidity currents (Co-advised with Gary Parker)	Shell Co. The Netherlands
Juan Ezequiel Martin	2009	Mixing in gravity current fronts	University of Iowa
Francisco Pedocchi	2009	Bed morphology and sediment transport under oscillatory flow	Universidad de la Republica, Montevideo, Uruguay
Blake Landry	2011	Sediment Wave Interaction and Vegetation Effects	Naval Research Labs (NRL), Mississippi
Ruiyu Wang	2012	Sedimentation in tidal flows (Co-advised with Gary Parker)	China
Sumit Sinha	2012	3D Hydrodynamic and Water Quality Model of the Chicago Waterways	Helmholtz Environmental Institute, Germany
Mauricio Perillo (Geology)	2013	Bedforms in Combined Oscillatory Flows (Co-advised with James Best)	Exxon Mobil
Jose Maria Mier-Lopez	2014	LDV Measurements in Large Oscillatory Flow Tunnel	Port Authority, Santander, Spain
Davide Motta	2012	Modeling of meandering rivers with heterogeneous floodplains	AMEC, Philadelphia
Tatiana Garcia-Botero	2014	Transport and Fate of Asian Carp Eggs	Illinois Water Science Center-USGS
Som Dutta	2016	Hydrodynamic and Sedimentation at River Diversions	University of Illinois
Zhenduo Zhu	2015	Modeling of Oil Spills: transport and fate of oil-particle aggregates	University of Buffalo
Viviana Morales	2016	Integral Modeling of Urban Drainage and Flooding	University of Cuenca, Ecuador
David Waterman	2016	Non-cohesive Bank Migration in Meandering Rivers and Bank Accretion in Weakly Braided Rivers	University of Illinois
Roberto Fernandez	2017	Bedrock Meandering Streams (Co-advised with Gary Parker)	University of Illinois
Dimitrios Fytanidis	2018	LES Modeling of Oscillatory Boundary-Layer Flows (in progress)	University of Illinois
Santiago Santa Cruz	2017	Adaptive Management of Chicago Waterways to Reduce Flooding and Pollution (in progress)	University of Illinois
Heng Wu	2018	Effect of bed permeability on initiation of motion (in progress)	University of Illinois
Dongchen Wang	2018	Modeling of buoyancy-driven flows in Chicago waterways (in progress)	University of Illinois



Student Name	Year Graduated	Thesis Title	Placement
Zhi Li	2019	Morphodynamics of meander cut-offs (in progress)	University of Illinois
Yifan He	2018	Water Quality Modeling of Chicago Waterways System (in progress)	University of Illinois

### Post-Doctoral Associates and Visiting Scientists (25 total)

Name	Title (percent time)	Country of Origin	Permanent Employer	Years
Juan Pedro Martin Vide	Professor	Spain	Universidad Politecnica de Barcelona	2001
Gustavo Buscaglia,	Professor	Argentina	Instituto Balseiro	2003
Francoise Bigillon	Dr.	France	Consulting, Chile	2004
Leonardo Nania	Professor	Spain	University of Granada	2005
Stephen Coleman* (*deceased)	Professor	New Zealand	University of Auckland	2001
Silvinia Mangini	Graduate Student	Argentina	Universidad Nacional del Litoral	2003
Yarko Niño,	Professor	Chile	University of Chile	2003
Jim Best	Professor	U K	University of Leeds	2004
Sandra Soares Frazao	Dr.	Belgium	Catholique University	2006
Yovanni Catano	Dr.	Colombia	University of Illinois	2006
Arturo Leon	Dr.	Peru	University of Illinois	2008
Nahil Sobh	Dr.	USA	University of Illinois	2009
Rocio Fernandez,	Dr.	Argentina	Universidad Nacional de Cordoba	2009
Xiaofeng Liu	Dr.	China	Penn State University	2009
Meilan Qi	Professor	China	Beijing Jiaotong University	2009
Silvina Garrido	Undergraduate student	Argentina	Universidad Nacional del Litoral	2008
Eduardo Puhl	Graduate student	Brazil	Universidad Federal de Rio Grande do Sul	2009
Anna Mujal i Colilles	Graduate Student	Spain	Universitat Politècnica de Catalunya, Barcelona	2011 2012
Talia Tokyay	Post-Doctoral Research Associate	Turkey	Istanbul Technical University	2010 2012
Su-Jin Kim	Post-Doctoral Research Associate	South Korea	Hanyang University, South Korea	2013
Blake Landry	Post-Doc & Lecturer	USA	Naval Research Labs, MS	2011- 2016
Juan Camilo Quijano	Post-Doctoral Research Associate	Colombia	Universidad de Cuenca, Ecuador	2014- 2016
Zhenduo Zhu	Post-Doctoral Research Associate	China	University of Buffalo	2016

Name	Title (percent time)	Country of Origin	Permanent Employer	Years
Carlo Zumillioa Zuniga	Post-Doctoral Research Associate	Peru	University of Illinois	2014-2017
Alejandro Vitale	Post-Doctoral Visiting Scholar	Argentina	Instituto Argentino de Oceanografía	2015

## PUBLICATIONS

### BOOKS & MONOGRAPHS

García, M.H., Environmental Hydrodynamics, Publications Center, Universidad Nacional del Litoral, Sante Fe, Argentina, 189 pp., 1996 (in Spanish).

Parker, G. and M.H. Garcia, (Editors), "River, Coastal, and Estuarine Morphodynamics, vols. I & II," Proceedings of the 4th Symposium on River, Coastal and Estuarine Morphodynamics, Urbana, Illinois, October 2005.

García, M.H. (Corresponding Editor), Manual of Practice 54, "Sedimentation Engineering," Classic Edition, V.A. Vanoni (editor), Environmental and Water Resources Institute (EWRI), American Society of Civil Engineers (ASCE), 2006.

García, M.H. (Editor-in-Chief), Manual of Engineering Practice 110, "Sedimentation Engineering," Environmental and Water Resources Institute (EWRI), American Society of Civil Engineers (ASCE), 2008, 1150p.

Vionnet, C., M.H.Garcia, E. Latrubesse, and G. Perillo (Editors), "River, Coastal, and Estuarine Morphodynamics, vols. I & II," Proceedings of the 6th Symposium on River, Coastal and Estuarine Morphodynamics, Santa Fe, Argentina, September 2010.

Constantinescu, G., Garcia, M.H., and D. Hanes (Editors), River Flow 2016, Proceedings of the International Conference on Fluvial Hydraulics, St Louis, USA, July 2016.

Muste, M., Lyn, D., Admiraal, D., Ettema, R., Nikora, V., and M.H. Garcia (Editors), Experimental Hydraulics: Volume I, Fundamental and Methods, New York, NY., CRC Press, Taylor & Francis Group, p. 570 (*in press*)

García, M.H. et al. (2017), Técnicas de Velocimetría para la Caracterización Experimental de Flujos Turbulentos en Hidráulica, International Association for HydroEnvironmental Engineering and Research, LAD-IAHR, Madrid, Spain (*in preparation*).

Niño, Y., and M.H. García, Environmental Hydrodynamics: an introduction, IAHR Monograph Series, currently under preparation.

### ENCYCLOPEDIA ARTICLES

García, M.H., "Turbidity Currents" in Encyclopedia of Earth System Science, Vol. 4, edited by W.A. Nieremberg, Academic Press Inc., pp. 399-408, 1992 (invited).

García, M.H., "Turbidity Current" in McGraw-Hill Encyclopedia of Science and Technology, 8th Edition, 18:680, 1997 (invited)

Admiraal, D.M. and García, M.H. (2002) "Impacts of Navigation and Navigation Structures on Rivers," Article 2.7.5.1 in Rivers and Streams, in Encyclopedia of Life Support Systems (EOLSS), Oxford, UK. (invited).

Admiraal, A. and M.H. Garcia, Chapter on "Sediment Transport Measurements," in Encyclopedia of Experimental Fluid Mechanics," Springer-Verlag, Berlin, 2007 (Invited)

## CHAPTERS IN BOOKS

García, M.H., Y. Niño, and F. López, "Laboratory Observations of Particle Entrainment Into Suspension by Turbulent Bursting" Chapter 3 in Coherent Flow Structures in Open Channels: Origins Scales, and Interaction with Sediment Transport and Bed Morphology, edited by P. Ashworth, S. Bennetts, J. Best, and S. McLelland, John Wiley & Sons, Ltd., 63-86, 1996.

García, M.H., "Sedimentation and Erosion Hydraulics," Chapter 6 in Hydraulic Design Handbook, edited by Larry Mays, McGraw-Hill, Inc., 1999.

Reible, Danny, Sam Bentley, Mimi B. Dannel, Joseph V. De Pinto, James A. Dyer, Kevin J. Farley, Marcelo H. Garcia, David Glaser, John M. Hamrick, Richard H. Jensen, Wilbert J. Lick, Robert A. Pastorok, Richard F. Schwer, C. Kirk Ziegler (2003). Chapter 2 "The Role of Modeling in Managing Contaminated Sediments," in Contaminated Ground Water and Sediment Modeling for Management and Remediation Edited by Chunmiao Zheng , Danny D. Reible , George F. Pinder , Calvin C. Chien , Brent E. Sleep and Miguel A. Medina, CRC Press, Print ISBN: 978-1-56670-667-4, eBook ISBN: 978-0-203-49415-8, DOI: 10.1201/9780203494158.ch2.

Garcia, M.H., "Sediment Transport and Morphodynamics," Chapter 2 in ASCE Sedimentation Engineering Manual of Practice 110, Edited by Marcelo H. Garcia, 2008.

Garcia, M.H., MacArthur, R. Bradley, J., and R. French, "Sedimentation Hazards," Chapter 19 in ASCE Sedimentation Engineering Manual of Practice 110, Edited by Marcelo H. Garcia, 2008

Garcia, M.H., "Modeling Sediment Entrainment into Suspension, Transport, and Deposition in Rivers," Chapter in "Model Validation in Hydrologic Science," Paul Bates and Malcolm Anderson (Editors), Wiley and Sons, United Kingdom, 2001.

Fedele, J., and M.H. Garcia, "Hydraulic Roughness in Alluvial Streams: A Boundary Layer Approach," Chapter in Riverine, Coastal, and Estuarine Morphodynamics, G. Seminara (Editor) Springer-Verlag, Italy, 2001.

Garcia, M.H., Lopez, F., Dunn, C. and C. Alonso, "Flow Turbulence and Resistance in a Flume with Simulated Vegetation," Chapter 5 in "Riparian Vegetation and Fluvial Geomorphology," American Geophysical Union, Water Science and Publication, pp. 11-27, Washington, D.C., 2004.

Rhoads, B.L., Garcia, M.H., Rodriguez, J.F., Abad, J.D., Bombardelli, F.A., Daniels, M., 2005. Evaluating the geomorphological performance of naturalized rivers. In: Sears, D., Darby, S. (Eds.). Uncertainty in River Restoration, 44pp.

León A. S., Ghidaoui, M. S., Schmidt, A. R., and García M. H. (2006). "An Efficient Finite-volume scheme for modeling two-phase flows using the single-equivalent fluid approximation." Chapter in

Computational Hydraulics Monograph 15, ed. by: E. McBean, R. Pitt, K. Irvine, and W. James, CHI, Ontario, Canada.

León, A. S., Oberg N., Schmidt, A. R., and García, M. H. (2011). "The Illinois Transient Model. A state-of-the-art model for simulating the flow dynamics in combined storm-sewer systems". Urban Water Systems Monograph 19.

Arndt, R.E.A., Kawakami, D., Wosnik, M., Perlin, M., Duncan, J.H., Admiraal, D.M., and M.H. Garcia, Chapter 15 "Hydraulics" in Handbook of Experimental Fluid Mechanics, Springer-Berlag, Heidelberg, Germany, 959-1033, 2007.

Parsons, J.D., Friedrichs, C. T., Mohrig, D., Traykovski, P., Imran, J., Syvitski, J. P. M., Parker, G., Puig, P., Buttles, J. and M.H. Garcia, (2007), The mechanics of marine sediment gravity flows, Continental Margin Sedimentation: From Sediment Transport to Sequence Stratigraphy, in IAS Special Publication 37, Editors: C.A. Nittrouer, Austin, J.A., Jr., Field, M.E., Kravitz, J.H., Syvitski, J.P.M., Wiberg, P.L. Blackwell Publishing Ltd: Oxford

Syvitski, J.P.M., L. Pratson, P. Wiberg, M. Steckler, M.H. Garcia, R. Geyer, C. Harris, E. Hutton, J. Imran, H. Lee, M. Morehead, and G. Parker. 2007. Prediction of Margin Stratigraphy. Chapter IX of Continental-Margin Sedimentation: From Sediment Transport to Sequence Stratigraphy, C. Nittrouer, et al. (eds), Blackwell Press.

Ashmore, P. and Garcia, M. (2009) 'St. Clair River Sediment Regime' in Impacts on Upper Great Lakes Water Levels: St. Clair River Final Report (International Upper Great Lakes Study (IUGLS), International Joint Commission) 4, 57-84

Martin, J.E., Sun, T., and M.H. Garcia, Chapter 18: Optical Methods in the Laboratory: an application to density currents over bedforms, Environmental Fluid Mechanics: memorial Volume in Honour of Prof. Gerhard H. Jirka, W. Rodi and M Uhlman (Editors), IAHR Monograph, CRC Press-Taylor & Francis Group, 333-346, 2012.

Martin, J.E., Carr, M. and M.H. Garcia, Transport and Mixing in Rivers, in Handbook of Environmental Fluid Mechanics, H.J.S. Fernando (Editor), Taylor and Francis, 2012.

Garcia, M.H. "Ven Te Chow; Hydrologist, Educator, Rainmaker," Chapter in CHANGING THE WORLD FROM A VERY SMALL PLACE, Fred Hoxie (Editor), University of Illinois Press, Urbana, Illinois (2017) *in press*

Garcia, M.H (2017), Mobile Boundary Channels and Sediment Transport, In: Muste, Lyn, Admiraal, Ettema, Nikora, Garcia (editors), Experimental Hydraulics: Volume I, Fundamental and Methods, New York, NY., CRC Press, Taylor & Francis Group, p. 570

## **NATIONAL ACADEMIES REPORTS**

Siegel, D.L. (Chair), Bradley Jr., A.A., Conklin, M.H., Crawford, C.S., Galloway, G.E, Garcia, M.H., Howit, R.E., Palmer, M.A., Pitlick, J., Poff, LN.L., Schwartz, S.S., Tarboton, D.G. Woessner, A.W., **River Science at the U.S. Geological Survey**, National Research Council, National Academies, 2007.

Schubel, J. (Chair), Bokuniewicz, H.J., Bontadelli, Jr., P.F., Diaz, R.J., Garcia, M.H., Mohan, R.K., Reed, D.J., Stedman, S.M., Stolpe, N.S., Torgan, J.B., Wakeman, T.H., Weisntein, M.P., **A process for setting, managing, and monitoring environmental windows for dredging projects** / Committee for

Environmental Windows for Dredging Projects. Transportation Research Board Special Report 262 ISBN 0-3-9-07244-1, National Academy Press, Washington, D.C., 2001.

Galloway, G.E. (Chair), Blöschl, G., Garcia, M.H., Montanari, A., Seminara, G., Solari, L., INTERNATIONAL TECHNICAL AND SCIENTIFIC COMMITTEE OF FLORENCE 2016. **Report on the Protection of Florence from Flooding.** <http://toscana.firenze2016.it/protection-of-florence-from-flooding-final-report-of-itsc/>. December 2016

## ARTICLES IN PEER-REVIEWED JOURNALS

1. Parker, G., M. H. García, Y. Fukushima, and W. Yu, "Experiments on Turbidity Currents over an Erodeable Bed," IAHR Journal of Hydraulic Research, 25:1, 123-147, 1987.
2. García, M.H., and G. Parker, "Experiments on Hydraulic Jumps in Turbidity Currents Near a Canyon-Fan Transition," Science, 117:4, 393-396, July 1989.
3. García, M.H., and G. Parker, "Entrainment of Bed Sediment into Suspension," ASCE Journal of Hydraulic Engineering, 117:4, 414-435, April 1991.
4. García, M.H., and G. Parker, "Experiments on the Entrainment of Sediment into Suspension by a Dense Bottom Current," AGU Journal of Geophysical Research (oceans), 98:C3, 4793-4807, March 1993.
5. García, M.H., "Hydraulic Jumps in Sediment-laden Bottom Currents," ASCE Journal of Hydraulic Engineering, 199:6, 1094-1117, October 1993.
6. García, M.H., and Y. Niño, "Dynamics of Sediment Bars in Straight and Meandering Channels: Experiments on the Resonance Phenomenon," IAHR Journal of Hydraulic Research, 31:6, 739-761, 1993.
7. Niño, Y., M.H. García, and L. Ayala, "Gravel Saltation I: Experiments," AGU Water Resources Research, 30:6, 1907-1914, June 1994.
8. Niño, Y., and M.H. García, "Gravel Saltation II: Modeling," AGU Water Resources Research, 30:6, 1915-1924, June 1994.
9. García, M.H., "Depositional Turbidity Currents Laden with Poorly-Sorted Sediment," ASCE Journal of Hydraulic Engineering, 120:11, 1240-1263, Nov. 1994 (**Received the 1996 Karl Emil Hilgard Hydraulic Prize from ASCE**).
10. García, M.H., F. López, and Y. Niño, "Characterization of Near-Bed Coherent Structures in Turbulent Open Channel Flow Using Synchronized High-Speed Video and Hot-Film Measurement," Experiments in Fluids, 19, 16-28, 1995.
11. Choi, S.U., and M. H. García, "Modeling of One-Dimensional Turbidity Currents with a Dissipative-Galerkin Finite Element Method," IAHR Journal of Hydraulic Research, 33:5, 1 26, 1995.
12. García, M.H., and J.D. Parsons, "Mixing at the Front of Gravity Currents," Dynamics of Atmospheres and Oceans, 24, 197-205, 1996.

13. López, F., Y. Niño, and M.H. García, "Turbulent Coherent Structures in Open-Channel Flows with Smooth Beds," *Hydraulic Engineering in Mexico*, XI:1, 5-13, IMTA, Mexico, 1996 (in Spanish).
14. Pratson, L.F., H.J. Lee, G. Parker, M.H. García, B.J. Coakley, D. Mohrig, J. Locat, U. Mello, J.D. Parsons, S. Choi, and K. Israel, "Studies of Mass-Movement Processes on Submarine Slopes," *Oceanography*, 9:3, 168-172, 1996.
15. Choi, S.U., and M.H. García, "Arbitrary Lagrangian-Eulerian Approach for Finite Element Modeling of Two-Dimensional Turbidity Currents," *Water International*, 21, 175-182, 1996.
16. Niño, Y., and M.H. García, "Experiments on Particle-Turbulence Interactions in the Near Wall Region of an Open Channel Flow: Implications for Sediment Transport," *Journal of Fluid Mechanics*, 326, 285-319, 1996.
17. Huang, X., and M.H. García, "A Perturbation Solution for Bingham Plastic Mud Flows," *ASCE Journal of Hydraulic Engineering*, 123:11, 984-996, 1997 (*Received the 1999 Karl Emil Hilgard Hydraulic Prize from ASCE*).
18. Niño, Y. and M.H. García, "On Engelund's Analysis of Turbulent Energy and Suspended Load," *ASCE Journal of Engineering Mechanics*, 124:4, 480-483 (technical note), 1998.
19. Niño, Y., and M.H. García, "Using Lagrangian Particle Saltation Observations for Bedload Sediment Transport Modeling," *Hydrological Processes*, 12, 1197-1218, 1998.
20. Niño, Y. and M.H. García, "Experiments on Saltation of Fine Sand," *ASCE Journal of Hydraulic Engineering*, 124:10, 1014-1025, 1998.
21. López, F., and M.H. García, "Open-Channel Flow through Simulated Vegetation: Suspended Sediment Transport Modeling," *Water Resources Research*, 34:9, 2341-2352, 1998.
22. Huang, X., and M.H. García, "A Herschel-Bulkley Model for Mud Flows Down a Slope," *Journal of Fluid Mechanics*, 374, 305-333, 1998.
23. Parsons, J.D., and M.H. García, "Similarity of Gravity Current Fronts," *Physics of Fluids*, 10:12, 3209-3213, 1998.
24. Huang, X., and M.G. García, "Modeling of Non-Hydroplaning Mudflows on Continental Slopes," *Marine Geology*, 154:131-142, 1999.
25. López, F., and M.H. García, "Wall Similarity in Open Channels: Universal value of the Normalized Vertical Flux of Turbulent Kinetic Energy," *ASCE Journal of Engineering Mechanics*, "Special Issue on Turbulence," 125:7, 789-796, July 1999.
26. García, M.H., Admiraal, D.M., and J.F. Rodriguez, "Laboratory Experiments on Navigation-Induced Bed Shear Stresses and Sediment Resuspension," vol. 14(2), 303-317, *International Journal of Sediment Research*, 1999.
27. Niño, Y., F. Lopez, I. Hillmer, C. Pirard, and M.H. García, "Numerical Modeling of Wind-Induced Turbulent Mixing Processes in Stratified Water Bodies. *Hydraulic Engineering in Mexico*, vol. XV, 1, 13-25, 2000 (in Spanish).

28. Admiraal, D. and M.H. García, "Laboratory Measurements of Suspended Sediment Concentration Using an Acoustic concentration Profiler (ACP)," *Experiments in Fluids*, Vol. 28, 116-227, 2000.
29. Parsons, J.D. and M.H. García, "Enhanced Sediment Scavenging Due to Double-Diffusive Convection," *Journal of Sedimentary Research*, Vol. 70, N1, 47-52, January 2000.
30. Huang, X. and M.H. García, "Pollution of Gravel Spawning Grounds by Deposition of Suspended Sediment," *Journal of Environmental Engineering, ASCE*, Vol. 126, N10, 963-967, October 2000.
31. Admiraal, D. and M.H. García, "Entrainment Response of Bed Sediment to Time-Varying Flows," *Water Resources Research*, 36: 1, 335-348, January 2000.
32. Lopez, F. and M.H. García, "Open-Channel flow Through Simulated Vegetation: Mean Flow and Turbulence Modeling," *Journal of Hydraulic Engineering, ASCE*, vol. 127, N5, 392-402, May 2001.
33. Lopez, F. and M.H. García, "Risk of Sediment Erosion and Suspension in Turbulent Flows," *Journal of Hydraulic Engineering, ASCE*, Vol. 127, N3, 231-235, March 2001.
34. Rodriguez, J.F., Garcia, M.H. and Admiraal, D.M. "Computation of entrainment of sediment into suspension in unsteady turbulent flows using a stochastic approach." *Ingenieria Hidraulica en Mexico*, 16(2), 5-16, 2001 (in Spanish).
35. Choi, S-U. and Garcia, M.H. "Spreading of gravity plumes on an incline," *Coastal Engineering*, v. 43, p. 221-237, 2001.
36. Teeter, A.M., Johnson, B.H., Berger, C., Stelling, G., Scheffner, N.W., Garcia, M.H. and Parchure, T.M., "Hydrodynamic and sediment transport modeling with emphasis on shallow-water, vegetated areas (lakes, reservoirs, estuaries and lagoons)," *Hydrobiologia*, 444: 1-23, 2001.
37. Choi, S-U. and Garcia, M.H. "K-Epsilon turbulence modeling of density currents developing two dimensional on a slope," *Journal of Hydraulic Engineering, ASCE*, v. 128, p. 55-62, 2002.
38. Rodríguez, J. F., Admiraal, D.M., García, M.H. and López, F., "Unsteady bed shear stresses induced by navigation: laboratory observations," *Journal of Hydraulic Engineering, ASCE*, 128(5), 2002.
39. Bombardelli, F. A., Hirt, C. W., and García, M. H., "Discussion on 'Computations of curved free surface water flow on spiral concentrators,' by B. W. Matthews, C. A. J. Fletcher, A. C. Partridge, and S. Vasquez." *J. Hyd. Engrg., ASCE*, 122(7), 629-630, 2001.
40. Wade, R. J., Rhoads, B. L., Rodríguez, J. F., Daniels, M., Wilson, D., Herricks, E. E., Bombardelli, F. A., García, M. H., and Schwartz, J., "Integrating science and technology to support stream naturalization near Chicago, Illinois." *J. American Water Resources Association*, AWRA, 38, 931-944, 2002.
41. Buscaglia, G. C., Bombardelli, F. A., and García, M. H., "Numerical modeling of large-scale bubble plumes accounting for mass transfer effects." *Int. J. of Multiphase Flow*, Vol. 28, 1763-1785, 2002.

42. Bombardelli, F.A. and Garcia, M.H. "Hydraulic design of large-diameter pipes," *Journal of Hydraulic Engineering*, ASCE, Vol. 129, No. 11, 839-846, November, 2003.
43. Niño, Y., F. Lopez, and M.H. Garcia, "Threshold for Particle Entrainment into Suspension," *Sedimentology*, Vol. 50, 247-263, 2003.
44. Coleman, S.E., Fedele, J.J., and Garcia, M.H., "Closed-conduit bed-form initiation and development," *Journal of Hydraulic Engineering*, ASCE, Vol. 129, No. 12, 956-965, December, 2003.
45. Rodríguez, J. F., Bombardelli, F. A., García, M. H., Frothingham, K., Rhoads, B. L., Abad, J. D., and Guzmán, J. M. "High-resolution numerical simulation of flow through a highly sinuous river reach." *Water Resources Management*, Kluwer, vol. 18, pp. 177-199, 2004.
46. Garcia, C.M., Cantero, M, Nino, Y. and Garcia, M.H. "Turbulence Measurements Using Acoustic Doppler Velocimeters," *Journal of Hydraulic Engineering*, ASCE, 131: 1062-1073, 2005.
47. Abad J. D. and García, M. H., "RVR Meander: A toolbox for re-meandering of channelized streams," *Computers & Geosciences*, 32: 92-101, 2006.
48. Cataño-Lopera, Y. and García, M.H. "Burial of Short Cylinders Induced by Scour under Combined Waves and Currents." *J. Wtrwy., Port, Coast., and Oc. Engrg.*, ASCE, Vol. 132, No. 6, pp. 439-449, 2006.
49. Cataño-Lopera, Y. and García, M.H., "Geometry and Migration Characteristics of Bedforms under Waves and Currents: Part 1, Ripples Superimposed on Sandwaves." *Coastal Engineering*, Vol. 53, Issue 9, pp.767-780, 2006.
50. Cataño-Lopera, Y. and García, M.H., "Geometry and Migration Characteristics of Bedforms under Waves and Currents: Part 2, Sandwaves and flow structure." *Coastal Engineering*, Vol. 53, Issue 9, pp.781-792 2006.
51. Bigillon, F., Nino, Y., and Garcia, M.H., "Measurements of turbulence characteristics in an open-channel flow over a transitionally-rough bed using particle image velocimetry." *Experiments in Fluids*, 41:857-867, DOI 10.1007/s00348-006-0201-2, 2006.
52. Cantero, M.; Balachandar, S.; García, M. and Ferry, J., "Direct numerical simulation of planar and cylindrical density currents," *Journal of Applied Mechanics*, ASME, 73, 923-930, 2006.
53. Leon A. S., Ghidaoui, M. S., Schmidt, A. R., and García M. H.. "Godunov-type solutions for transient flows in sewers." *J. Hydraul. Eng.*, ASCE, 132(8), 800-813, 2006.
54. García C.M.; Jackson P; and García M.. "Confidence intervals in the determination of turbulence parameters". *Experiments in Fluids*, Volume 40, Issue 4, pp 514-522, April 2006.
55. Admiraal, D., Musalem, R., Garcia, M.H., and Nino, Y, "Vortex trajectory hysteresis above self-formed vortex ripples," *Journal of Hydraulic Research*, IAHR, 44:4, 437-450, 2006.
56. García C.M. and García M.H., "Characterization of flow turbulence in large-scale bubble-plume experiments," *Experiments in Fluids*, 41: 91-101, 2006.
57. Pedocchi, F., and García M.H., "Evaluation of the LISST-ST instrument for suspended particle size distribution and settling velocities," *Continental Shelf Research*, 26, 943-958, 2006.



58. Pedocchi, F., and García M.H., "Noise-resolution trade-off in projection algorithms for laser diffraction particle sizing," *Applied Optics*, 45(15), 2006.
59. Cataño-Lopera, Y., Demir, S.T., and García, M.H. "Self-Burial of Short Cylinders under Oscillatory Flows and Combined Waves." *IEEE J. of Oceanic Engineering*, Vol. 32, No. 1, pp. 191-203, 2007.
60. Cataño-Lopera, Y. and García, M.H., 2007. "Geometry of Scour Hole around, and Influence of the Angle of Attack on the Burial of Short Cylinders under Combined Flows." *Ocean Engineering*, Vol. 34, pp. 856-869, 2007.
61. Demir, S.T. and García, M.H., "Experimental studies on burial of finite-length cylinders under oscillatory flow." *J. Waterway, Port, Coast., and Oc. Engrg.*, ASCE, 137:2, 117-125, 2007.
62. Sequeiros, O., Nino, Y. and Garcia, M.H., "Erosion of finite thickness sediment beds by single and multiple circular jets," *IAHR, J. Hydraul. Eng.*, ASCE, 2007.
63. Cantero, M.I., Lee, J.R., Balachandar, S., and Garcia, M.H., "On the front velocity of gravity currents," *Journal of Fluid Mechanics*, vol. 586, 1-39, 2007.
64. Cataño-Lopera, Y. and García, M.H.. "Closure to: Burial of Short Cylinders Induced by Scour under Combined Waves and Currents." *J. Waterway, Port, Coast., and Oc. Engrg.*, ASCE, Vol. 132, No. 6, pp. 439-449, 2007.
65. Cantero, M.I., Balachandar, S., and Garcia, M.H., "High-resolution simulations of cylindrical density currents," *Journal of Fluid Mechanics*, vol. 590, 437-469, 2007.
66. Mueller, D.S., Abad, J.D., Garcia, C.M., Gartner, J.W., Garcia, M.H., and Oberg, K.A., "Errors in acoustic Doppler profiler velocity measurements caused by flow disturbance," *Journal of Hydraulic Engineering*, ASCE, v. 133, p. 1411-1420, 2007.
67. Garcia, C.M., Oberg, K.A. and Garcia, M.H., ADCP measurements of gravity currents in the Chicago River, *Illinois Journal of Hydraulic Engineering*, ASCE, vol. 133, p. 1,356-1,366, 2007.
68. Liu, X. and M.H. García. "Numerical Investigation of Sea Bed Response under Waves with Free-surface Water Flow," *International Journal of Offshore and Polar Engineering*, 17(2), 97-104, 2007.
69. Liu, X. and M.H. García. "A 3D Numerical Model with Free Water Surface and Mesh Deformation for Local Sediment Scour." *Journal of Waterway, Port, Coastal, and Ocean Engineering*. 134(4): 203-217, 2007.
70. Rodriguez, J.F. and M.H. Garcia, Laboratory measurements of 3-D flow patterns and turbulence in straight open channel with rough bed, *Journal of Hydraulic Research*. 04/2010; July 2008(4):454-465. DOI: 10.3826/jhr.2008.2994
71. Abad, J. D., Buscaglia, G. and Garcia, M. H. "2D Stream Hydrodynamic, sediment transport and bed morphology model for engineering applications," *Hydrological Processes*. 22: 1443-1459 2008.
72. Abad, J. D., Rhoads, B. L., Guneralp, I., García, M. H. "Flow structure at different stages in a meander-bend with bendway weirs". *Journal of Hydraulic Engineering*, ASCE 138 (8): 1052-1053, 2008.

73. León, A. S., Ghidaoui, M. S., Schmidt, A. R. and Garcia, M. H. "Efficient second-order accurate shock-capturing scheme for modeling one and two-phase water hammer flows." *Journal of Hydraulic Engineering, ASCE*, 134, (7), 970-983, 2008.
74. Cantero, M.; García, M.H. ; and Balachandar, S. "An Eulerian-Eulerian model for gravity currents driven by inertial particles," *International Journal of Multiphase Flow*, Vol. 34(5) 484-501, 2008.
75. Cantero, M.; García, M ; and Balachandar, S. "Effect of particle inertia on depositional particulate gravity currents," *Computers and Geosciences*, vol. 34 (10) 1308-1318, 2008.
76. Liu, X., Landry, B.J. and M.H. García. "Coupled Two-Dimensional Model for Scour Based on Shallow Water Equations with Unstructured Mesh." *Coastal Engineering*. 55(10):800-810, 2008.
77. Catano-Lopera, Y.A., and Garcia, M.H. Closure to: Burial of Short Cylinders Induced by Scour under Combined Waves and Currents." *J. Wtrwy., Port, Coast., and Oc. Engrg., ASCE*, Vol. 134, No. 4, July/August, 261-264, 2008.
78. Sequeiros, O.; Cantero, M.; and García, M.H., "Sediment management by jet and turbidity currents". *Journal of Hydraulic Research*. 04/2010; May 2009:340-348. DOI: 10.1080/00221686.2009.9522005
79. Bombardelli, F.; Cantero, M.; Buscaglia, G.; and García, M. 2008. "Numerical aspects of the simulation of discontinuous saline underflows: the lock-exchange problem". *Journal of Hydraulic Research*, 2009.
80. Cantero, M.; Balachandar, S.; García, M.; and Bock, D. "Turbulent structures in gravity currents". *Journal of Geophysical Research-Oceans*, vol. 113, 2008.
81. Pedocchi, F., Martin, J. E. and García, M. H., 2008. "Inexpensive fluorescent particles for large-scale experiments using Particle Image Velocimetry." *Experiments in Fluids*. Vol. 45(1), 183-186.
82. Sequeiros, O. E., Spinewine, B., Garcia, M. H., Beaubouef, R. T., Sun, T. and Parker, G. 2009. Experiments on wedge-shaped deep sea sedimentary deposits in minibasins and/or on channel levees emplaced by turbidity currents. Part I. Documentation of the flow. *Journal of Sedimentary Research*, 79(7-8), 593-607.
83. Pedocchi, F. and Garcia, M. H., 2009. Friction coefficient for oscillatory flow: the rough-smooth turbulent transition. *Journal of Hydraulic Research*, v. 47-4 , p. 438-444.
84. Dai, A. and M.H. Garcia, 2009. " Meandering Instability of a Vertical Plume," *Journal of Engineering Mechanics, ASCE* , vol. 135, no. 2, 2009 DOI: 10.1061/(ASCE)0733-9399(2009)135:2(111)
85. Dai, A. and M.H. Garcia, 2009. "Stability of a Pair of Counterrotating and Corotating Vortices of Different Strengths," *Journal of Engineering Mechanics, ASCE* , vol. 135, no. 6, 2009
86. Spinewine, B., Sequeiros, O. E., Garcia, M. H., Beaubouef, R. T., Sun, T., Savoye, B. and Parker, G. 2009. Experiments on wedge-shaped deep sea sedimentary deposits in minibasins and/or on channel levees emplaced by turbidity currents. Part II. Morphodynamic evolution of the wedge and of the associated bedforms *Journal of Sedimentary Research*, 79(7-8), 608-628.

87. Sequeiros, O. E., Naruse, H., Endo, N., Garcia, M. H. and Parker, G. 2009. Experimental study on self-accelerating turbidity currents. *Journal of Geophysical Research*, 114, C05025, 26 p.
88. Sequeiros, O. E., Cantelli, A., Viparelli, E., White, J D L., Garcia, M. H. and Parker, G. 2009. Modeling turbidity currents with non-uniform sediment and reverse buoyancy. *Water Resources Research*, 45, W06408, 28 p.
89. Martin, J. E. and Garcia, M. H. (2009). Combined PIV/PLIF measurements of a steady density current front. *Exp. Fluids*, 46:265 – 276.
90. Catano-Lopera, Y., Abad, J. D. and Garcia, M. H. (2009) “Characterization of bedform morphology using wavelet analysis,” *Ocean Engineering*, 36, 617-632.
91. Abad, J. D., and Garcia, M. H. (2009) “Experiments in a high-amplitude Kinoshita meandering channel: 1. Implications of bend orientation on mean and turbulent flow structure”, *Water Resources Research*, 45, W02401,doi:10.1029/2008WR007016.
92. Abad, J. D., and M Garcia, M. H. (2009) “Experiments in a high-amplitude Kinoshita meandering channel: 2. Implications of bend orientation on bed morphodynamics”, *Water Resources. Research*, 45, W02402, doi:10.1029/2008WR007017.
93. León, A. S., Ghidaoui, M. S., Schmidt, A. R. and Garcia, M. H. (2009) “Application of Godunov-type schemes to transient mixed flows.” *Journal of Hydraulic Research*, 47(2), 147-156.
94. Pedocchi, F.; Garcia, M. H.(2009)"Ripple morphology under oscillatory flow: 1. Prediction." *Journal of Geophysical Research-Oceans*, VOL. 114, C12014, 16 PP.,doi:10.1029/2009JC005354
95. Pedocchi, F.; Garcia, M. H.(2009)"Ripple morphology under oscillatory flow: 2. Experiments." *Journal of Geophysical Research-Oceans*, VOL. 114, C12015, 17 PP.,doi:10.1029/2009JC005356
96. León, A. S., Liu, X., Ghidaoui, M. S., Schmidt, A. R., and Garcia, M. H. (2010) “Junction and drop-shaft boundary conditions for modeling free-surface, pressurized, and mixed free-surface pressurized transient flows.” *Journal of Hydraulic Engineering*, 136(10), 705-715.
97. León, A. S., Ghidaoui, M. S., Schmidt, A. R. and Garcia, M. H. (2010) “A robust two-equation model for transient mixed flows.” *Journal of Hydraulic Research*, 48(1), 44-56.
98. Dai, Albert; Garcia, Marcelo H. (2010)"Gravity currents down a slope in deceleration phase." *Dynamics of Atmospheres and Oceans*, 49(1), 75-82.
99. Sequeiros, O. E.; Spinewine, B.; Beaubouef, R. T.; Sun, T.; Garcia, M. H, Parker, G. (2010) "Characteristics of Velocity and Excess Density Profiles of Saline Underflows and Turbidity Currents Flowing over a Mobile Bed." *Journal of Hydraulic Engineering - ASCE*, 136(7), 412-433.
100. Catano-Lopera, Yovanni A.; Waratuke, Andrew R.; Garcia, Marcelo H. (2010) "Experimental Investigation of a Vortex-Flow Restrictor: Rain-Blocker Performance Tests." *Journal of Hydraulic Engineering - ASCE*, 136(8) 528-533.
101. Dai, Albert; Garcia, Marcelo H. (2010) "Energy Dissipative Plunging Flows." *Journal of Hydraulic Engineering - ASCE*, 136(8), 519-523.

102. Motta, Davide; Abad, Jorge D.; Garcia, Marcelo H.(2010) "Modeling Framework for Organic Sediment Resuspension and Oxygen Demand: Case of Bubbly Creek in Chicago." *Journal of Hydraulic Engineering - ASCE*, 136(9), 952-964. **Recognized with the ASCE 2012 Wesley Horner Award for best publication.**
103. Leon, Arturo S.; Liu, Xiaofeng; Ghidaoui, Mohamed S.; Schmidt, Arthur R.; Garcia, Marcelo H. (2010) "Junction and Drop-Shaft Boundary Conditions for Modeling Free-Surface, Pressurized, and Mixed Free-Surface Pressurized Transient Flows." *Journal of Hydraulic Engineering - ASCE*, 136(10), 705-715.
104. Sequeiros, Octavio E.; Spinewine, Benoit; Beaubouef, Rick T.; Sun, Tao; Garcia, Marcelo H.; Parker, G. (2010) "Bedload transport and bed resistance associated with density and turbidity currents." *Sedimentology*, 57(6), 1463-1490.
105. Fernandez, Rocio; Cauchon-Voyer, Genevieve; Locat, Jacques; Dai, Hsi-Heng; Garcia, Marcelo H.; Parker, G. (2011) "Co-evolving delta faces under the condition of a moving sediment source." *Journal of Hydraulic Research*, 49(1), 42-54.
106. Pedocchi, Francisco; Cantero, Mariano I.; Garcia, Marcelo H.(2011) "Turbulent kinetic energy balance of an oscillatory boundary layer in the transition to the fully turbulent regime." *Journal of Turbulence*, 12(32), 1-27.
107. Liu, Xiaofeng; Garcia, Marcelo H. (2011) "Computational Fluid Dynamics Modeling for the Design of Large Primary Settling Tanks." *Journal of Hydraulic Engineering - ASCE*, 137(3), 343-355
108. Catano-Lopera, Yovanni A.; Landry, Blake J.; Garcia, Marcelo H. (2011) "Scour and burial mechanics of conical frustums on a sandy bed under combined flow conditions." *Ocean Engineering*, 38(10), 1256-1268.
109. Waterman, David M.; Waratuke, Andrew R.; Motta, Davide; Catano-Lopera, Yovanni A.; Zhang, Heng; Garcia, Marcelo H. (2011) "In Situ Characterization of Resuspended-Sediment Oxygen Demand in Bubbly Creek, Chicago, Illinois." *Journal of Environmental Engineering - ASCE*, 137(8), 717-730.
110. Czuba, Jonathan A.; Best, James L.; Oberg, Kevin A.; Parsons, Daniel R.; Jackson, P. Ryan; Garcia, Marcelo H.; Ashmore, P. (2011) "Bed morphology, flow structure, and sediment transport at the outlet of Lake Huron and in the upper St. Clair River." *Journal of Great Lakes Research*, 37(3), 480-493. **Recognized with the IAGLR Chandler-Misener Award for most notable paper published in Journal of Great Lakes Research in 2011.**
111. Abad, J., Sequeiros, O. E., Spinewine, B., Cantelli, A., Pirmez, C., Garcia, M. H. and Parker, G. 2011. Secondary current of saline underflow in a highly meandering channel: experiments and theory. *Journal of Sedimentary Research*, 81, doi: 10.2110/jsr.2011.61
112. Mier, Jose M.; Garcia, Marcelo H. (2011) "Erosion of glacial till from the St. Clair River Great Lakes Basin." *Journal of Great Lakes Research*, 37(3), 399-410.
113. Sinha, S., X. Liu and M.H. Garcia, "Three-dimensional hydrodynamic modeling of the Chicago River, IL", *Environmental Fluid Mechanics Vol 1*, 2012, 471-494.
114. Altinakar, M., Ettema, R., Garcia, M.H., Melville, B.W., Nikora, V., and G. Parker (2012), Stephen Edward Coleman (1966–2012), *Acta Geophysica*, 12/2012; 60(6). DOI: 10.2478/s11600-012-0073-1

115. Liu, X., G. Parker, J. Czuba, K. Oberg, J.M. Mier, J.L. Best, D.R. Parsons, P. Ashmore, and M.H. Garcia (2011). Sediment Mobility and Bed Armoring in the St. Clair River: Insights from Hydrodynamic Modeling. *Earth Surface Processes and Landform*, 37(9):957-970
116. Landry, B.J., Hancock, M.J., Mei, C.C., and García, M.H. (2012) WaveAR: A software tool for calculating parameters for water waves with incident and reflected components, *Journal of Computers and Geosciences*. doi/10.1016/j.cageo.2012.04.001
117. Cataño -Lopera, Y.A., Landry, B.J., Abad, J.D., and García (2012), M.H. Experimental and Numerical Study of the Flow Structure around two partially Buried Objects on a Deformed Bed, *Journal of Hydraulic Engineering*, 139 (3): 269-283.
118. Sinha, S., X. Liu and M.H. Garcia, "A Three-dimensional water quality modeling of the Chicago Area Waterways System (CAWS)", *Environmental Modeling & Assessment*, 18:567-592
119. Motta, D., Abad, J.D., Langendoen, E., and M.H. Garcia (2012). A simplified 2D model for meander migration with physically-based bank evolution, *Geomorphology* 163–164, 10–25. doi:10.1016/j.geomorph.2011.06.036
120. Pedocchi, F. and M.H. Garcia (2012). "Acoustic measurement of suspended sediment concentration profiles in an oscillatory boundary layer," *Continental Shelf Research*, Volume 46, 1 September 2012, Pages 87–95.
121. Motta, D., Abad, J.D., Langendoen, E., and M.H. Garcia (2012). The effects of floodplain soil heterogeneity on meander planform shape, *Water Resources Research*, AGU, DOI:10.1029.
122. Rodriguez JF, Garcia CM, Garcia MH, 'Three-dimensional flow in centered pool-riffle sequences', *Water Resources Research*, 49 202-215 (2013) [C1]
123. Abad, J. D., Frias, C., Buscaglia, G., Garcia, M. (2013). "Modulation of the flow structure by progressive bedforms in the Kinoshita Meandering channel", *Earth Surface Processes and Landforms*, 38: 1612–1622.
124. Dai, H.S., Fernandez, R.L., Parker, P., Garcia, M.H. and W.S.Kim (2013), "Modelling deltaic progradation constrained by a moving sediment source," *Journal of Hydraulic Research* 04/2013; DOI:10.1080/00221686.2012.762554
125. Mujal-Colilles, A., Mier, J.M., Christensen, K., Bateman, A. and M.H. Garcia (2013). "PIV experiments in rough-wall, laminar-to-turbulent, oscillatory boundary-layer flows," *Experiments in Fluids*, November 2013, 55:1633, doi 10.1007/s00348-013-1633
126. Garcia, T., Jackson, P.R., Murphy, E., Valocchi, A. and M.H.Garcia (2013). "Development of a Fluvial Egg Drift Simulator to evaluate the transport and dispersion of Asian carp eggs in rivers," *Ecological Modeling*, Volume 263, 10, 211–222.
127. Tokyay, T., and M.H. Garcia (2014). "Effect of initial excess density and discharge on constant flux gravity currents propagating on a slope," *Environmental Fluid Mechanics*, Volume 14, Issue 2 , pp 409-429
128. Motta, D., E. J. Langendoen, J. D. Abad, and M. H. García (2014). "Modification of meander migration by bank failures," *J. Geophys. Res. Earth Surf.*, 119, 1026–1042, doi:10.1002/2013JF002952.

129. Nania, L., Leon, A. and M.H.Garcia (2014). "A Coupled Hydrologic-Hydraulic for Simulating Dual Drainage in Urban Areas: Application to a catchment in the Metropolitan Area of Chicago, IL," *Journal of Hydrologic Engineering*, ASCE,10.1061/(ASCE)HE.1943-5584.0001080 , 04014071.
130. Dutta, S., Tokyay, T.E.,Cataño-Lopera, Y., Serafino, S., and M.H. Garcia (2014). Case Study: Application of CFD Modeling to improve flow and grit transport in Terrence J. O'Brien Water Reclamation Plant, Chicago, Illinois," *Journal of Hydraulic Research*, IAHR, pages 759-774, DOI: 10.1080/00221686.2014.949883
131. Goodwell,A.E., Zhu,Z., Dutta,D., Greenberg, J.A., Kumar, P., Garcia, M.H.; Rhoads,B.L.; Holmes, R.R., Parker, G., Berretta,D.P., Jacobson, R.B.,(2014). "Assessment of floodplain vulnerability during extreme Mississippi River flood 2011," *Environmental Science and Technology*, 48: 2619 – 2625
132. Cataño-Lopera, Y., Tokyay, T., Martin, J., Schmidt, A., Lanyon, R., Fitzpatrick, K., Scalise, C., and García, M. (2014). "Modeling of a Transient Event in the Tunnel and Reservoir Plan System in Chicago, Illinois." *J. Hydraul. Eng.*, 140(9), 05014005.
133. Dutta, S., Cantero, M. I., and Garcia, M. H.: Effect of self-stratification on sediment diffusivity in channel flows and boundary layers: a study using direct numerical simulations, *Earth Surface Dynamics*, 2, 419-431, doi:10.5194/esurf-2-419-2014, 2014.
134. Perillo, M. M., Prokocki, E. W., Best, J. L., & García, M. H. (2014). Bed form genesis from bed defects under unidirectional, oscillatory, and combined flows. *Journal of Geophysical Research: Earth Surface*. 119(12). DOI: 10.1002/2014JF003167
135. Perillo, M. M., Yokokawa, M., Sekiguchi, T., Takagawa, T., & Garcia, M. H. (2014). A unified model for bedform development and equilibrium under unidirectional, oscillatory and combined-flows. *Sedimentology* 61(7). DOI: 10.1111/sed.12129
136. Perillo, M.M.,Best, J.L.,Garcia, M.H. (2014). "A New Phase Diagram for Combined-Flow Bedforms," *Journal of Sedimentary Research*, April 2014, v. 84, p. 301-313, published online April 29, doi:10.2110/jsr.2014.25
137. Garcia, T., Murphy, E.A., Jackson, P.R. and M. H. Garcia (2015). Application of the FluEgg model to predict transport of Asian carp eggs in the Saint Joseph River (Great Lakes tributary), *Journal of Great Lakes Research*, DOI:10.1016/j.jglr.2015.02.003
138. Duncan Keenan-Jones; Davide Motta; Marcelo H Garcia; Bruce W Fouke (2015). "Travertine-Based Estimates of the Amount of Water Supplied by Ancient Rome's Anio Novus Aqueduct," *Journal of Archaeological Science*, *Journal of Archaeological Science: Reports* 3, 1–10.
139. Morales, V., Mier, J.M., M.H. Garcia (2015). Innovative modeling framework for combined sewer overflows prediction, *Journal of Urban Water Research*, *Urban Water Journal*, DOI: 10.1080/1573062X.2015.1057183
140. Konsoer, K., Rhoads, K., Best, J. L., Langendoend, E., Ursic, M., Abad, J. D., Garcia, M. H., (2015). Spatial variability in bank resistance to erosion on a large meandering, mixed bedrock-alluvial river, *Geomorphology*, <http://dx.doi.org/10.1016/j.geomorph.2015.08.002>

141. Zhu, Z., Oberg, N., Morales, V., Quijano, J.C., Landry, B.J. and M.H. Garcia (2016). Integrated urban hydrologic and hydraulic modelling in Chicago, Illinois, *Environmental Modeling and Software*, Elsevier, 77(3): 63-70.
142. Quijano, J.C., Jackson, P.R., Santacruz, S., Morales, V.M., and M.H. Garcia (2015). Implications of Climate Change on the Heat Budget of Lentic Systems Used for Power Station Cooling: Case Study Clinton Lake, Illinois, USA, *Environmental Science and Technology*, Environ. Sci. Technol., Article ASAP DOI: 10.1021/acs.est.5b04094, Publication Date (Web): November 10, 2015
143. Waterman, D.M., Liu, X., Motta, D. and M.H. Garcia (2016). Analytical Lagrangian Model of Sediment Oxygen Demand and Reaeration Flux Co-Evolution in Streams, *Journal of Environmental Engineering*, ASCE, DOI: 10.1061/18 (ASCE) EE.1943-7870.0001095.
144. Garcia, T., Zuniga Zamalloa, C., Jackson, P.R., Murphy, E.A. and M. H. Garcia (2015) A Laboratory Investigation of the Suspension, Transport, and Settling of Silver Carp Eggs Using Synthetic Surrogates, *PLOS ONE* 10(12):e0145775 · December 2015· DOI: 10.1371/journal.pone.0145775.
145. Moller, N., Kim, H., Neary, V.S., Garcia, M.H., Chamorro, L.P. (2016). On the near-wall effects induced by an axial-flow rotor, *Renewable Energy*, *Renewable Energy* 91 (2016) 524-530.
146. Mujal-Colilles, A., Christensen, K., Bateman, A. and M.H. Garcia (2016) Coherent structures in oscillatory flows within the laminar-to-turbulent transition regime for smooth and rough walls, *Journal of Hydraulic Research*, IAHR, Vol. 54, N 5, p. 503-515 DOI: 10.1080/00221686.2016.1174960
147. Zhu, Z.; Motta, D., Jackson, P.R., and M.H. Garcia (2016). Numerical modeling of simultaneous tracer release and piscicide treatment for invasive species control in the Chicago Sanitary and Ship Canal, Chicago, Illinois, *Environmental Fluid Mechanics*, DOI 10.1007/s10652-016-9464-1
148. Cataño-Lopera, Y., Landry, B.J. and García, M.H. (2016). Unstable Flow Structure around Partially Buried Objects on a Simulated River Bed, *Journal of Hydroinformatics*, International Water Association, DOI: 10.2166/hydro.2016.060.
149. Duncan Keenan-Jones; Motta, D., Keenan-Jones, D., Garcia, M.H. and B.W.Fouke (2015), "Hydraulic Evaluation of the Design and Operation of Ancient Rome's Anio Novus Aqueduct" *Archaeometry* (in press).
150. Morales, V. M., J. C. Quijano, A. Schmidt, and M. H. Garcia (2016), Innovative framework to simulate the fate and transport of nonconservative constituents in urban combined sewer catchments, *Water Resour. Res.*, 52, DOI: 10.1002/2016WR018807
151. Konsoer, K. M., Rhoads, B. L., Best, J. L., Langendoen, E. J., Abad, J. D., Parsons, D. R. and Garcia, M. H. (2016), Three-dimensional flow structure and bed morphology in large elongate meander loops with different outer bank roughness characteristics. *Water Resources Research* doi:10.1002/2016WR019040.
152. Quijano, J.C., Zhu,Z. Morales, V., Landry, B., and M. H. Garcia (2017). Three-dimensional model to capture the fate and transport of combined sewer overflow discharges: A case study in the Chicago Area Waterway System, *Science of The Total Environment*, Volume 576, 15 January 2017, Pages 362–373.

153. Carling, P.A., Perillo, M., Best, J.L., and M.H. Garcia (2016). The bubble bursts for cavitation in natural rivers: laboratory experiments reveal minor role in bedrock erosion, *Earth, Surface and Land Processes, in press*

## DISCUSSIONS

Amsler, M.L. and M.H. García, Discussion “Sand-Dune Geometry of Large Rivers During Floods,” by P. Y. Julien and G. J. Klaasen, *ASCE Journal of Hydraulic Engineering*, 123:6, 582-584, 1997.

García, M.H., Discussion on “The legend of A.F. Shields,” by John M. Buffington, *Journal of Hydraulic Engineering*, ASCE, Vol. 126, 718-720, Sept. 2000.

Liu, X. and M.H. García. Discussion of “Divergence Form for Bed Slope Source Term in Shallow Water Equations” by A. Valiani and L. Begnudelli. *Journal of Hydraulic Engineering*. 134(5): 678-679, 2007.

Abad, J. D. and García, M. H. Discussion of “Efficient algorithm for Computing Einstein Integrals by Junke Guo and Pierre Y. Julien” (*Journal of Hydraulic Engineering*, Vol. 130, No. 12, pp. 1198-1201, 2004). *Journal of Hydraulic Engineering*, ASCE, 132 (3): 332-334, 2006.

## ARTICLES IN CONFERENCE PROCEEDINGS

1. García, M.H. and G. Onipchenko, “Study of the Erosion of Clays in a Flume,” *Proceedings of the X Latin American Congress of Hydraulics, IAHR, Mexico, 1982.*
2. García, M.H., W. Yu, and G. Parker, “Experimental Study of Turbidity Currents,” *Proceedings of the Advancements in Aerodynamics, Fluid Mechanics, and Hydraulics, ASCE, Minneapolis, Minnesota, 1986.*
3. García, M.H. and G. Parker, “On the Numerical Prediction of Turbidity Currents,” *Proceedings of the Third International Symposium on River Sedimentation, The University of Mississippi, University, Mississippi, 1556-1565, 1986.*
4. García, M.H. and G. Parker, “Entrainment of Bed Sediment by Density Underflows,” *Proceedings of the National Hydraulic Engineering Conference, ASCE, Colorado Springs, Colorado, 1988.*
5. García, M.H. and Y. Niño, “Lagrangian Description of Bedload Transport by Saltating Particles,” *Proceedings of the 6th IAHR International Symposium on Stochastic Hydraulics, Taipei, Taiwan, 259-266, 1992.*
6. García, M.H., “Boundary Conditions for Sediment-Laden Flows,” *Proceedings of the Hydraulic Engineering Sessions at Water Forum '92, ASCE, Baltimore, Maryland, 404-409, 1992.*
7. García, M.H., “College Education in Environmental Engineering,” *Proceedings of Seminario Internacional Sobre el Medio Ambiente, Universidad Nacional Autonoma del Estado de Mexico, Toluca, Mexico, 1993.*
8. Choi, S.U. and M.H. García, “Kinematic Wave Approximation for Debris Flow Routing,” *Proceedings of the XXV Congress IAHR, Tokyo, Japan, vol. B, 94-101, 1993.*
9. Niño, Y., M.H. García, and K. Ayala, “Video Analysis of Gravel Saltation,” *Proceedings of Hydraulic Engineering '93, San Francisco, California, vol. 1, 983-988, 1993.*



10. Niño, Y., F. López, and M.H. García, "High-Speed Video Analysis of Sediment-Turbulence Interaction," Proceedings of the Symposium on Fundamentals and Advancements in Hydraulic Measurements and Experimentation, ASCE, ed. C.A. Pugh, Buffalo, New York, August 1994.
11. López, F., Y. Niño, and M.H. García, "Simultaneous Flow Visualization and Hot-Film Measurements," Proceedings of the Symposium on Fundamentals and Advancements in Hydraulic Measurements and Experimentation, ASCE, ed. C.A. Pugh, Buffalo, New York, August 1994.
12. Choi, S.U. and M.H. García, "Finite Element Simulation of Turbidity Current With Internal Hydraulic Jump," Proceedings of the X International Conference on Computational Methods in Water Resources, Heidelberg, Germany, July 1994.
13. Bittner, L., Y. Niño, and M.H. García, "Mathematical Models to Assess Stream Dynamics," Proceedings of Hydraulic Engineering '94, ASCE, Buffalo, New York, August 1994.
14. García, M.H. and J. Parsons, "Mixing at Gravity Currents Fronts," Proceedings of the 4th International Symposium on Stratified Flows, Grenoble, France, July 1994.
15. López, F., Y. Niño, and M.H. García, "Coherent Turbulent Structures in Open Channel Flows," XVI Latin American Congress of Hydraulics, IAHR, Santiago, Chile, 1994 (in Spanish).
16. Niño, Y., F. López, and M.H. García, "Particle-Turbulence Interaction in Boundary Layer Flows," XVI Latin American Congress of Hydraulics, IAHR, Santiago, Chile, 1994 (in Spanish).
17. García, M.H., Y. Niño, and F. López, "Sediment-Turbulence Interaction in Boundary Layer Flows," Proceedings of the 10th Engineering Mechanics Conference, ASCE, ed. S. Sture, Boulder, Colorado, 679-682, 1995.
18. Parsons, J.D. and M.H. García, "Visualization of Mixing at Density Current Front with Laser-Induced Fluorescence," Proceedings of the 10th Engineering Mechanics Conference, ASCE, ed. S. Sture, Boulder, Colorado, 998-1001, 1995.
19. López F., C. Dunn, and M.H. García, "Turbulence Characteristics of Flow Over a Cobble Bed," Proceedings of Water Resources Engineering, ASCE, eds. W.H. Espey, Jr. and P.H. Combs, San Antonio, Texas, 66-70, 1995.
20. López, F., C. Dunn, and M.H. García, "Turbulent Open-Channel Flow Through Simulated Vegetation," Proceedings of Water Resources Engineering, ASCE, eds. W.H. Espey, Jr. and P.H. Combs, San Antonio, Texas, 99-103, 1995.
21. López, F. and M.H. García, "Simulation of Suspended Sediment Transport in Vegetated Open Channel Flows with a K-Epsilon Turbulence Model," Proceedings of Water Resources Engineering, ASCE, eds. W.H. Espey, Jr. and P.H. Combs, San Antonio, Texas, 104-108, 1995.
22. Choi, S.U. and M.H. García, "Finite Element Simulation of 2-Dimensional Turbidity Currents," Proceedings of Water Resources Engineering, ASCE, eds. W.H. Espey, Jr. and P.H. Combs, San Antonio, Texas, 613-617, 1995.
23. Niño, Y. and M.H. García, "Sediment Particle Motions in the Wall Region of a Turbulent Boundary Layer," Proceedings of Water Resources Engineering, ASCE, eds. W.H. Espey, Jr. and P.H. Combs, San Antonio, Texas, 1789-1793, 1995.

24. López, F. and M.H. García, "On the Relationship Between Net Momentum Fluxes and Wall-Normal Velocity Fluctuations," Proceedings of the 11th Conference in Engineering Mechanics, ASCE, eds. Y.K. Lin and T.C. Su, Fort Lauderdale, Florida, 661-664, 1996.
25. Dunn, C., F. López, and M.H. García, "Vegetation-Induced Drag: An Experimental Study," Proceedings of the ASCE Water Resources Engineering Conference, Anaheim, California, 1996.
26. López, F. and M.H. García, "Synchronized Measurements of Bed-Shear Stress and Flow Velocity," Proceedings of the ASCE Water Resources Engineering Conference, Anaheim, California, 1996.
27. López, F. and M.H. García, "Turbulent Coherent Structures in Cobble-Bed Open-Channel Flow with Small Relative Submergence," Proceedings of RIVERTECH96, 1st International Conference on New/Emerging Concepts for Rivers, Chicago, Illinois, September 22-26, 1996.
28. López, F. and M.H. García, "Suspended Sediment Transport Capacity in Vegetated Water Channels," Proceedings of RIVERTECH96, 1st International Conference on New/Emerging Concepts for Rivers, Chicago, Illinois, September 22-26, 1996.
29. López, F., and M. García, "Turbulence and Sediment Transport in Vegetated Open Channels: Simulation Using Two Equation Turbulence Models," Proceedings of RIVERTECH96, 1st International Conference on New/Emerging Concepts for Rivers, Chicago, Illinois, September 22-26, 1996.
30. Niño, Y., F. López, and M. García, "Numerical Modeling of Mixing Processes in Stratified Water Bodies," Proceedings of the XVII Latin American Congress of Hydraulics, IAHR, Guayaquil, Ecuador, 1996.
31. Parsons, J.D., and M.H. García, "Turbulence Characteristics of Saline Gravity Current Fronts," 11th ASCE Engineering Mechanics Conference, Ft. Lauderdale, Florida, 1996.
32. López, F. and M.H. García, "Probability Concepts in Sediment Transport Mechanics," 27th Congress of International Association for Hydraulic Research, eds. F.M. Holly and A. Alsaffar, San Francisco, California, 1197-1202, 1997.
33. Huang, X. and M.H. García, "Asymptotic Solution for Bingham Debris Flows," Proceedings of the 1st International Conference on Debris-Flow Hazard Mitigation, ed. Cheng-lung Chen, ASCE, San Francisco, California, 561-575, 1997.
34. López, F., and M. García, "Turbulence Structure in Open Channel Flow with Roughness of Different Spanwise Aspect Ratio," XII Engineering Mechanics Conference, ASCE, La Jolla, California, May 1998.
35. Admiraal, D.M., and M.H. García, "Vertical Distribution of Sediment Concentration in an Unsteady Flow," XII Engineering Mechanics Conference, ASCE, La Jolla, California, May 1998.
36. Parsons, J.D., and M.H. García, "Stability of Warm, Fresh, Sediment-Laden Surface Gravity Current," XII Engineering Mechanics Conference, ASCE, La Jolla, California, May 1998.
37. García, M.H., and F. López, "Sedimentation in Vegetated Rivers," Proceedings of the Wetlands Engineering and River Restoration Conference, ASCE, Denver, Colorado, 1998.

38. Admiraal, D.M., J.F. Rodriguez, and M.H. García, "Sediment Resuspension Due to Navigation," Proceedings of the 7th International Symposium on River Sedimentation, Hong Kong, 1998.
39. Fedele, J.J., and M.H. García, "Flow Resistance in Alluvial Streams with Dunes," Proceedings of the XVIII Latin American Congress of Hydraulics, Oaxaca, Mexico, 1998(in Spanish).
40. Rodriguez, J.F., and M.H. García, "Entrainment of Sediment into Suspension by Unsteady Turbulent Flows," Proceedings of the XVIII Latin American Congress of Hydraulics, Oaxaca, Mexico, 1998 (in Spanish).
41. Echavarria, B., and M.H. García, "Sediment Depositional Pattern in a Dam," Proceedings of the XVIII Latin American Congress of Hydraulics, Oaxaca, Mexico, 1998 (in Spanish).
42. Huang, X., and M.H. García, "Long-Wave Stability and Mud Flows," Proceedings of the XIII Engineering Mechanics Conference, Baltimore, Maryland, 1999.
43. Huang, X., and M.H. García, "A Rational Rheological Model for Mud Flows," Proceedings of the XIII Engineering Mechanics Conference, Baltimore, Maryland, 1999.
44. García, M., J. Rodriguez, and D. Admiraal, "Effects of Navigation on Sedimentation," 28th Congress of the International Association for Hydraulic Research, Graz, Austria, 1999.
45. Admiraal, D.M. and M.H. García, "Entrainment Rate Predictions for a Sand Bed Subjected to Steady and Unsteady Flows," IAHR Symposium on River, Coastal, and Estuarine Morphodynamics, Genoa, Italy, 1999.
46. Bombardelli, F. and M.H. García, "Numerical Simulation of Wind-Induced Resuspension of Bed Sediment in Shallow Lakes," International Water Resource Engineering Conference, ASCE, Seattle, WA, 1999 (in CD).
47. Fedele, J.J. and M.H. García, "Flow Resistance in /alluvial Stream with Dunes," International Water Resource Engineering Conference, ASCE, Seattle, WA, 1999.
48. Bombardelli, F. and M.H. García, "Numerical Exploration of Conceptual Models for Hydraulic Jumps," FLOW-3D World Conference, Santa Fe, New Mexico, 1999 (in CD).
49. Caisley, M., F. Bombardelli and M.H. García, "Physical and Numerical Studies of Canoe Chutes for Low-Head Dams," FLOW-3D World Conference, Santa Fe, New Mexico, 1999.
50. Rodríguez, J. F., Bombardelli, F. A., García, M. H., Guzmán, J. M., Frothingham, K. and Rhoads, B. L., "Numerical modeling of meandering streams." Proc. 4th. Int. Conference on Hydroinformatics, International Association for Hydraulic Resesarch, Iowa City, IA, USA (published in a CD) 2000.
51. Bombardelli, F. A., García, M. H. and Caisley, M. E., "2-D and 3-D numerical simulation of abrupt transitions in open-channel flows. Application to the design of canoe chutes." Proc. 4th. Int. Conference on Hydroinformatics, International Association for Hydraulic Research, Iowa City, IA, USA (published in a CD) 2000.
52. Caisley, M. E., García, M. H., Bombardelli, F. A., "Prediction of the behavior of hydraulic jumps in canoe chutes." Proc. Joint Conference on Water Resources Engineering and Water Resources Planning and Management, ASCE, Minneapolis, MN, USA (published in a CD) 2000.

53. Rodríguez, J. F., García, M. H., Bombardelli, F. A., Guzmán, J. M., “Naturalization of urban streams using in-channel structures.” Proc. Joint Conference on Water Resources Engineering and Water Resources Planning and Management, ASCE, Minneapolis, MN, USA (published in a CD) 2000.
54. Bombardelli, F. A., García, M. H., Caisley, M. E., “Numerical simulation in two and three dimensions of abrupt transitions in open channels.” Proc. XIX Latin-American Congress on Hydraulics, Vol. 3, 795-804, Córdoba, Argentina (in Spanish) 2000.
55. Rodríguez, J. F., Bombardelli, F. A., García, M. H., Guzmán, J. M., Frothingham, K. and Rhoads, B. L., “A numerical model for meandering rivers.” Proc. XIX Latin-American Congress on Hydraulics, Vol. 3, 805-814, Córdoba, Argentina (in Spanish) 2000.
56. Rodríguez, J. F. and García, M. H., “Bank erosion in meandering rivers.” Proc. Joint Conference on Water Resources Engineering and Water Resources Planning and Management, ASCE, Minneapolis, MN 2000.
57. Rodríguez, J. F., Admiraal, D.M., García, M.H. and López, F., “Statistical analysis of unsteady bed shear stresses: implications for sediment resuspension.” Proc. EM2000, 14th Engineering Mechanics Conference, ASCE, Austin, TX. 2000.
58. Rodríguez, J. F., Bombardelli, F. A., García, M. H., and Guzmán J. M., “Application of computational river mechanics to stream naturalization.” Environmental Horizons 2000, The Environmental Council, University of Illinois at Urbana-Champaign, Urbana, IL 2000.
59. Rodríguez, J. F. and García, M. H., “Depth-averaged modeling of meandering rivers.” Proc. Fall Meeting, AGU, San Francisco, CA 2000.
60. Buscaglia, G.C., F.A. Bombardelli, C.R. Rehmann and M.H. Garcia, “Model-assisted Scaling for Aeration Bubble Plumes,” 3rd International Symposium on Environmental Hydraulics, Tempe, AZ, 2001.
61. Rodríguez, J. F., Belby, B., Bombardelli, F. A., García, C. M., Rhoads, B. L. and García, M.H., “Numerical and physical modeling of pool-riffle sequences for low- gradient urban streams.” International Symposium on Environmental Hydraulics, IAHR, Tempe, Dec. 5-8, 2001.
62. Wade, R.J., Rhoads, B.L., Rodríguez, J. F., Newell, M., Wilson, D., Herricks, E., Bombardelli, F.A. and García, M.H., “Integrating science and technology to support stream naturalization near Chicago, Illinois.” Proc. Watershed Management Symposium, Chevy Chase, Maryland 2001.
63. Rehmann, C.R., F.A. Bombardelli, G.C. Buscaglia, C. Soga and M.H. Garcia, “Modeling and Experiments on Aeration Bubble Plumes,” 54th Annual Meeting of the American Physical Society Division of Fluid Dynamics, San Diego, CA, 2001.
64. Rodríguez, J. F., Belby, B., Bombardelli, F. A., García, C. M., Rhoads, B. L. and García, M.H., “Numerical and physical modeling of pool-riffle sequences for low- gradient urban streams.” International Symposium on Environmental Hydraulics, IAHR, Tempe, AZ, 2001.
65. Rodríguez, J. F., Bombardelli, F. A., García, M. H., Guzmán J. M., Frothingham K., Rhoads, B. L. and Belby, B., “Development of scientific tools for stream naturalization.” Geophys. Res. Abs., 3, 2325, 2001.

66. Rodríguez, J. F., García, M. H., Rhoads, B. L. and Belby, B., "Depth-averaged modeling of rivers." Environmental Horizons 2001, The Environmental Council, University of Illinois at Urbana-Champaign, Urbana, IL, 2001.
67. Buscaglia, G. C., Bombardelli, F. A., Rehmann, C. R., and García, M. H., "Model-assisted scaling procedures for aeration bubble plumes." 3rd. Int. Symposium on Environmental Hydraulics, Tempe, Arizona, USA, 2001.
68. Rodríguez, J. F., Belby, B., Bombardelli, F. A., García, C. M., Rhoads, B. L., and Garcia, M. H., "Numerical and physical modeling of pool-riffle sequences for low gradient urban streams" 3rd. Int. Symposium on Environmental Hydraulics, Tempe, Arizona, USA, 2001.
69. Bombardelli, F. A., and García, M. H., "Simulation of density currents in urban environments. Application to the Chicago River, Illinois." 3rd. Int. Symposium on Environmental Hydraulics, Tempe, Arizona, USA, 2001.
70. Cantero, M. and García, M., Sediment Management in Water Reservoirs by Jet-Induced Density Currents. International Symposium on Environmental Hydraulics, Tempe, Arizona, USA, 2001.
71. Rodríguez, J. F., García, C. M. and García. "Mean flow and turbulence characteristics in pool-riffle structures." Accepted at Hydraulic Measurements & Experimental Methods, EWRI-IAHR, Estes Park, CO, July, 2002.
72. Schwartz, J.S., Herricks, E.E., García, M.H., Rhoads, B.L., Rodriguez, J.F., and Bombardelli, F.A. "Physical habitat analysis and design of in-channel structures on a Chicago, IL urban drainage: a stream naturalization design process." 9th International Conference on Urban Drainage ASCE, IAHR and IWA, Portland, OR, September 2002.
73. Rodríguez, J.F. and García, M., "Effective discharge and its relevance to stream restoration (case study Kankakee River)." USGS Stream Restoration Workshop, February 20-22, Urbana, IL, 2002.
74. Bombardelli, F. A., García, C. M., Cantero, M. I., Rincón, L., Waratuke, A., Rehmann, C. R., and García, M. H., "Issues regarding the measurement of turbulent properties in bubble plumes." World Water and Environmental Resources Congress, ASCE, Philadelphia, 2002.
75. Bombardelli, F. A., Rodríguez, J. F., and García, M. H., "Computational River Mechanics: 3D simulations at the reach scale." Proc. World FLOW-3D® User's Conf., Santa Fe, New Mexico, USA. , 2002.
76. Bombardelli, F. A., Cantero, M. I., Buscaglia, G. C., and García, M. H., "Comparative analysis of convergence of FLOW-3D® for simulation of dense underflows." Proc. World FLOW-3D® User's Conf., Santa Fe, New Mexico, USA., 2002.
77. García, C. M., Bombardelli, F. A., Buscaglia, G. C., Cantero, M. I., Rincón, L., Soga, C., Waratuke, A., Rehmann, C. R., and García, M. H., "Turbulence in bubble plumes." Hydraulic Measurement and Experimental Methods Conference, ASCE, Estes Park, Colorado, USA, 2002.
78. Bombardelli, F. A., Guala, M., García, C. M., Briskin, B., and García, M. H., "Mean flow, turbulence, and free-surface location in a canoe chute model" Hydraulic Measurement and Experimental Methods Conference, ASCE, Estes Park, Colorado, USA, 2002.
79. Buscaglia, G.C., E.A.Dari, F.A. Bombardelli and M.H. García, "Numerical Modeling of Flow and Mass Transfer in Bubble Plumes" Computational Mechanics, Vol. XXI, pp. 541-565; Proc.

MECOM 2002, First South American Congress on Computational Mechanics, Paraná, Argentina, 2002.

80. Bombardelli, F.A., M.I. Cantero, G.C. Buscaglia and M.H. García “Comparative Analysis of Convergence of FLOW-3D® for Simulation of Dense Underflows” Proc. World FLOW-3D® User’s Conf., Santa Fe, NM (in CD), 2002.
81. Bombardelli, F.A., J.F. Rodríguez and M.H. García “Computational River Mechanics: 3D Simulations at the Reach Scale” Proc. World FLOW-3D® User’s Conf., Santa Fe, NM (in CD), 2002.
82. Briskin, B.; Cantero, M. and García, M. H., In-Situ Measurements of Sediment Oxygen Demand by Suspended Biosolids. Hydraulic Measurements and Experimentation Conference, Estes Park, Colorado, USA, 2002.
83. Bombardelli, F.A., C.M. García, M.I. Cantero, L. Rincón, A. Waratuke, C.R. Rehmann and M.H. García “Issues Regarding the Measurement of Turbulent Properties in Bubble Plumes” Proc. World Water and Environmental Resources Congress, P. Bizier and P. DeBarry (Eds.), Environmental & Water Resources Institute (EWRI), ASCE, Philadelphia, PA, 2003.
84. Bombardelli, F.A., G.C. Buscaglia and M.H. García “Parallel Computations of the Dynamic Behavior of Bubble Plumes” 11th Annual Student Paper Competition of the American Society of Mechanical Engineers (ASME) Pressure Vessel and Piping Division Conf., Cleveland, OH, 2003.
85. García, M.H., F.A. Bombardelli, M. Guala and M. Caisley “Hydraulics and Turbulence of Flow in Canoe Chutes” XXX IAHR Congress, Water Engineering and Research in a Learning Society, Thessaloniki, Greece, 2003.
86. Cantero, M.I., M.H. García, G.C. Buscaglia, F.A. Bombardelli and E.A. Dari “Multidimensional CFD Simulation of a Discontinuous Density Current” XXX IAHR Congress, Water Engineering and Research in a Learning Society, Thessaloniki, Greece, 2003.
87. Abad, J. D., Cantero, M. I., Niño, Y. I., Bombardelli, F. A., García, M. H. Resuspensión de sólidos mediante el uso de múltiples chorros de agua. XIV Congreso Nacional de Ingeniería Civil, Iquitos, PERU, 2003.
88. Abad, J. D., García, M. H. Modelo Conceptual y Matemático para la Evolución de Ríos Sinuosos. XIV Congreso Nacional de Ingeniería Civil, Iquitos, PERU, 2003.
89. Abad, J. D. and García, M. H., Conceptual and Mathematical Model for Evolution of Meandering Rivers in Naturalization Processes. World Water & Environmental Resources Congress, Salt Lake City, Utah, USA, 2004.
90. Abad, J. D., Musalem, R. A., García, C. M., Cantero, M. I. and García, M., H. Exploratory study of the influence of the wake produced by acoustic doppler velocimeter probes on the water velocities within control volume. World Water & Environmental Resources Congress, Salt Lake City, Utah, USA, 2004.
91. Cantero, M.; Mangini, S.; Pedocchi, F.; Niño, Y. and García, M. 2004. Analysis of flow characteristics in an annular flume: Implications for erosion and deposition of cohesive sediments. World Water and Environmental Resources Congress 2004, Salt Lake City, Utah, USA.

92. Vionnet, C.A. and Garcia, M.H. (2003). "Catastrophic Flooding in Santa Fe, Argentina, IARH Newsletter, 20," Supplement to J. Hydraulic Research, 41(4).
93. García, C.; Cantero, M.; Niño, Y. and García, M. 2004. Acoustic Doppler Velocimeter's performance sampling the flow turbulence. World Water and Environmental Resources Congress, Salt Lake City, Utah, USA, 2004.
94. García, C.; Cantero, M.; Rehmann, C. and García, M., New methodology to subtract noise effects from turbulence parameters computed from ADV velocity signals. World Water and Environmental Resources Congress 2004, Salt Lake City, Utah, USA, 2004.
95. Abad, J.; Musalem, R.; Cantero, M.; García, C. and García, M. Exploratory study of the influence of the wake produced by acoustic Doppler velocimeter probes on the water velocities within control volume. World Water and Environmental Resources Congress, Salt Lake City, Utah, USA , 2004.
96. Abad, J.D. and García, M. H. Modeling of Submerged Vanes for Bank Erosion Control. Illinois Water conference, USA. 2004.
97. Abad, J.D., Guneralp, I., Bombardelli, F., García, M. H. and Rhoads, B.. Bank erosion control: CFD modeling of Submerged Vanes. FLOW-3D World User Conference, Chicago, USA. 2004.
98. Abad, J.D., Cantero, M.I., Niño, Y.I., Bombardelli, F.A. and García, M.H. Resuspensión de sólidos mediante el uso de múltiples chorros de agua. XIV Congreso Nacional de Ingeniería Civil, Iquitos, PERU, 2003. (In Spanish)
99. Abad, J.D. and García, M.H. Modelo Conceptual y Matemático para la Evolución de Ríos Sinuosos. XIV Congreso Nacional de Ingeniería Civil, Iquitos, PERU, 2003. (In Spanish)
100. Rodríguez, J.F., García, M.H., Lopez, F.M. and García C.M. "Effects of bed topography and vegetation on 3D flow patterns in low-gradient rivers. ICHE 2004, Sixth International Conference on Hydro-Science and Engineering, Brisbane, Australia.
101. Rodríguez, J.F., García, M.H., Lopez, F.M. and García C.M.. "Three dimensional hydrodynamics of pool-riffle sequences for urban stream restoration." River Flow 2004, Second International Conference on Fluvial Hydraulics, IAHR, Naples, Italy.
102. Abad, J. D. (2005) "CFD simulations of asymmetric Kinoshita-generated meandering bends". Proc., XXXI International Association of Hydraulic Engineering and Research (IAHR) Congress (CD-Rom), September 11-16, Seoul, Korea.
103. Abad, J. D. and Garcia, M. H. (2005). "Hydrodynamics of Kinoshita-generated meandering bends". 4th IAHR Symposium on River, Coastal and Estuarine Morphodynamics, University of Illinois, Urbana, IL, USA, October 4-7.
104. Liu, X. and M.H. García (2006). Numerical Simulation of sea bed response under waves with coupled solver of Biot consolidation equations and free surface water flow. Proceedings of ISOPE PACOMS, Dalian, China.
105. Liu and M.H. García (2006), Numerical Simulation of Local Scour with Free Surface and Automatic Mesh Deformation, Proceeding of World Environmental & Water Resource Congress, ASCE, Omaha, NE.

106. Abad, J. D., Spalletti, P. D., García, M. H., Brea, J. D. (2006). “Efecto de la construcción del puente Lavalle en la evolución de meandros en el río Bermejo”. XXII Congreso Latinoamericano de Hidráulica, Venezuela, October 9-11. (In Spanish)
107. Abad, J. D., Ancalle, J., Buscaglia, G. and Garcia, M. H. (2007). “Hydrodynamics of high-amplitude Kinoshita meandering channels”. National Surface-Water Conference and Hydroacoustics Workshop, April 2-6, St. Louis, MO, USA.
108. Abad, J. D., Ancalle, J., Buscaglia, G. and Garcia, M. H. (2007). “Effect of bend orientation on the Hydrodynamics of Kinoshita-generated meandering channels. Experimental and Numerical approaches”. XXXII International Association of Hydraulic Engineering and Research (IAHR) Congress. July 1-6. Venice, Italy.
109. Abad, J. D., Ancalle, J. Garcia, M. H. (2007). “Mean and Turbulence Flow Structure in a High-amplitude Kinoshita-generated Meandering Channel”. Hydraulics Measurement & Experimental Methods. Lake Placid, NY. September 10-12.
110. Liu, X. and M.H. García, Optimal Design of the Chicago Calumet Water Reclamation Plant (CCWRP) Primary Settling Tanks with 3D Numerical Models, In proceedings of World Environmental & Water Resource Congress, Honolulu, Hawaii, 2008
111. Liu, X. and M.H. García, Numerical Simulations of Density Current in Chicago River Using Environmental Fluid Dynamics Code (EFDC), In proceedings of World Environmental & Water Resource Congress, Honolulu, Hawaii, 2008
112. Abad, J. D., Garcia, M. H. (2007). “Bed morphology experiments in an asymmetric Kinoshita-generated meandering channel”. 5th IAHR Symposium on River, Coastal and Estuarine Morphodynamics, University of Twente, Enschede, the Netherlands, September 17-21.
113. Cataño-Lopera, Y., Abad, J. D. and Garcia, M. H. (2008). “Análisis estadístico de formas de fondo generadas por olas y corrientes: 2 casos estudiados”. Congreso Latinoamericano de Hidráulica, Colombia. September 2-6 (In Spanish).
114. Brunner, C., E. Brosius, E. Podczewinski, M.H. García and X. Liu, Optimizing the Design of Primary Settling Tanks Using CFD Modeling, In proceeding of IWEA 29th Annual Conference and Exhibition, Peoria, IL, 2008
115. Brunner, C., E. Brosius, E. Podczewinski, M.H. García and X. Liu, Computational Fluid Dynamics (CFD) Modeling and Optimal Design of Primary Settling Tanks at Calumet, Chicago, In proceedings of Water Environment Federation’s Annual Technical Exhibition and Conference, Chicago, IL, 2008
116. Abad, J. D., Waratuke, A., Barnas, C. and Garcia, M. H. (2009). “Hydraulic Model Study of Canoe Chute and Fish Passage for the Chicago River North Branch Dam”. World Environmental & Water Resources Congress, ASCE. Kansas City, MO. May 17-21.
117. Liu, X. S. Sinha, D. Motta, and M.H. García. Upstream Intrusion Effect of CSO Event in Bubbly Creek, IL. In Proceedings of ASCE EWRI World Environmental & Water Resource Congress, Kansas City, Missouri, USA, 2009
118. León, A.S., X. Liu, M.S. Ghidaoui, A.R. Schmidt and M.H. García, Boundary Conditions for Simulating Complex Storm-sewer Systems in Free Surface, Pressurized, and Mixed Flow Conditions. In Proceedings of ASCE EWRI World Environmental & Water Resource Congress, Kansas City, Missouri, USA, 2009



119. Qi, M., X. Liu, M.H. García, and P. Jiang. Channel Degradation in the Yangtze River due to Decreased Sediment Supply. In Proceedings of 33rd IAHR Congress, Vancouver, Canada, 2009
120. Liu, X., S. Sinha, N.A. Sobh and M.H. García (2009). ~Three-Dimensional Water Quality Modeling of the Chicago River, IL. In Proceedings of 2009 UCOWR/NIWR Annual Conference, Chicago, USA
121. Abad, J.D., Cataño-Lopera, Y.A., Viparelli, E., and García, M.H., (2009). "Flow Structure and Hydraulic Capacity of Dropshafts: Application to Tunnel and Reservoir Plan Project, Chicago, Illinois." Proceedings of the 33rd IAHR Water Engineering for a Sustainable Environment, August 9-14, Vancouver, Canada
122. Abad, J. D., Sequeiros, O. E., Spinewine, B., Garcia, M. H. and Parker, G. (2009). "Secondary flow in meandering channels on submarine fans: implications for channel morphodynamics and architecture". Annual Convention & Exhibition, American Association of Petroleum Geologists, June, 7-10, Denver, CO, USA.
123. Cataño-Lopera, Y., Abad, J. D. and Garcia, M. H. (2009). "Flow structure and hydraulic capacity for dropshafts: Application to Tunnel and Reservoir Plan (TARP) project, Chicago, Illinois". XXXIII International Association of Hydraulic Engineering and Research (IAHR) Congress. August 9-14. Vancouver, Canada.
124. Cataño-Lopera, Y., Abad, J. D. and Garcia, M. H. (2009). "Flow structure and hydraulic capacity for dropshafts: Application to Tunnel and Reservoir Plan (TARP) project, Chicago, Illinois". Urban Water Management: issues ad opportunities. UCOWR/NIWR Annual Conference, July 7-9, Chicago, IL, USA.
125. Cataño-Lopera, Y., Abad, J. D. and Garcia, M. H. (2009). "Análisis estadístico de formas de fondo". Simposio sobre métodos experimentales en hidráulica, June, 3-5. Córdoba, Argentina. (in Spanish)
126. Cataño-Lopera, Y.A., Abad, J.D., and García, M.H., (2009). "Numerical Simulation of the Flow Structure around a partially Buried Object on a Deformable Bed." 2009 Flow-3D World Users Conference, September 17-18, Seattle, WA,USA, Oral Presentation.
127. Motta, D., Abad, J. D., Liu, X., and García, M. H. (2009). "Two-dimensional BOD and DO water quality model for engineering applications: the case of Bubbly creek in Chicago, Illinois". World Environmental & Water Resources Congress, ASCE, Kansas City, MO, USA, May 17-21.
128. Motta, D., Abad, J. D., and García, M. H. (2009). "A modeling approach for organic sediment resuspension and oxygen demand". XXXIII International Association of Hydraulic Engineering and Research (IAHR) Congress. August 9-14. Vancouver, Canada.
129. Motta, D., Abad, J.D., Langendoen, E.J., Garcia, M.H., (2009). "Merging of RVR Meander with CONCEPTS: simplified 2D model for long-term meander evolution". RCEM Conference, Santa Fe, Argentina September 21-25.
130. Motta, D., Abad, J.D., Garcia, M.H., (2009). "Short and long term two-dimensional water quality modeling for Bubbly Creek, Chicago, Illinois". UCOWR Conference, Chicago, IL, USA, July 7-9.

131. Garcia, M. H., Motta, D., Abad, J. D., Langendoen, E. J. (2010). "A computational platform for physically-based bank evolution and long-term meander migration". I Congreso Internacional de Hidrologia de Llanuras, Azul, Buenos Aires, Argentina, September 21-24.
132. Nanía, L.S., Abad, J.D., Cataño-Lopera, Y.A., Bladé, E., and García, M.H., (2010). "Estudio experimental y numérico 2d y 3D del flujo supercrítico en cruce de calles." Proceedings of the XXIV Latin-American Congress in Hydraulics, Punta del Este, Uruguay, November 21-25.
133. Liu, X., G. Parker, and M.H. García. Numerical Modeling of the St. Clair River and Sediment Mobility Analysis. In Proceedings of ASCE EWRI World Environmental & Water Resource Congress, Providence, Rhode Island, USA, 2010
134. Dutta, S. Y. Catano, X. Liu, and M. H. García. Computational Fluid Dynamics (CFD) Modeling of Flow into the Aerated Grit Chamber of the MWRD's North Side Water Reclamation Plant, Illinois. In Proceedings of ASCE EWRI World Environmental & Water Resource Congress, Providence, Rhode Island, USA, 2010.
135. Sinha, S., X. Liu and M. H. García (2010). Three dimensional hydrodynamic and water quality modeling of a CSO (combined sewer overflow) event in Bubbly Creek, Chicago, IL. In the proceedings of Riverflow 2010, Braunschweig, Germany.
136. Ashmore, P., J. Best, J. Czuba, J. Denny, D. Foster, K. Oberg, M. H. Garcia, X. Liu, G. Parker, D. Parsons. Morphology, sedimentology and dynamics of the upper St. Clair River. In Proceedings of the 53rd International Conference on Great Lakes Research, Toronto, Canada, 2010
137. Motta, D., Abad, J.D., Garcia, M.H., (2010). "A modeling approach for organic sediment resuspension and oxygen demand in Bubbly Creek, Chicago, Illinois". ISEH VI Conference, Athens, Greece. <http://www.semide.net/thematicdirs/events/2010/06/iseh-vi-6th-international-symposium-environmental>
138. Langendoen, E.J., Motta, D., Abad, J.D., Garcia, M.H., (2010). "An improved meander migration formulation based on streambank erosion processes". River Flow Conference, Braunschweig, Germany. September 8-10.
139. Motta, D., Abad, J. D., Langendoen, E. J., Garcia, M. H. (2011). "Floodplain heterogeneity and meander migration". In proceedings of River and Coastal Estuarine Morphodynamics, RCEM 2011, Beijing, China, September 6-8.
140. Liu, X., S. Sinha, D. Motta, M.H. Garcia, Density current caused by CSO events in Bubbly Creek, Chicago, Illinois, The Third International Symposium on Shallow Flows, Iowa City, Iowa, USA, 2012
141. Abad, J. D., Motta, D., Langendoen, E. J., Fernandez, R., Oberg, N., Garcia, M. H. (2012). "Restoration of meandering channels: The need for the development of physically-based mathematical GIS platforms – RVR Meander", ASCE-EWRI, Albuquerque, NM, USA, May 20-24.
142. Sinha, S. and M. H. Garcia. "Three-Dimensional numerical modeling of density currents in the Chicago River, Chicago, IL" TELEMAC-MASCARET User Conference, St Hugh's College, Oxford, UK, 18-19 October 2012 St Hugh's College, Oxford, UK
143. Sinha, S. and M.H. Garcia. "A comparative study between 2D and 3D model based on Shallow Water Equations, Development and Applications" HIC-2012 10th International

Conference on Hydroinformatics. Understanding Changing Climate and Environment Finding Solutions, Hamburg, Germany, July 2012.

144. , Landry, B.J., Calantoni, J., Palmer, J.E., and M.H. Garcia (2012),  $\Delta F2luID^{TM}$ : A new, robust, cutting-edge technology to resolve fluid interfaces, Hydraulic Measurements and Experimental Methods Conference HMEM 2012, August 12 -15, 2012 Snowbird Utah
145. Bryk, A., Best, J., Abad, J. D., Garcia, M. H. (2012). "The influence of channel-skewed bedforms on secondary flows in high curvature meander bends". Third International Symposium on Shallow Flows, University of Iowa City, IA, USA, June 4-6.
146. Garcia, M.H., Martin, J.E., Landry, B.J., Waratuke, A.R., and N. Oberg (2013). "On the Effectiveness of Levees for Flood Control: An Application of the Hydraulic Performance Graph Method," Proceedings of IAHR World Congress, Chengdu, China.
147. Garcia, T., Murphy, E.A., Jackson, P.R., Chapman, D. and M.H. Garcia (2015). Using the Fluvial Egg Drift Simulator (FluEgg) in an Integrated Pest Management Approach to Asian Carp Control, American Fisheries Society 144th Annual Meeting, Indianapolis
148. Garcia, T., Murphy, E.A., Jackson, P.R., and M.H. Garcia (2015) Laboratory Experiments Using Synthetic Silver Carp Eggs to Evaluate Critical Hydrodynamic Conditions for Egg Suspension, American Fisheries Society 144th Annual Meeting, Indianapolis
149. Abad, J. D., Frias, C., Langendoen, E., Best, J., Rhoads, B., Konsoer, K., Garcia, M. H. (2014). "Modulation of the flow structure by progressive bed forms in the Meandering Wabash River". River Flow 2014, IAHR (International Association for Hydro-Environmental Research), Lausanne, Switzerland, September 3-5, 2014.
150. Santacruz, S., Morales, V., Oberg, N., García, M.H. (2015), Integrated Urban Drainage Model for the City of Chicago, 10th Urban Drainage Modeling Conference, Toronto, Canada
151. Dutta, S., Wang, D., Tassi, P. and M.H. Garcia (2015), Modeling the Bulle Phenomenon at Channel Diversions with Telemac, River, Coastal and Estuarine Morphodynamics International Symposium, Iquitos, Peru
152. Wu, H., Zamalloa, C. C. Z., Blanco, J. E. S. J., Landry, B. J., Garcia, M. H. (2015). "Two-dimensional PIV measurements for studying the effect of bed permeability on incipient motion of synthetic sediment particles". American Physical Society : 68th Annual Meeting of the APS Division of Fluid Dynamics. November 2015. Boston, MA
153. Wang, D., S. Dutta, P.R. Jackson and M.H. Garcia. (2016) Three-dimensional numerical modeling of mixing at the junction of the Calumet-Sag Channel and the Chicago Sanitary and Ship Canal: A comparison between density-driven and advection-driven mixing, Proceedings of River Flow 2016, St. Louis Missouri
154. Dutta, S., P. Fischer and M. H. Garcia. (2016) Large Eddy Simulation (LES) of flow and bedload transport at an idealized 90-degree diversion: insight into Bulle-Effect, Proceedings of River Flow 2016, St. Louis, Missouri.
155. Fernandez, R., Garcia, M.H., and Parker, G. (2016). Mississippi River harbor Siltation Study, R., Proceedings of River Flow 2016, St. Louis, Missouri.

## TECHNICAL REPORTS & HYDRAULIC ENGINEERING SERIES CEE-UIUC

1. Santarelli, G. and M.H. García, "Analysis of the Navigability Conditions in the Parana River and its Tributaries, Associated with the construction of Parana Medio Dam," A.y.E.E., Santa Fe, Argentina, 1979 (in Spanish).
2. García, M.H. and G. Onipchenko, "Experimental Determination of the Critical Velocity for the Erosion of Clays, Downstream of Parana Medio Dam," Hydraulics Laboratory, Universidad Nacional del Litoral, Santa Fe, Argentina, 1981 (in Spanish).
3. García, M.H., N. Pouey, and G. Onipchenko, "Hydraulic Model Study of the Parana River Closure," Hydraulics Laboratory, Universidad Nacional del Litoral," Santa Fe, Argentina, 1981 (in Spanish).
4. García, M.H., and N. Pouey, "Hydraulic Model Study of the Zapata Creek Closure," Hydraulics Laboratory, Universidad Nacional del Litoral, Santa Fe, Argentina, 1982 (in Spanish).
5. Pouey, N., G. Tomat, M.H. García, and J. Zanazzi, "Physical Model of Fish Elevator," Hydraulics Laboratory, Universidad Nacional del Litoral, Santa Fe, Argentina, 1982 (in Spanish).
6. García, M.H. and Quinodoz, H., "Mathematical Model of Parana Medio's Navigation Lock Filling System," Report LHA-046-02-84, National Applied Hydraulics Laboratory, INCyTH, Ezeiza, Argentina, 1984 (in Spanish).
7. Parker, G., H. Johannesson, M.H. García, and K. Okabe, "Diagnostic Study of the Siltation Problem at the Wilmarth Power Plant Cooling Water Intake on the Minnesota River," Project Report No. 277 St. Anthony Falls Hydraulic Laboratory, University of Minnesota, 1988.
8. Parker, G., M.H. García, H. Johannesson, and K. Okabe, "Model Study of the Minnesota River Near Wilmarth Power Plant, Minnesota," Project Report No. 284, St. Anthony Falls Hydraulic Laboratory, University of Minnesota, 1989.
9. García, M.H., "Depositing and Eroding Sediment-Driven Flows: Turbidity Currents," Project Report No. 306, St. Anthony Falls Hydraulic Laboratory, University of Minnesota, 1990 (Ph.D. thesis).
10. Niño, Y. and M.H. García, "Sediment Bars in Straight and Meandering Channels: Experimental Study on the Resonance Phenomenon," Civil Engineering Studies, Hydraulic Engineering Series No. 42, UILU-ENG-92-2010, UIUC, 1992.
11. García, M.H., L. Bittner, and Y. Niño, "Mathematical Modeling of Meandering Streams in Illinois: A Tool for Stream Management and Engineering," Civil Engineering Studies, Hydraulic Engineering Series No. 43, UILU-ENG-2012, UIUC, 1994.
12. Parsons, J.D. and M.H. García, "Flow Structure and Mixing at Saline Gravity Current Fronts," Civil Engineering Studies, Hydraulic Engineering Series No. 45, UILU-ENG-95-2007, UIUC, 1995.
13. Dill, A., M.H. García, and A.J. Valocchi, "Video-Based Technique for Measuring Flow Velocities in Porous Media," Civil Engineering Studies, Hydraulic Engineering Series No. 48, UILU-ENG-95-2020, UIUC, 1995.

14. Freeman, J.W. and M.H. García, "Hydraulic Model Study for the Drown Proofing of Yorkville Dam, Illinois," Civil Engineering Studies, Hydraulic Engineering Series No. 50, UILU-ENG-96-2005, UIUC, 1996.
15. Dunn, C., F. López, and M.H. García, "Mean Flow and Turbulence in a Laboratory Channel with Simulated Vegetation," Civil Engineering Studies, Hydraulic Engineering Series No. 51, UILU-ENG-96-2009, UIUC, 1996.
16. López, F. and M.H. García, "Turbulence Structure in Cobble-Bed Open-Channel Flow," Civil Engineering Studies, Hydraulic Engineering Series No. 52, UILU-ENG-96-2012, UIUC, 1996.
17. López, F. and M.H. García, "Open-Channel Flow through Simulated Vegetation: Turbulence Modeling and Sediment Transport," Wetlands Research Program Technical Report WRP-CP-10, U.S. Army Corps of Engineers Waterways Experiment Station, Vicksburg, Mississippi, 1997.
18. Armbruster, J.T. and M.H. García, "Hydraulic Model Study for the Restoration of Batavia Dam, Fox River, Illinois," Civil Engineering Studies, Hydraulic Engineering Series No. 55, UILU-ENG-98-2001, UIUC, 1998.
19. García, M.H., D.M. Admiraal, and J. Rodriguez, "Navigation-Induced Bed Shear Stresses: Laboratory Measurements, Data Analysis, and Application," Civil Engineering Studies, Hydraulic Engineering Series, No. 56, UILU-ENG-98-2002, UIUC, 1998.
20. Yen, B.C., M.H. García, C.D. Troy, and J. Arbruster, "Stream Channel Migration Effects on Bridge Approaches and Conveyance," Report No. ITRC FR-94-4, Illinois Transportation Research Center, Illinois Department of Transportation, 1998.
21. Caisley, M.E., and M.H. García, "Canoe Chutes and Fishways for Low-Head Dams: Literature Review and Design Guidelines," Civil Engineering Studies, Hydraulic Engineering Series No. 60, UILU-99-2001, UIUC, 1999.
22. García, M.H., D.M. Admiraal, and J.F. Rodriguez, "Sediment Entrainment Functions for Navigation-Induced Resuspension," Civil Engineering Studies, Hydraulic Engineering Series No. 61, UILU-99-2006, UIUC, 1999.
23. Waratuke, A.R. and M.H. García, "Hydraulic Model Study of the Boneyard Creek at WrightStreet, Champaign-Urbana, Illinois," Civil Engineering Studies, Hydraulic Engineering Series No. 62, UILU-99-2010, UIUC, 1999.
24. Caisely, M., Bombardelli, F., and M.H. García, "Hydraulic Model Study of a Canoe-Chute for Low Head Dams in Illinois," Civil Engineering Studies, Hydraulic Engineering Series No. 63, UILU-99-2012, UIUC, 1999.
25. Peabody, A.M. and M.H. García, "Hydraulic Model Study of the Boneyard Creek at Lincoln Avenue, Urbana, Illinois," Civil Engineering Studies, Hydraulic Engineering Series No. 65, UILU-00-2002, UIUC, 1999.
26. Shuster, J.M. and Garcia, M.H., "Hydraulic Model Study for the Optimization of the Spillway at Batavia Dam, Fox River, Illinois," Civil Engineering Studies, Hydraulic Engineering Series, No. 66, UILU-ENG-2000-2010, UIUC, 2000.
27. Bombardelli, F.A. and M.H. García, "Three-Dimensional Hydrodynamic Modeling of Density Currents in the Chicago River, Illinois," Civil Engineering Studies, Hydraulic Engineering Series No. 68, UILU-ENG-01-2001, UIUC, 2001.

28. Bombardelli, F.A., Buscaglia, G.C., Rehmann, C.R. and Garcia, M.H., "One Dimensional Theoretical and Numerical Models for Aeration Bubble Plumes-McCook Reservoir Studies," Civil Engineering Studies, Hydraulic Engineering Series No. 71, UILU-ENG-2002-2005, UIUC, 2002.
29. Garcia, M.H. and A. Waratuke, "Large Scale Test on Air Bubble Diffuser "Report to U.S. Army Corps of Engineers, 2004.
30. Sequeiros, O.E., Nino, Y., Garcia, M.H., 2005 Sedimentation Management in Combined Sewer Over Flow Storage Reservoirs Using Water Jets. Civil Engineering Studies, Hydraulic Engineering Series, No. 76, UILU-ENG.
31. Garcia, C.M; Cantero, M.; Jackson, P.R. y Garcia, M.H. 2004. "Characterization of the flow turbulence using water velocity signals recorded by Acoustic Doppler Velocimeters". Civil engineering studies, Hydraulic engineering series 75. University of Illinois at Urbana-Champaign.
32. Abad, J. D., Bombardelli, F. A., Waratuke, A. R. and García, M. H. (2004) "Modeling and alternative analysis for SEPA Station No. 3". In report "SEPA Station No. 3, Siltation Alleviation Study, Greeley and Hansen & Metropolitan Water Reclamation District of Greater Chicago, IL, USA.
33. Liu, X. and M.H. Garcia (2007), Numerical Modeling of the Calumet Water Reclamation Plant (CWRP) Primary Settling Tanks, Civil Engineering Studies, Hydraulic Engineering Series No 80, Department of Civil and Environmental Engineering, University of Illinois at Urbana-Champaign.
34. Abad, J. D., Waratuke, A. R. and García, M. H. (2006). "Numerical simulation of the Telegraph Drop-shaft – Baumgartner Tunnel System", St. Louis, MO, USA.
35. Waratuke, A. R., Abad, J. D., Barnas, C., Garcia, M. H. (2009). "Design and modeling of a combined canoe chute/fish passage for the North Branch Dam, Chicago, Illinois". Civil Engineering Studies, Hydraulic Engineering Series No. 93, University of Illinois at Urbana-Champaign.
36. Liu, X., S. Sinha, N. Sobh and M.H. Garcia (2010), Three-dimensional Hydrodynamics and Water Quality Modeling of the Chicago River, IL. Hydrosystems Laboratory, prepared for Metropolitan Water Reclamation District of Greater Chicago, University of Illinois at Urbana-Champaign.
37. P. Ryan Jackson · Sumit Sinha · Som Dutta · Kevin K. Johnson · James J. Duncker · Marcelo H. Garcia Evaluation of the Potential for Hysteresis in Index-Velocity Ratings for the Chicago Sanitary and Ship Canal near Lemont, Illinois. U.S. Geological Survey Scientific Investigations Report 01/2013; USGS SIR 2013-5095.
38. Fernandez, R., Santacruz, S., Tokyay, T., Waratuke, A.R., Garcia, M.H., Parker, G. (2012) Holcim, St. Genevieve, Harbor Siltation Study, Civil Engineering Studies, Hydraulic Engineering Series No. 94 , UIUC-ENG-2012-2013, UIUC.
39. Kim, S.J., Waratuke, A., Mier, J.M., M.H. Garcia. Chicago River Controlling Works: Discharge Rating Curves for Hydraulic Structures Obtained Through 3D CFD Simulations, Civil Engineering Studies, Hydraulic Engineering Series No. 100, UIUC-ENG-2014-2105, UIUC.

40. Fitzpatrick, F.A., Boufadel, M.C., Johnson, Rex, Lee, Kenneth, Graan, T.P., and others, 2015, Oil-particle interactions and submergence from crude oil spills in marine and freshwater environments—review of the science and future science needs: U.S. Geological Survey Open-File Report 2015-1076, 33 p.
41. Jackson, R. P., S. Sinha, S. Dutta, K. Johnson, J. Duncker and M. H. Garcia. (2013) Investigation of Hysteresis in Index-Velocity Ratings for the Chicago Sanitary and Ship Canal near Lemont, Illinois. USGS Scientific Investigations Report 2013-5095.

#### **REPORTS ON STUDIES FOR CHICAGO DEEP TUNNEL AND RESERVOIR PLAN (TARP)**

1. Leon, A.S., Schmidt, A.R., Ghidaoui, M.S., and Garcia, M.H., (2006). "Review of Sewer Surcharging Phenomena and Models," Civil Engineering Studies, Hydraulic Engineering Series No. 78, Tunnel and Reservoir Plan (TARP) system Modeling Series, No. 1, UILU-ENG-2006-2005, 31 p.
2. Oberg, N., Schmidt, A.R., Leon, A.S., Waratuke, A.R., Landry, B.J., and Garcia, M.H., (2008). "Illinois Hydraulic Conveyance Analysis Program Version 1," Civil Engineering Studies, Hydraulic Engineering Series No. 81, UILU-ENG-2008-2011, 60 p.
3. Cello, P.A., Catano, Y.A., Snook, B.M., Schmidt, A.R., and Garcia, M.H., (2009). "NEXRAD-Derived Rainfall Data Calibration for a Monitored Area in Cook County, Illinois," Civil Engineering Studies, Hydraulic Engineering Series No. 84, UILU-ENG-2009-2021, 127 p.
4. Hoy, M.A., Schmidt, A.R., and Garcia, M.H., (2009). "Unsteady Flow Routing Using Predetermined Solutions to the Equations for Conservation of Mass and Momentum," Civil Engineering Studies, Hydraulic Engineering Series No. 86, UILU-ENG-2009-2025, 81 p.
5. Hollander, D.A., Schmidt, A.R., and Garcia, M.H., (2009). "Mathematical Rainfall/Runoff Modeling Methods for Green Roofs and Their Applications," Civil Engineering Studies, Hydraulic Engineering Series No. 87, UILU-ENG-2009-2026, 57 p.
6. McKay, S.K., Schmidt, A.R., and Garcia, M.H., (2009). "Lateral Prediction of Depth-Averaged Velocity in Compound Open Channels," Civil Engineering Studies, Hydraulic Engineering Series No. 88, UILU-ENG-2009-2027, 134 p.
7. Bondar, C.E., Schmidt, A.R., and Garcia, M.H., (2009). "Method to Estimate Combined Sewer Overflow Discharge from Tide Gates," Civil Engineering Studies, Hydraulic Engineering Series No. 89, UILU-ENG-2009-2028, 143 p.
8. Cantone, J.P., Schmidt, A.R., and Garcia, M.H., (2009). "Potential Dangers in Simplifying Combined Sewer Hydrologic/Hydraulic Models Using Subcatchment Aggregation and Conduit Skeletonization," Civil Engineering Studies, Hydraulic Engineering Series No. 90, UILU-ENG-2009-2029, 87 p.
9. Crosa-Rivarola, C.S., Schmidt, A.R., and Garcia, M.H., (2009). "High Resolution Synthetic Urbana Watershed Data for Hydrologic Model Evaluation," Civil Engineering Studies, Hydraulic Engineering Series No. 91, UILU-ENG-2009-2030, 117 p.
10. Christensen, D.R., Schmidt, A.R., and Garcia, M.H., (2009). "Hydrologic Distributed Modeling Approach for Quantifying the Hydrologic Impacts of Rain Gardens in Urban Catchments," Civil Engineering Studies, Hydraulic Engineering Series No. 92, UILU-ENG-2009-2031, 158 p.

11. Cantone, J.P., Seo, Y., Zimmer, A., Schmidt, A.R., and Garcia, M.H., (2009). "Hydrologic Modeling of the Calumet TARP System," Tunnel and Reservoir Plan Report No. 1, 109 p.
12. Catano-Lopera, Y.A., Oberg, N., Choi, N.J., Schmidt, A.R., and Garcia, M.H., (2009). "Hydraulic Conveyance Analysis of the Calumet TARP System," Tunnel and Reservoir Plan Report No. 3, 64 p.
13. Cantone, J.P., Schmidt, A.R., Hollander, M., Erickson, A., Tang, Y., and Garcia, M.H., (2009). "Application of the Illinois Urban Hydrologic Model (IUHM) to Selected Catchments in the Calumet Tunnel and Reservoir Plan System," Tunnel and Reservoir Plan Report No. 6, 86 p.
14. Cantone, J.P., Stepina, N., Schmidt, A.R., and Garcia, M.H., (2011). "Hydrologic and Hydraulic Analysis of Calumet TARP System," Tunnel and Reservoir Plan Report No. 16, 73 p.

#### RESEARCH GRANTS & CONTRACTS SINCE 1998

Years (Inclusive)	Brief Title or Description	Source of Funds	Total Funding	PI's and lead PI if not this prof
1998 - 2001	Development of an Integrated Scientific and Technological Framework for Stream Naturalization	National Science Foundation and Environmental Protection Agency	\$881,913	4 B Rhoads PI (Geography)
2000	Modeling Dam Removal in the Fox River, Illinois	Illinois DRN	\$23,500	1 GARCIA (PI)
2000	Settling and Resuspension of CSO Solids	U.S. Army Corps of Engineers, WES	\$65,000	2 GARCIA (PI)
2000	Interaction of Bubbles and Biosolids in CSOs	U.S. Army Corps of Engineers, WES	\$74,000	2 GARCIA (PI)
2000	Hydrodynamic Modeling of the Chicago River	Metropolitan Water Reclamation District of Greater Chicago	\$25,000	GARCIA (PI)
2000-2002	Large Scale Experiments on Bubble Columns for Combined-Sewer-Overflows Management	U.S. Army Corps of Engineers, CERL	\$310,000	2 GARCIA (PI)
2000	Simulation of Transient, Low-Pressure-Induced Contaminant Intrusion into Water Distribution Systems	Battelle National Lab and Environmental Protection Agency	\$21,900	GARCIA (PI)
2000-2002	Evaluation of Gullies in Continental Margins	ONR	\$110,000	GARCIA (PI)
2001	Large Scale Oscillating Water-Sediment Tunnel	Dept. of Defense-DURIP Program/ONR	\$472,462	GARCIA (PI)



Years (Inclusive)	Brief Title or Description	Source of Funds	Total Funding	PI's and lead PI if not this prof
2001	Interaction of Coarse-Bubble Plumes and Water Jets with Suspended Solids	U.S. Army Corps of Engineers, WES	\$77,917	2, GARCIA (PI)
2001	Settling and Oxygen Demand of Suspended Combined-Sewer-Overflow Solids	U.S. Army Corps of Engineers	\$78,562	GARCIA (PI)
2001	Investigation of Diffusers and Mixers	U.S. Army Corps of Engineers	\$505,218	2, GARCIA (PI)
2001-2005	Wave-Current-Induced Mine Burial Due to Sediment Fluidization and Scour	Office of Naval Research	\$389,000	GARCIA (PI)
2002-2004	Sedimentation in Side Elevated Reaeration Pools (SEPA)	Greeley and Hansen	\$89,000	GARCIA (PI)
2002-2004	Hydraulic Model Study of Density Currents in the Chicago River	Metropolitan Water Reclamation District and Illinois Department of Natural Resources	\$148,000	GARCIA (PI)
2002	Lage-Scale Experiments with Bubble Plumes	U.S. Army Corps of Engineers	\$309,000	2, GARCIA (PI)
2001-2003	Modeling of Bend-Way Weirs in Streams	Illinois Water Resources Center	\$19,371	2, RHOADS (PI)
2001-2006	Management of Vegetated Riparian Stream Corridors	U.S. Dept. of Agriculture	\$30,000	GARCIA (PI)
2001-2002	Stage-Discharge * Ratings for Open-Channel Flows	National Science Foundation *(B.C. Yen original PI)	\$36,000	GARCIA (PI)
2002	Hydraulic Analysis of UV Disinfection Units	Sanitary District of Decatur Illinois	\$86,000	GARCIA (PI)
2002-2004	Dynamics of Turbidity Currents and Mud Flows	Office of Naval Research	\$190,000	GARCIA (PI)
2001-2004	Integration of Mathematical Modeling, Physical Modeling and Field Research for Advanced Field Research for Advanced Understanding of River Dynamics	National Science Foundation (International Programs)	\$25,550	2 Rhoads (PI)
2002-2004	Experiments with Oscillating Water Tunnel	Office of Naval Research	\$140,000	GARCIA (PI)
2003-2004	Hydraulic Model Study of Calumet Pumping Station	Metcalf & Eddy	\$216,000	GARCIA (PI)
2003-2005	Buril of Mines by Local Scour	ONR	\$250,000	GARCIA (PI)

Years (Inclusive)	Brief Title or Description	Source of Funds	Total Funding	PI's and lead PI if not this prof
2003-2004	Design of Jet System for Solids Management	Metropolitan Water Reclamation District of Greater Chicago (MWRDGC)	\$126,000	GARCIA (PI)
2003-2007	TARP-Phase I Calumet Modeling	Metropolitan Water Reclamation District of Greater Chicago (MWRDGC)	\$926,000	2, GARCIA (PI)
2004-2008	Morphodynamics of Ripples in benthic Boundary Layer Flows	Office of Naval Research (ONR)	\$240,000	GARCIA (PI)
2005-2008	TARP-Phase I Main Stem-Des Plaines Modeling	Metropolitan Water Reclamation District of Greater Chicago (MWRDGC)	\$1,150,000	2, GARCIA (PI)
2005	Modeling of Hydro-acoustic Sensors	U.S.Geological Survey	\$23,000	GARCIA (PI)
2005-2006	CFD Computational Modeling of Settling Tanks	Metropolitan Water Reclamation District of Greater Chicago (MWRDGC)	\$206,733	GARCIA (PI)
2006-2008	Instrumentation for Large Oscillating-Water Sediment Tunnel	DURIP Program DOD	\$398,000 plus \$100,000 UIUC match	GARCIA (PI)
2006-2010	3D Modeling of Chicago Waterways Phase 1	Metropolitan Water Reclamation District of Greater Chicago (MWRDGC)	\$619,426	GARCIA (PI)
2008-2009	Hydraulic Model Study Of Canoe Chute And Fish Passage	Metropolitan Water Reclamation District of Greater Chicago (MWRDGC)	\$280,000	GARCIA (PI)
2008-2010	Turbidity Currents Flowing Over Bedforms	Exxon-Mobil	\$152,606	GARCIA (PI)
2006-2008	Numerical modeling of non-cylindrical mine burial	Office of Naval Research (ONR)	\$290,000	GARCIA (PI)
2006-2008	Turbidity Currents in Lake Wabush, Canada	Iron Ore Company-Laval University, Canada	\$210,000	2, PARKER (PI)
2007-2010	TARP-Phase II Calumet Modeling	Metropolitan Water Reclamation District of Greater Chicago (MWRDGC)	\$1,400,000	2, GARCIA (PI)

Years (Inclusive)	Brief Title or Description	Source of Funds	Total Funding	PI's and lead PI if not this prof
2009-2011	3D Modeling and settling tanks and appurtenant flow distribution structures at the North Side Water reclamation Plant, Chicago, Illinois	Metropolitan Water Reclamation District of Greater Chicago (MWRDGC)	\$390,000	GARCIA (PI)
2010	TARP-Phase III Calumet Modeling	Metropolitan Water Reclamation District of Greater Chicago (MWRDGC)	\$582,000	2, GARCIA (PI)
2008-2013	Channel Evolution Model for Meandering Rivers	U.S. Dept. of Agriculture, National Sedimentation Lab	\$156,000	GARCIA (PI)
2010-2011	Modeling of Canoe Chute and Fish Passage for Arkansas River at Wichita, Kansas	MKEC Engineering	\$55,000	GARCIA (PI)
2011-2013	TARP-Phase II Main Stem and Des Plaines Modeling	Metropolitan Water Reclamation District of Greater Chicago (MWRDGC)	\$ 2,141,779	2, GARCIA (PI)
2011-2013	Characterization of Bedforms using Wavelet transform	Office of Naval Research	\$109,000	2, GARCIA (PI)
2011-2012	Harbor Siltation Study, Holcim St Genevieve, Missouri	Holcim Corporation	\$195,200	2, PARKER (PI)
2012	Modeling of North Shore Channel Water Levels-Chicago, Illinois	Metropolitan Water Reclamation District of Greater Chicago (MWRDGC)	\$30,000	GARCIA (PI)
2011-2012	RVR-Concepts River Meandering Model Application	Environmental Protection Agency (EPA)-University of Oklahoma	\$33,248	GARCIA (PI)
2011-2012	Streambank Erosion in the Mackinaw River, Illinois	USGS-Illinois Water Resources Center	\$28,985	GARCIA (PI)
2011-2012	RAPID: Mississippi Flood of 2011 - Investigation of Initial Impact on the Landscape	National Science Foundation	\$100,000	8 (P. Kumar, PI)
2011-2013	Fate and Transport of Asian Carp Eggs in Tributaries to the Great Lakes	USGS-Illinois Water Resources Center	\$81985	GARCIA (PI)
2012-2014	Three-dimensional Hydrodynamic Modeling of Chicago Sanitary and Ship Canal at Lemont, Illinois	USGS-US Army Corps of Engineers	\$115,000	GARCIA (PI)

Years (Inclusive)	Brief Title or Description	Source of Funds	Total Funding	PI's and lead PI if not this prof
2012-2015	Collaborative Research: Role of Interfacial Turbulence in Hyporheic Flow and Fine Particle Dynamics	National Science Foundation	\$299,000	4 (w/A. Packman, Northwestern University, K. Christensen, J. Best, UIUC)
2012-2013	Integration of the HEC-DSS Database into the Illinois TCM TARP Model	US Army Corps of Engineers	\$60,000	GARCIA (PI)
2010-2012	Tanana River Railroad Bridge-Movable-bed model to study of scour and impact of debris	Hanson Professional Services, Alaska railroad Company	\$90,000 (\$75K + \$15K)	GARCIA (PI)
2012-2015	Flow structure and channel morphodynamics of meander bend chute cutoffs: A case study of the Wabash River, USA	National Science Foundation	\$300,000	3 (Bruce Rhoads, Geography, Jim Best, Geology)
2012-2014	Hydrothermal Modeling of Clinton Lake, Illinois	Exelon	\$50,000	GARCIA (PI)
2013	1D Hydraulic Model of Chicago Area Waterways System (CAWS)	Great Lakes Commission	\$56,000	GARCIA (PI)
2013-2014	Belo Monte Hydropower Canal, Brazil	INTERTECHNE (Gift)	\$30000	GARCIA (PI)
2013-2015	Hydrodynamic/Sediment Transport Modeling for the Embridge Line 6B Kalamazoo River Oil Spill	USGS and EPA	\$200,000	GARCIA (PI)
2014-2015	Impact of CSOs and Stormwater on Chicago Area Waterways (CAWS)-Linking TARP Models to 3D CAWS Hydrodynamic Model	Metropolitan Water Reclamation District of Greater Chicago (MWRDGC)	\$861,622	GARCIA (PI)
2014-2015	Modeling of the American River, California	Waterborne Environmental Inc. (Gift)	\$50000	GARCIA (PI)
2014-2017	Large-Scale Laboratory Experiments of Incipient Motion, Transport, and Fate of Underwater Munitions under Waves, Currents, and Combined-Flows	SERDP	\$919,422	2, GARCIA (PI)

Years (Inclusive)	Brief Title or Description	Source of Funds	Total Funding	PI's and lead PI if not this prof
2015-2016	Development of a hydrodynamic, sediment transport and contaminant fate model for the Lower Passaic River and Newark Bay, New Jersey	Tierra Solutions, Inc.	\$850,000	2(w/Jim Best, Geology, Garcia PI))
2016-2017	Transport and Fate of Oil-Particle Aggregates after Oil Spill Accidents	USGS and US EPA	\$43500	GARCIA (PI)
2016-2020	Invasive Species Mitigation Alternatives Impacts on the CAWS as it Relates to Flooding, Water Quality and Navigation	Metropolitan Water Reclamation District of Greater Chicago (MWRDGC)	\$975,320	GARCIA (PI)

## SERVICE

### PROFESSIONAL SOCIETIES

#### American Society of Civil Engineers (ASCE)

Environmental and Water Resources Institute (EWRI)

*Editor-in-Chief*, ASCE Manual of Practice 110, Sedimentation Engineering (1999-2008)

*Corresponding Editor*, ASCE Manual of Practice 74, Sedimentation Engineering, Classic Edition originally edited by Vito A. Vanoni, (1999-2006).

Alfred Noble Prize Committee Member, 1998 – 2002

Hans Albert Einstein Award Committee, 1998-2004

Journal of Hydraulic Engineering, Discussion and Technical Note Awards Committee; Member 1991 - 1994; Chairman 1992 – 1994

Sedimentation Committee; Control Group Member, 1994 - 1998; Chair, 1999 - 2008

Chair, Task Committee on “Education in Sediment Transport”

Engineering Mechanics Division

Turbulence Committee; Member, 1992 - 1996; Control Group Member, 1997 - 2000

Fluid Mechanics Fundamentals Committee, Control Group Member, 1994 - 2000

**American Geophysical Union (AGU)** Associate Editor, Water Resources Research, 1998-2000

#### International Association for Hydraulic Research (IAHR)

International Journal of Hydraulic Research, IAHR, *Editor-in-Chief*, 2001-2006

Member, Fluid Mechanics Committee

Chair, River, Coastal and Estuarine Morphodynamics (RCEM) Board, 2007- present

Co-Chair, RiverFlow 2016 Conference, St. Louis, MO

**American Water Resources Association (AWRA)**

Delegate, University Council on Water Resources, UCOWR, 2013-2015

**UNIVERSITY OF ILLINOIS**

**a. Department**

1. Building Equipment and Nonrecurring Expenses Committee, August 1990 - 1998
2. Safety Committee, April 1990 - 2000
3. CE Advisory Committee 1993 - 2000
4. Graduate Admissions, Fellowships, and Assistantships Committee, 1994 - 1996
5. Head Search Committee, November 1995, 2004, 2005
6. Promotion and Tenure Committee, 2002-2005
7. CEE Advisory Committee, 2004-2006
8. OEE Administrative Committee 2002-2004
9. Head Search Committee, 2009
10. Chair, Committee to develop guidelines for non-tenure track faculty, 2009-2010
11. Chair, CEE Advisory Committee, 2011-2014
12. CEE Faculty Search Committee 2015
13. CEE Awards Committee, 2014-present
14. Chair, Remodeling of Hydrosystems Laboratory Building, 2015-present
15. CEE Advisory Committee, 2016-present
16. Faculty advisor, Student Chapters of International Association for Hydraulic Research (IAHR) and International Water Resources Association (IWRA), 2001-present

**b. College**

1. Fluid Dynamics Coordinating Committee, October 1992
2. Engineering Open House Judge, March 1995
3. Honors Council, College of Engineering, 1997 – 2000
4. Dean's Committee on Appointments, 2002-2005
5. Fluid Dynamics Coordinating Committee, October 1992
6. Engineering Open House Judge, March 1995
7. Honors Council, College of Engineering, 1997 – 2000

8. Dean's Committee on Appointments, 2002-2005
9. Boneyard Creek Hydraulic Model Study, 1998 – 2000
10. College of Engineering Executive Committee, 2004-2006.
11. Vice Chancellor Committee for University Scholars, 2005-2006
12. Boneyard Creek Sedimentation Study, 2010-2011
13. Committee to Review Undergraduate Experience in Fluid Mechanics Laboratory 2012
14. Chair, COE Committee on Appointments for Chairs and Professorships, 2015-present

c. Campus

1. Host, President's Award Program for Minorities, 1992 – present
2. Faculty Senate ,1998-2000
3. Promotion and Tenure Committee Office of the Provost 2012-2015
4. Off-Cycle Promotion and Tenure Committee Office of the Provost 2015-present

**d. Federal and State**

1. Provided assistance to the Government of Paraguay on flooding through the U.S. Office of International Development, March 1998
2. Illinois River Watershed Program organized by the Lieutenant Governor of the State of Illinois, Science Committee Member, 1998 – 2000.
3. Provided assistance to City of Danville on Dam Removal/Modification Issues to prevent drowning accidents, 2004
4. U.S. Environmental Protection Agency Review Panel on "The Role of Sediments on the Transport and Fate of Pollutants in Freshwater and Estuaries", Newport, Rhode Island, 1990.
5. U.S.-Taiwan Bilateral Panel on "Understanding Sedimentation and Model Evaluation", National Research Council and Federal Energy Regulatory Commission, Washington, DC, 1991.
6. U.S.-Taiwan Bilateral Panel on "Understanding Sedimentation and Model Evaluation", National Research Council and Federal Energy Regulatory Commission, San Francisco, California, 1993.
7. Office of Naval Research Workshop on "Continental Terrace Sediment Process", New York University at Stony Brook, New York, 1993.
8. National Science Foundation Review Panel for Research Initiation Awards in Fluid, Hydraulic, and Particulate Systems Program, Arlington, VA 1994.
9. Sino-German Workshop on "Unsteady Sediment Transport Modelling", Berlin, Germany, 1995. (only representative from USA).
10. Sino-USA Workshop on "Sediment-Related Disasters", Beijing, China. (Supported by NSF), March 1999.

11. Office of Naval Research Workshop on “Mine Burial Prediction in Coastal Environments,” New Orleans, Louisiana, 2000.
12. Workshop on “Modeling and Management of Environmental Issues,” Invited Panelist on Modeling of Contaminated Sediment Processes, Organized by Du Pont de Nemours and Company, July 2000.
13. Steering Committee for Workshop on Environmental Windows for Dredging Projects, National Research Council, July 2000-June 2001.
14. Expert Panel for “Development of a TMDL Model for PCBs in the Delaware River Basin,” Delaware River Basin Commission, West Trenton, New Jersey, 2000-2001.
15. Expert Panel for “Housatonic River Hydrodynamic Modeling,” Commonwealth of Massachusetts, US Environmental Protection Agency, State of Connecticut, Department of the Interior, NOAA, March- 2001.
16. Expert Panel for “River Science at the US Geological Survey,” National Research Council, The National Academies, Washington, D.C., 2004-2006
17. Expert Panel for “Water Resources at the US Geological Survey.” National Research Council, The National Academies, Washington, D.C., 2004-2006.
18. Science Advisory Committee, University of Trento, Italy, 2007-2010.
19. Member, Selection Committee, International Lorenz G. Straub Award Competition for PhD Dissertation, University of Minnesota, 2014-2017
20. Steering Committee Member, Community Surface Dynamics Modeling System, CSDMS, 2013-2017 (<http://csdms.colorado.edu>)
21. International Great Lakes Commission (Canada-USA) Co-Leader Sedimentation Studies Task Working Group for St. Clair River, 2007-2010
22. Science Advisory Committee, Firenze 2016 Project for Flood Protection, Florence, Italy, 2014-2016
23. Expert Review Panel, Gulf Research Institute, National Academy of Sciences, 2016  
<http://www.nas.edu/gulf/about/index.html>
24. **Other outside Service**
  1. Illinois Department of Transportation: Drown proofing of low-head dams along the Fox River, 1995
  2. Hydraulic Engineering Luncheon Seminar, Champaign, Illinois, November 1998
  3. Illinois Department of Natural Resources: Drown proofing of Dams in the Vermillion River, 2004
  4. Chair, External Review Committee, Department of Civil and Environmental Engineering and Earth Sciences, University of Notre Dame, 2013
  5. Advisor, Kalamazoo River Oil Spill, EPA, USGS, 2012-2016



6. Expert advice, 2013 Flooding of Marseilles Illinois, US Department of Justice 2013-2016
7. Board Member, Smart Urban Water Supply Systems (Smart UWSS), The Hong Kong University of Science and Technology, 2016

### CONTINUING EDUCATION

Course	Year	Number of Students	Delivery Method
Taught a 30-hour course on “Sediment Transport Mechanics and Engineering” University of Genoa, Italy	1993	12	lectures
Taught a 20-hour course on “Environmental Hydrodynamics,” Latin American Hydraulics Congress, Santiago, Chile	1994	30	lectures
Taught a 40-hour course on “Environmental Hydrodynamics,” Universidad Nacional del Litoral, Santa Fe, Argentina	1995	25	lectures
Taught a 40-hour course on “Hydrodynamics of Sediment Transport (CEE210),” California Institute of Technology, Spring Quarter	1997	10	lectures-lab
Taught a 40-hour course on “Sediment Transport,” Universidad Nacional del Litoral, Santa Fe, Argentina, Spring.	1998	18	lectures
Taught a 20-hour course on “Environmental Hydrodynamics,” Mexican Society of Hydraulic Engineers, Huatulco, Mexico, October	1998	20	lectures
Taught a 15-hour course on “Sediment Transport,” University of Hong Kong, December	1998	30	lectures
Taught a 16-hour course on “Sediment Transport During Hydrologic Extremes,” Universidad Nacional de Cordoba, Argentina, October	2000	28	lectures
Taught a 25-hour course on “Sediment Transport and River Engineering,” Universidad de Castilla-La Mancha, Spain, June.	2000	30	lectures
Taught a 40-hour course on “River Sedimentation,” University of Zaragoza, Spain, June.	2006	25	lectures
Taught a 20-hour course on Deep Water Sedimentation to personnel from Exxon Mobil, UIUC, July.	2006	30	lectures and lab demonstrations
Taught a 30-hour course on River Meandering Modeling, Tsinghua University, Beijing, China	2011	50	lectures
Taught a 30-hour course on use of RVR Meander to US Forest Service Personnel, Lake Tahoe, California	2011	15	lectures
Taught a 20-hr course on River Meandering, Universidad Nacional del Litoral, Santa Fe, Argentina	2013	25	lectures
Taught a 20-hr course on "Sediment Transport during Extreme Hydrologic Events," IAHR Latin American Congress, Santiago, Chile	2014	30	lectures
Taught a 20-hr course on "Dynamics of Tidal Inlets and Estuary Sedimentation," Universidad del Norte, Barranquilla, Colombia	2016	35	lectures
Taught a 30-hr graduate course on “Sediment Transport” at Universidad Nacional del Litoral, Santa Fe, Argentina	2016	20	lectures-lab