Academic Affairs
Office of Research and Sponsored Programs
Suite 202, Howard Hall
(239) 590-7520

Internal Review Form

(to accompany grant application submissions)

About this form:

1. Upon exiting the PI name field, the form will request you save a copy of the application.
2. Click outside of the text boxes to view your complete entry.
3. Spelling errors are visible when the cursor is in a field.
4. There is no "undo" function.
5. Submit a signed original, in color, to the Office of Research and Sponsored Programs.

For assistance with the form, please call Donna Stremke at 590-7029.

Principal Investigator/Project Director

PI Name: Nora Demers I am a new investigator at FGCU: ☐ UID Number: 814732164

E-mail Address: ndemers@fgcu.edu College/Dept: Arts & Sciences

Center/Institute: Whitaker Center Dept/Division: Biological Sciences

This is an inter departmental proposal: ☒

X	Add	College/Dept:	Engineering	Dept/Division:	Environmental Engineering
X	Add	College/Dept:	Arts & Sciences	Dept/Division:	Marine and Environmental Sciences
X	Add	College/Dept:	Arts & Sciences	Dept/Division:	Humanities and Social Sciences

Research is: Neither Does this project support sustainability? Yes

Co-investigator(s): ○ No ◉ Yes

		Name	New FGCU Co-PI	College/Department	Dept/Division
X	Add	Anne Hartley	☐	Arts & Sciences	Marine and Environmental Sc
X	Add	Simeon Komisar	☐	Engineering	Environmental Engineering
X	Add	Serge Thomas	☐	Arts & Sciences	Marine and Environmental Sc
X	Add	Jan-Martijn Meij	☐	Arts & Sciences	Humanities and Social Scien
X	Add	Jong-Yeop Kim	☐	Engineering	Environmental Engineering

Title of Project:

Determining Anthropogenic Sources Of and Concerns About Nutrients In Stormwater Systems: An Interdisciplinary Approach (Fort Myers, FL, USA).

Project Period: (click field to select date from calendar):

Start Date: Jul 1, 2013 End Date: Jun 30, 2014

ORSP Completes
If awarded, project is a:

Sponsor

Sponsor: Florida Gulf Coast University CFDA #:

(if flow through, originating sponsor)

Originating Sponsor:

Program Name: FGCU Multi-Disciplinary Research Initiative Sponsor Type: Private

Sponsor's Contact Name: TC Yih Phone: 590 7020 E-Mail: TCYIH@fgcu.edu

Submission Deadline: Mar 11, 2013 Submission Via: E-mail

Budget (Please attach a budget form or spreadsheet)

	Initial Period	Total Project
Sponsor Support Requested		
Direct Cost	$15,000.00	$15,000.00
Indirect Cost at (show as a percent)		
Total Sponsor Request	$15,000.00	$15,000.00
Sponsor requires cost sharing or matching: ☐		
Total Project Costs		
Direct Cost	$15,000.00	$15,000.00
Indirect Cost	$0.00	$0.00
Total	$15,000.00	$15,000.00

The following questions help ensure FGCU is in compliance with federal and sponsor regulations and help clarify the budget.

Please note: PI's are responsible for submitting a protocol to the IRB (human subjects), IACUC (animal subjects) or the Research Safety Committee (radioactive materials or biohazardous materials), if needed.

☒	1. Project will involve human subjects. Please submit an IRB application to ORSP. For assistance in determining if an IRB application is needed please refer to the IRB decision tree and/or contact Sandy Terranova, Research Compliance Coordinator, with any questions. She can be reached at 590-7522 or sterranova@fgcu.edu.
☐	2. Project will involve animal subjects.
☐	3. Project will require the purchase of radioactive materials, sources or instruments containing radioactive processes.
☐	4. Project will involve the use of biohazardous materials and/or materials such as recombinant DNA, select agents, pathogens, controlled chemicals and radioactive material, or processes that result in hazardous/chemical waste.
☐	5. Project will require release time in 1st project period.
☒	6. Project will require hiring grant-funded personnel.
☐	7. Faculty overload will be required in 1st project period. (May not be available for federal or federal flow-through state grants.)
☐	8. Project will require SP personnel overtime.
☐	9. Project will require renovation or modification of current space.
☐	10. Project will require additional space.
☐	11. Project will require the purchase/lease of computer equipment.
☐	12. Project will involve computer services.
☐	13. Project will involve Academic and Event Technological Services.
☐	14. Project will involve Web, e-Learning, and Publication Services
☐	15. Project will require the purchase of specialized software.
☐	16. Project will require the use of proprietary information or data.
☐	17. Project will require a portion of the work to be subcontracted.
☐	18. Project may result in ideas that could be commercialized.
☐	19. Project may result in me and/or a co-researcher(s) or family member(s) having a potential conflict of interest as in the defined FGCU Principal Investigator's Handbook.
☒	20. This project will provide 'for-credit' courses.
☒	21. This project will provide research experiences for students.
☐	22. This project will include a multi-day on-campus conference.
☐	23. I am debarred or suspended from doing business with the federal government.
☐	24. This sponsor restricts the publication or dissemination of information.
☐	25. This sponsor restricts or prohibits participation by foreign nationals.
☐	26. This project will require travel to a foreign location.
☐	27. This project involves the performance of research and/or collaboration with a foreign location.
☐	28. This project involves the export of items to a foreign location.

Signatures				
	Role	Signature	Typed/Printed Name	Date
X Add Co-Investigator	Principal Investigator	Nora E Demers	Nora Demers	3/8/2013
X Add Co-Investigator	Co-Investigator		Serge Thomas	3/11/2013
X Add Co-Investigator	Co-Investigator		Anne Hartley	3/11/2013
X Add Co-Investigator	Co-Investigator		Jong-Yeop Kim	3/11/2013
X Add Co-Investigator	Co-Investigator		Jan-Martijn Meij	3/11/2013
X Add Co-Investigator	Co-Investigator	Simeon Komisar	Simeon Komisar	3/11/2013
Chair or Equivalent			BETTE JACKSON	8 March 2013
Dean or Equivalent			ASHANI VOLETY	3/11/13

The Following Additional University Signature(s) are Required.

IRB, IACUC or Research Safety Committee			
Signature		*Date*	
ORSP Associate Vice President for Research		Dr. Tachung Yih	

Determining Anthropogenic Sources Of and Concerns About Nutrients In Stormwater Systems: An Interdisciplinary Approach (Fort Myers, FL, USA).

Nora Demers[1], Anne Hartley[2], Serge Thomas[2], Jong-Yeop Kim[3], Simeon Komisar[3] and Jan-Martijn Meij[4]; Departments: Biology[1], Marine and Ecological Sciences[2], Environmental and Civil Engineering[3], Social & Behavioral Sciences[4]

Abstract: Watershed development has drastically altered the timing, flow pattern and quality of southwest Florida waters. These changes severely impact natural aquatic and terrestrial ecosystems, and regulations for the amount of nutrients present in these waters are a matter now before the courts. Most runoff drains into stormwater systems; the relative contributions of nutrients sources (such as fertilizer, reclaimed water, and septic tanks), and the interplay of groundwater and surface water are not well-quantified. Because some of these inputs are controlled by individual households, local communities may be able to lower nutrient inputs directly. We propose to conduct a pilot study in San Carlos Park and an adjacent community (Estero, FL) to i) quantify the nutrient sources in the stormwater system, and ii) evaluate community awareness of the problem and willingness to manage residential inputs. This interdisciplinary project links ecology, hydrologic and environmental engineering, and social behavior, and includes mentoring of undergraduate students. The study will yield preliminary data for future external funding to address i) water quality, ii) water policy implementations, iii) public policy and tax policy changes to address water quality improvements and iv) Best Management Practices.

Introduction/Background: Southwest Florida has experienced rapid population growth in the last half-century linked to its subtropical weather and natural resources, e.g. boating, birding, shelling, and recreational fishing. Until the early 1980s, several residential areas, including San Carlos Park, were built using a ditch and drain strategy. Most homes relied on septic tanks. In 1982, new regulations aimed at slowing stormwater runoff and filtering pollutants were implemented, including dug out detention/retention ponds ("lakes"), with houses connected to a centralized wastewater treatment system. These communities fertilize lawns and gardens, and often irrigate with reclaimed wastewater containing nutrients; management choices that compromise pollutant removal. More recently, Best Management Practices (BMPs) and the setting of Total Maximum Daily Loads (TMDLs) of nutrients allowed in surface waters are being implemented to manage nutrient inputs. Public outreach to educate residents about the importance of adopting BMPs has met with limited success, even when subsidized (CHNEP, 2007). Regulations, such as fertilizer ordinances, are more effective because these interventions are longer term, broader-reaching, and not dependent solely on individual residents, but they are hard to enforce. Residents are reluctant to change their behaviors or voluntarily tax themselves without obvious benefits, and politicians are reluctant to tax residents. Agencies charged with protecting and improving the coastal and estuarine habitats face a daunting challenge.

Two members of this research team are actively engaged in community-based research. Demers helped direct significant resources towards better understanding the stormwater drainage system in San Carlos Park. She works with agencies such as the Charlotte Harbor National Estuary Program to educate homeowners and implement BMPs such as Florida Friendly Landscaping. Thomas has been working with Homeowners Associations in communities developed since 1982 to help them better understand and manage their stormwater systems. His work focuses on sediment loading of nutrients.

Objectives/Goals/Specific Aims: We propose to conduct a pilot study in San Carlos Park and an adjacent community built post-1982 to quantify the fluxes of the different sources of nutrients into stormwater drainage systems, better quantify the relationships between surface and groundwater, and to identify where public attention, policy and regulation and BMPs could be

directed to have the most positive impact. Additionally, we propose to assess residents' awareness of the problem and their willingness to make changes either through the use of BMPs and/or taxable contributions. This proposal includes a public education component.

Needs/Innovations/Significance:

Population growth and development have altered the timing, flow pattern and quality of Florida water. Regulation of water quality will protect the natural environment from pollution, but local communities can reduce nutrient inputs on their own accord. New policies to improve water quality should be developed with the input of the numerous and diverse stakeholders, using appropriate models that measure effects of land use practices. Attempts to characterize nutrient loading in this region depend on assumptions about sources and sinks of nitrogen and phosphorus in the watershed, using models that were originally developed for other areas of the state with different land and hydrological conditions than southwest Florida (Neitsch et al, 2009). The data gathered in this project can be used to further refine these models (Gill et al., 2009; Withers et al., 2012).

This initiative supports FGCU's mission directly, and will strengthen the relationship between the University and the local community by identifying ways to manage land and maintain a high quality of life. The information compiled on nutrient sources and residents' awareness and willingness to pay will assist decision-makers in meeting new water quality goals.

Methods/Analysis:

We plan to compare water and sediment quality and nutrient inputs, and gather and assess residents' opinions and land-use practices in two different types of communities. The San Carlos Park area was chosen because of its proximity to FGCU, clear delineations of septic vs. sewered housing, and detention/retention ponds, and their status. This mosaic of developments allows for the individual assessment of different case scenarios. San Carlos Park was built before the 1982 stormwater rules; and the adjacent community was built after the 1982 rules. Residential differences between the two: San Carlos Park has many working-class homeowner and renters compared to the newer community with retirees and snowbirds.

1. Calibrate a mass flow hydro-geological model suitable for southwest Florida. We will sample the stormwater drainage system in the two communities at 3 time points: heart of the dry season, early and late in the wet season. We will select different locations in these communities with varying inputs of nutrients [septic and sewered homes, homes using fertilizer or not, commercial fertilizer sites (golf courses, other), irrigation water users)]. We will monitor Flow with the use of ultrasonic level sensors and flow rating curves to convert depth readings to flow rates. We will develop shallow ground water flow samples sites to help distinguish the relationship between groundwater and surface water nutrient inputs.

2. Create a working pollutant flux model by determining sources. In 2008 a consulting firm identified sub-basins within the watershed that can be used to help distinguish the diverse sources of pollutants and calibrate models (Boyle et al. 2008). We will collect water characteristics, sediments and water samples at the same time as flow measurements. At each sampling station, we will measure temperature, dissolved oxygen, conductivity, pH and ORP over the water column using YSI multiprobe. We will take a integrated water column for further total nitrogen and total phosphorus analyses in the laboratory (APHA, 1999). Additionally, to help distinguish the source of nitrogen, we will collect benthic organic matter, periphyton and phytoplankton samples (Rogers, 1999). Dried samples will be sent to a stable isotope facility for analysis (Heaton, 1986 and Costanzo, 2003). We will estimate septic pumping and replacement rates and home fertilizer services by contacting local service providers. We will obtain demographic information from agencies including the County Clerk of Courts and the U.S. Census Bureau.

3. Evaluate residents' knowledge about the environmental impact of land use decisions. We will assess behaviors and opinions of residents with data from surveys to characterize homeowner/taxpayer' opinions about land use impacts on quality of life, economic value and their protection and to determine whether homeowners are interested or willing to change their current practices. We will do canvassing/surveying to determine the perception of stormwater systems and their relationship to quality of life, property value and the local economy (EPA, 2002)

4. Data synthesis, and dissemination of results. We will map nutrient sources by the hydro-geological model. These data will serve as the primary data layer in a Geographic Information System (GIS) model (ArcGIS, ESRI). We will create additional data layers for current land use practices (fertilizer applications, reclaimed water use, the existence of septic tanks, etc.), demographic data (US Census), and survey-generated community awareness indices and willingness to act. The final map will reveal target areas for education about environmental impacts of fertilization and BMPs. We will share these findings with homeowners, present to county and state agencies, and present at annual meetings of our professional societies.

5. Community-based research experience and mentoring for Science, Technology, Engineering and Math (STEM) students. This project will provide opportunities to mentor undergraduate students' senior research projects in an interdisciplinary mode as students will work together on different aspects of this proposal as much as possible.

Outcomes/Deliverables:

1) A locally calibrated hydro-geological model with supplemental GIS data that can be used to better understand nutrient flows in the region.

2) A report that informs agencies, elected officials and neighbors about residents' opinions and ideas on their role in improving management practices.

Plans to apply for External Funding: The preliminary data and watershed model delivered by this project will provide "proof of concept" for external funding from agencies such as the FDEP, Environmental Protection Agency, Lee County, National Science Foundation, South Florida Water Management District, US Department of Agriculture.

Timetable: Budget and Budget Justification:

Timetable: July- November 2013: hire students workers, obtain empirical data from local and regional environmental labs, select sites and obtain permissions for sampling, field sampling of *wet season* water quality, sediments, stable isotopes, and flow rates; processing of samples for analysis, develop and gain IRB approval for survey of residents and collect data from septic tank maintenance and fertilizer businesses.

November 2013-March 2014 Field data collection of *dry season* water quality, sediments, stable isotopes, and flow rates, survey local residents about their knowledge and interest in issues related to stormwater quality and impacts on the environment.

March, 2014-July, 2014 Model calibration, GIS model creation, data analysis and report preparation, search for external funding opportunities.

Budget & Justification	Item	Price per unit	Total cost requested
Field data collection and sample processing (12 locations X 3 time intervals in duplicate)		$85	$ 3,060
Stable isotope analysis (12 locations X 3 time intervals in duplicate) x 2 depths of sediment sampled		$10	$ 1,440
Student interns (900 hours)		$10/hour	$ 9,000
	Water and sediment collection (200 student hours)		
	Lab processing (150 student hours)		
	Surveying (250 student hours)		
	Model Calibration (100 student hours)		
	Data Analysis and Mapping (200 student hours)		
Faculty mentoring of students, data analysis, model calibration, GIS modeling, as in-kind services (@ 5% AY, ave. $58,000)		($17,400)	
Supplies (paper, photocopying, mailing, survey incentives)			$ 1,500
Amount Requested			$15,000

Reference/Bibliography:

American Public Health Association; American Water Works Association; and Water Environment Federation (1999) *Standard Methods for the Examination of Water and Wastewater, 20th ed.; Washington, D.C.*

Boyle Engineering Corporation (2008) East Mulloch Drainage District Facility Analysis Report

Charlotte Harbor National Estuary Program (2007) Hendry Creek Basin Onsite Treatment & Disposal Systems; Implementing a Voluntary Homeowner Management Program *Technical Report 07-2.*

Constanzo, S.D. M.J. O'Donohue and W.C. Dennison (2003) Assessing the seasonal influence of sewage and agricultural nutrient inputs in a subtropical river estuary. *Estuaries 26:857-865.*

Florida Department of Environmental Protection (1993) Draft. Standard Operating Procedures Manual - Benthic macroinvertebrate sampling and habitat assessment methods: 1. Freshwater streams and rivers Contract #WM385. FDER, Tallahassee.

Gill, LW N. O'Luanaigh, P.M. Johnston, B.D.R. Misstear, C. O'Suilleabhain (2009) Nutrient loading on subsoils from on-site wastewater effluent, comparing septic tank and secondary treatment systems, *Water Research, 43(10), 2739-2749.*

Heaton, T.H.E. (1986) Isotopic studies of nitrogen pollution in the hydrosphere and atmosphere: a review *Chemical Geology 59:87-102.*

Neitsch, S.L.; Arnold, J.G.; Kiniry, J.R.; Williams, J.R. (2011) Soil and Water Assessment Tool Theoretical Documentation. Texas Water Resources Institute. Available electronically from http : / /hdl .handle .net /1969 .1 /128050.

Rogers, K.M. (1999) Effects if sewage contamination on macroalgae and shellfish at Moa Point, New Zealand using stable carbon and nitrogen isotopes. *New Zealand Journal of Marine and Freshwater Research 33: 181-188.*

U.S. EPA (2002) Community Culture and the Environment: A guide to understanding a Sense of Place *(EPA 842-B-01-003).*

Withers, PJA L. May, H.P. Jarvie, P. Jordan, D. Doody, R.H. Foy, M. Bechmann, S. Cooksley, R. Dils, N. Deal (2012) Nutrient emissions to water from septic tank systems in rural catchments: Uncertainties and implications for policy, *Environmental Science & Policy, 24: 71-82.*

Nora Egan Demers
Department of Biological Sciences
Florida Gulf Coast University
ndemers@fgcu.edu/239.590.7211

EDUCATION:
PhD: Oregon State University, Corvallis, OR 1996 (Zoology-Comparative Immunology)
M.S: Oregon State University, Corvallis, OR 1993 (Zoology-Comparative Immunology)
B.S. University of Missouri-Rolla, Rolla, MO (Life Sciences)

EMPLOYMENT:
2006- Present Associate Professor of Biology, Florida Gulf Coast University
1997-2005 Assistant Professor of Biology, Florida Gulf Coast University
1997-2000 Biology Program Coordinator

SELECT SCHOLARSHIP:
Select Awarded Grants:
FGCU Professional Development Grant ($1650 participation at the NAAEE, Oakland CA Oct, 2012)
FGCU Professional Development Grant ($750 travel to Best College Teachers Summer Workshop June, 2011)
The Center for Environmental Sustainability and Education Earth Charter mini-grant ($250 June, 2010) (to provide an earth charter inspired lunch to Colloquium students during their service learning experience at Happehatchee Center.
East Mulloch Drainage District Stormwater Restoration and Habitat Improvement: ($8,000) August 2011
East Mulloch Drainage District Stormwater Restoration and Habitat Improvement: ($12,000) October 2010
Charlotte Harbor National Estuary Program Shoreline Stabilization and Habitat Enhancement in the Mulloch Creek Basin 2008 ($3,000)
Watershed Council Nutrient Management Partnership Evaluation of Nitrogen sources in San Carlos Park, Lee County, Florida 2007 ($3100)

Select Publications:
Demers, N.E. (2012) Mulloch Creek Habitat Restoration Initiative, San Carlos Park, FL http://itech.fgcu.edu/faculty/ndemers/East%20Mulloch/index.htm
Demers, N.E. (2012) Structure/Function Correlation In: Laboratory Activities for General Biology I third edition, bluedoor publishing
Demers, N.E. (2011) An Activity to Demonstrate the Genetic Code, Gene Duplication and Divergence. *Journal of College Science Teaching* 40(6)62-64
Demers, N.E. (2009) Structure-Function Lab in a Bag *Journal of College Science Teaching* 39(2)58-60
Demers, N.E. (2008) Using stable $\delta^{15}N$ ratios to help differentiate nitrogen sources within a residential community- another tool for the TMDL toolbox. Final report prepared for the *Watershed Council of Southwest Florida.*
Savarese, M., **Demers, N.,** Everham, E. M., Volety, A., and Kakareka, J. 2004. Scientific Process: an interdisciplinary core natural science course as a mechanism for faculty collaboration. Geological Society of America Abstracts with Programs 36(5):444.
Demers, N.E. (2003) Issues in Science and Technology: Student driven inquiry directed by the Scientific Process. *Journal of College Science Teaching* 23:330-337
Demers, N.E. (1993) The acute effects of stress on plasma proteins of rainbow trout, *Oncorhynchus mykiss,* M.S. Thesis, Oregon State University.

Select Presentations:

Demers, Nora Egan (November, 2012) Magnetic water models for understanding chemical bonding (2012 FCR-STEM conference , St. Petersburg, FL)

Demers, Nora Egan and Coventry-Payne, L (Oct, 2012) Simple Solutions Profound Results-changing Attitudes through Conservations (North American Association for Environmental Education, Oakland, CA)

Demers, Nora Egan (September, 2011) The Promising Syllabus; What the Best College Teachers Do Bain workshop at FGCU

Demers, Nora Egan (March 2011) Stable $\delta^{15}N$ Ratios to Examine sources of Nitrogen within a Residential Community (Charlotte Harbor National Estuary Program Watershed Summit, Punta Gorda, FL)

Demers, Nora E (September, 2009) Using stable δN^{15} ratios to help differentiate nitrogen sources within a residential community and initiatives to improve the East Mulloch Drainage District (Report to the Estero Bay Agency on Bay Management, Fort Myers, FL

Demers, Nora Egan, Edwin Everham, Michael Savarese, Brian Bovard, Anne Hartley, Joseph P. Kakareka, Ai Ning Loh, Brenda Brooks, CREW Land and Water Trust, John Cassani, Lee County Hyacinth Control, and Mike Owen, Fakahatchee Strand Preserve State Park, (March, 2009) *Preparing Citizen Scientists via Science Research Opportunities in Southwest Florida (Part A) K-12 and Post-Secondary Education (Part B) Community Education* (SENCER Washington DC Poster Session)

Conference planning and delivery:

Estero Bay Economic Value of Conservation Lands Cela Tega FGCU (Nov 2011). http://itech.fgcu.edu/faculty/ndemers/CelaTega%202011/index.htm

Estero Bay Watershed Public Symposium and Art Exhibit, FGCU (Sept, 2009). http://itech.fgcu.edu/faculty/ndemers/EsteroWatershedSymp09/index.htm

Estero Bay Land Acquisition Cela Tega FGCU (Dec, 2008). http://itech.fgcu.edu/faculty/ndemers/CelaTega2008/acquindex.htm

Estero Bay Land Management Cela Tega FGCU (June, 2008). http://itech.fgcu.edu/faculty/ndemers/CelaTega2008/index.htm

Professional Organizations membership:

- American Association for the Advancement of Science (AAAS)
- National Science Teachers Association (NSTA)
- Association for Biology Laboratory Education (ABLE)

Supervised student research:

Amanda Maltz, B.A. Environmental Studies (2011) An investigation of ghost crab (*Ocypode quadrata*) burrow density as a biological indicator of habitat degradation on two urban beaches in southwest Florida.

Alison Blanco M.A. in Environmental Science (2009) *The effect of fire on Florida Panther den site.*

Tanesha Brown B.A. Biology, 2008 *Determination of source of nitrogen pollutants in San Carlos Park, a sub basin of the Estero Bay watershed, Lee County, Florida.*

Narissa Parnell, B.A. Environmental Studies, 2005 *An examination of a population of Gopher Tortoises (Gopherus polyphemus) at Hickey Creek Mitigation Park, Lee County, Florida.*

Jessica Jones, BA Biology (2004) *Comparison of lysozyme levels between apparently healthy and unhealthy dogs and cats.*

Lenore Bishop, B.A. Environmental Studies, 2002 *The population of Gopher Tortoises (Gopherus polyphemus) at Hickey Creek Mitigation Park, Lee County, Florida.*

Dr. Anne E. Hartley
Department of Marine & Ecological Sciences
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Fort Myers, FL 33965
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(a) Professional Preparation:
Smith College, B.A. in Economics, 1982

Yale University, School of Forestry and Environmental Studies, M.E.S. in Geographic Information Systems, 1987

Duke University, Ph.D. in Biogeochemistry, 1997

The Ecosystems Center, Marine Biological Laboratory, Postdoctoral Research Associate 1997-99

Universities of Michigan, Indiana and Ohio State (Joint), Postdoctoral Scientist 1999-2003

Indiana University, Postdoctoral Scientist 2002-2003

(b) Appointments:

2010-present Associate Professor, Department of Marine & Ecological Studies, Florida Gulf Coast University

2007-2010 Assistant Professor, Department of Marine & Ecological Studies, Florida Gulf Coast University

2003-2007 Assistant Professor, Department of Environmental Studies, Florida International University

(c) Publications:

Cheng, W.G., H. Sakai, A.E. Hartley, K. Yagi and T. Hasegawa. 2008. Increased night temperature reduces the stimulatory effect of elevated carbon dioxide concentration on methane emission from rice paddy soil. Global Change Biology14(3):644-656.

Cornelissen, J.H.C., P.M. van Bodegom, R. Aerts, T.V. Callaghan, R.S.P. van Logtestijn, J. Alatalo, F.S. Chapin, R. Gerdol, J. Gudmundsson, D. Gwynn-Jones, A.E. Hartley, D.S. Hik, A. Hofgaard, I.S. Jonsdottir, S. Ingibjorg, S. Karlsson, J.A. Klein, J. Laundre, B. Magnusson, A. Michelsen, U. Molau, V.G. Onipchenko, H.M. Quested, S.M. Sandvik, I.K. Schmidt, G.R. Shaver, B. Solheim, N.A. Soudzilovskaia, A. Stenstrom, A. Tolvanen, O. Totland, N. Wada, J.M. Welker and X.Q. Zhao. 2007. Global negative vegetation feedback to climate warming responses of leaf litter decomposition rates in cold biome. Ecology Letters 10(7):619-627.

Reynolds, H.R., K.M. Vogelsang, **A.E. Hartley**, J.D. Bever and P.A. Schultz. 2006. Variable responses of old-field perennials to arbuscular mycorrhizal fungi and phosphorus source. Oecologia 147(2):348-358.

Reynolds, H.R., **A.E. Hartley**, K.M. Vogelsang, J.D. Bever and P.A. Schultz. 2005. Arbuscular mycorrhizal fungi do not enhance nitrogen acquisition and growth of old-field perennials under low nitrogen supply in glasshouse culture. New Phytologist 167(3): 869-880

Hartley, A.E. and W.H. Schlesinger. 2002. Environmental controls on nitrogenase activity in biological crusts of the northern Chihuahuan desert. The Journal of Arid Environments 52(3): 293-304.

Hartley, A.E. and W.H. Schlesinger. 2002. Environmental controls on nitrogenase activity in biological crusts of the northern Chihuahuan desert. The Journal of Arid Environments 52(3): 293-304.

Cornelissen, J.H.C., T.V. Callaghan, J.M. Alatalo, A. Michelsen, E. Graglia, **A.E. Hartley**, D.S. Hik, S.E. Hobbie, M.C. Press, C.H. Robinson, G.H.R. Henry, G.R. Shaver, G.K. Phoenix, D. Gwynn Jones, S. Jonasson, F.S. Chapin III, U. Molau, C. Neill, J.A. Lee, J.M. Melillo, B. Sveinbjörnsson and R. Aerts. 2001. Global change and arctic ecosystems: is lichen decline a function of increases in vascular plant biomass? Journal of Ecology 89: 984-994.

Rustad, L.E., J. Campbell, G.M. Marion, R.J. Norby, M.J. Mitchell, **A.E. Hartley**, J.H.C. Cornelissen, J. Gurevitch and GCTE-NEWS, Network of Ecosystem Warming Studies. 2001. A meta-analysis of the response of soil respiration, net nitrogen mineralization and aboveground plant growth to experimental ecosystem warming. Oecologia 126: 243-262.

Hartley, A.E. and W.H. Schlesinger. 2000. Environmental controls on nitric oxide emission from northern Chihuahuan desert soils. Biogeochemistry 50: 279-300.

Hartley A.E., Neill C., Melillo J.M., Crabtree R., Bowles F.P. 1999. Plant performance and soil N mineralization in response to simulated climate change in subarctic dwarf shrub heath. Oikos 86: 185-194.

(d) <u>Synergistic activities</u>:

Dr. Hartley has served as a reviewer of proposals from the NSF DEB Ecosystems and USDA CRSREES and manuscripts from Ecological Applications, Ecosystems, Journal of Geophysical Research, Hydrobiologia, Ecological Letters, Plant and Soil, Global Change Biology, Journal of Applied Ecology, American Journal of Botany and other journals.

BIOGRAPHICAL SKETCH

SIMEON J. KOMISAR, PhD, EIT

A. Professional Preparation:

Yale University	B.A.,	1974
University of Massachusetts	B.S.C.E.,	1986
University of Massachusetts	M.S. Environmental Engineering	1986
University of Washington	Ph.D., Civil Engineering	1993

B. Appointments:

Associate Professor and Environmental Engineering Program Director, Department of Environmental and Civil Engineering, Florida Gulf Coast University	2008 - present
Undergraduate Program Coordinator, Rensselaer Polytechnic Institute, Dept. of Civil and Environmental Engineering	2002 – 2008
Program Coordinator, Environmental Engineering, Rensselaer Polytechnic Institute, Dept. of Environmental and Energy Engineering and Dept. of Civil and Environmental Engineering	2000 – 2002
Clinical Associate Professor, Rensselaer Polytechnic Institute, Dept. of Environmental and Energy Engineering, Dept. of Civil and Environmental Engineering	1999 – 2008
Assistant Professor, Rensselaer Polytechnic Institute, Dept. of Environmental and Energy Engineering, Dept. of Civil and Environmental Engineering	1993-1999

C. Products:

Environmental Research

1. "Maximizing Domestic Water Availability: A Statistical Model," A. Kohli, **S. J. Komisar**, C. E. Montenegro, **Desalination, Vol. 252, pp 113-119, 2009**
2. "Impacts of Viability and Purification on the Specific Gravity of *Cryptosporidium* Oocysts" P.L. Young and S. J. Komisar, **Water Research, Vol. 39, No. 14, pp 3349-3359, 2005.**
3. "Settling Behavior of Unpurified *Cryptosporidium Oocysts* in Laboratory Settling Columns," Pamela L. Young and **Simeon J. Komisar**, **Environmental Science and Technology**, Vol. 39, No. 8, pp 2636-2644, 2005.
4. "Regulatory role of n-propanol in propylene glycol biomethanization under overload," J. Seok and **S.J. Komisar**, **Water Research**, Vol. 37, No. 7, pp 1515-1526, 2003a.
5. "Integrated Modeling of the Anaerobic Fluidized Bioreactor (AFBR) for Deicing Water Treatment: I. Model Derivation," J. Seok and **S. Komisar**, **J. Environmental Engineering, ASCE**, Vol. 129, pp. 100-109, 2003b.
6. "Integrated Modeling of the Anaerobic Fluidized Bioreactor (AFBR) for Deicing Water Treatment: II. Simulation and Experimental Study," J. Seok and **S. Komisar**, J. Environmental Engineering, ASCE, Vol. 129, pp. 110-122, 2003c.
7. "Sequential kinetic parameter determination of anaerobic propylene glycol degradation in a fluidized bed bioreactor using an optimization technique," Jonghyuk Seok and **Simeon Komisar**, **Biotechnology Letters**, Vol. 24 Issue 19, pp. 1579-1586, 2002.
8. "Heterogeneous Biofilm activities in a segregated fluidized bed bioreactor," Jonghyuk Seok and **Simeon Komisar**, **Biotechnology Letters**, Vol. 24 Issue 13, pp. 1083-1087, 2002.

Pedagogy

9. "Re-Inventing Engineering Education One New School at a Time," S. Blanchard, J. Sweeney, R. O'Neill, L. Zidek and S. Komisar, **Proceedings of the Annual Conference, American Society for Engineering Education**, Louisville, June, 2010.
10. "Development of a Three Course Sequence in Water Resources Engineering," S. Komisar, D. Bondehagen, T. Kunberger and R. O'Neill in **Proceedings of the Annual Conference, American Society for Engineering Education**, Austin, June 2009.
11. "Introduction to Engineering Design through Environmental Engineering Projects," Lupita Montoya and Simeon Komisar, **Proceedings of the Annual Conference, American Society for Engineering Education**, June 2007.
12. "Membrane Based Gas Transfer: An Environmental Engineering Laboratory," J. Kilduff, J. X. Liu and S. J. Komisar**, Water Science and Technology**, Vol. 49, No. 8, pp. 49-56, 2004**.**
13. "Toward a New Paradigm in Teaching Experimental Design and Analysis," S. J. Komisar, G. F. List and T. Zimmie, in **Engineering Mechanics: A Force for the 21st Century, Proceedings of the 12th Engineering Mechanics conference**, La Jolla, CA, May 17-20, 1998, H. Murakami and J Luco (Editors), pp. 865-868.

D. Synergistic Activities:

(1) Research: Co-founder of Keck Water Quality laboratory, a multi-disciplinary research facility at Rensselaer Polytechnic Institute, 1999

(2)Teaching: Developed NSF sponsored (ILI) course in real-time measurement and instrumentation for Civil and Environmental Engineering, 1995- 1998, RPI

(3) Course Development: Developed and taught "ENV 4612C Sustainability in Engineering" 2009 to present, FGCU in collaboration with College of Arts and Sciences, Environmental Studies Program.

(4) Honors and Awards: 2004 R. Hering Medal, Environmental and Water Resources Division, ASCE; 1999 David Darrin Counseling and Mentoring Award, RPI.

E. Collaborators and Other Affiliations:

(1) GRADUATE ADVISORS

(a) Dr. J. F. Ferguson, Professor Emeritus, Dept. Civil and Environmental Engineering, University of Washington, Seattle (Principal PhD advisor at University of Washington)

(b) Dr. Michael Switzenbaum, Associate Dean, Emeritus, College of Engineering, Marquette University (Principal M.S. advisor at University of Massachusetts)

(2) COLLABORATORS

(a) Dr. Donald Duke, Professor, Dept of Marine and Ecological Science, Florida Gulf Coast University

(b) Dr. Anne Hartley, Associate Professor, Dept of Marine and Ecological Science, Florida Gulf Coast University

(c) Dr. J. Kilduff, Associate Professor, Dept. Civil and Environmental Engineering, Rensselaer Polytechnic Institute

(d) Dr. T. Kunberger, Assistant Professor, Environmental and Civil Engineering, FGCU

(3) GRADUATE THESIS AND DISSERTATION SPONSOR

(4 PhD as principal advisor; 22 MS as principal advisor; 8 ME as principal advisor)

SERGE THOMAS, Ph.D.
Assistant Professor, Aquatic ecologist, FGCU, Fort Myers, FL 33965, sethomas@fgcu.edu

RESEARCH QUALIFICATIONS: Shallow aquatic hydrosystems (freshwater, wetlands, marine), micro/macro algal ecology and physiology (photosynthesis), nutrients enrichment in shallow hydrosystems, water quality, hydrosystem restoration & management, water treatment involving green technologies (treatment wetlands and stormwater detention/retention ponds).

EDUCATION: Ph.D. (2000) Department of Biological Oceanology and of Marine Environment, University Paris VI, France.

PROFESSIONAL EXPERIENCE:

2008-[...] Assistant Professor. Dept. of Marine & Ecological Sciences, Florida Gulf Coast University, FL, USA.

PEER REVIEWED PUBLICATIONS RELATED TO PROPOSAL (12 TOTAL):

Thomas S., Dettmar D. In prep. The use of floating islands as a mean to control algal growth in detention ponds: A review. *Imminent submission*

Hall R.O., Thomas S., Gaiser E.E. 2007. Measuring freshwater primary production and respiration. In *Principles and Standards for Measuring Primary Production.* T.J. Fahey and A.K. Knapp, editors. Oxford University Press, New York, USA. 175–203.

PEER REVIEWED REPORTS RELATED TO PROPOSAL (incl. peer reviewed Community Engaged Scholarships*):

*Thomas S. 2013. Bathymetry and sediment characterization of Spring Lake, City of Naples, FL. Streets and Stormwater, City of Naples, FL.

*Thomas S. 2013. Bathymetry and sediment characterization of Lake Manor, City of Naples, FL. Streets and Stormwater, City of Naples, FL.

Thomas S. 2013. Sediment thickness and characterization assessment of 13 ponds located within The Pelican Preserve property. Fort Myers, FL. Subcontracted by http://www.cesecodesigns.com.

Thomas S. 2013. Assessment of the health and of the sediment accumulation of the Lake located within the Town of Village Walk, Naples (1st interim report). Village Walk HOA.

Thomas S. 2013. Bathymetry and sediment characterization of Longshore Lake. Longshore Lake HOA.

Ceilley D., Thomas S. and Everham W. 2012, 11, 10. Lake Trafford limnological assessment. SFWMD Contract B, C, D.

*Anderson W.E., Scinto L.J., Nielsen S., Thomas S., Fugate D., Corbett R. 2011. Assessment of the cycling and compartmentalization of nitrogen and phosphorus in saturated soils, sediments and the water column in Lake Jesup, Florida. St. John's River Water Management District Contract 25044.

*Thomas S. 2009. Lake Apopka Sediment Analyses. St Johns River Water Management District Contract 25378.

*Scinto L.J., Thomas S., Anderson W., Ikenaga M., Sinigalliano C. 2008. Assessment of N2-fixation in Lakes Jesup and Monroe FL. St. John's River Water Management District Contract SK42812.

Scinto L.J., Thomas S. 2008. Monitoring, Assessment, Education, and Management of Aquatic Resources in Miami Lakes, Florida. Final Report submitted to the Town of Miami Lakes, FL. Miami Lakes FL. Special publication SJ2011-SP3.

ORAL PRESENTATIONS AT INTERNATIONAL MEETINGS RELATED TO PROPOSAL

Thomas S., Anderson W., Scinto L., Nielsen S., Fugate D., Corbett R. 2013. Assessment of the cycling and compartmentalization of nitrogen and phosphorus in saturated soils, sediment and the water column in Lake Jesup, Florida. 22nd Annual North American Lake Management Society (NALMS) and 24th Annual Florida Lake Management Society (FLMS) meeting, Daytona Beach, FL. USA.

Thomas S., Scinto L.J., Anderson W., Ikenaga M., Sinigalliano C., Brandt-Williams S. 2008. Assessment of N-2-Fixation in Lakes Jesup and Monroe, Florida. FLMS meeting, Sandestin, Fl, USA.

INVITED ORAL PRESENTATIONS RELATED TO PROPOSAL

Thomas S. (upcoming event in 2013). Algal developments in detention ponds: the good, the bad and the ugly. FGCU Kapnik Center, Naples.

Thomas S. Temporal dynamics of algae in urban ponds. Pond workshop. 2012. FGCU Kapnik Center, Naples.

Thomas S. 2012. Wet detention ponds: Their incapacity to detain pollutants which impacts downstream hydrosystems. Southwest Florida Coastal Watershed Workshop. FGCU, Fort Myers.
Thomas S. 2012. How do stormwater ponds turn turbid green: An ecological perspective. Water Symposium of Florida: Stormwater pond solutions. Bear Paw Country Club, Naples.
Thomas S. 2011. How do retention ponds turn turbid green? Understanding the clear water to turbid water shift of shallow water hydrosystems in South Florida. Rookery Bay, Naples.
Thomas S. 2011. How do retention ponds turn turbid green? Stormwater lake management. Property Owners Association Presidents Meeting, Collier County Comprehensive Planning Services, Naples.
Thomas S. 2011. Eutrophication of shallow retention ponds. South Florida Water Management District, Big Cypress branch, Naples.
Thomas S. 2011. Eutrophication of shallow retention ponds. Greenscape Alliance meeting. Naples Botanical Garden - Kapnick Research & Education Center, Naples.
Scinto L.J., Thomas S., Anderson W.T., Ikenaga M., Fugate D., Corbett R., Brandt-Williams S. Assessment of N2-fixation in Lakes Jesup and Monroe, Florida. 2010. St Johns River Water Management District, Palatka, Fl.
Thomas S. 2007. Monitoring, Assessment, Education and Management of Aquatic Resources in Miami Lakes, Florida. City Hall, Town of Miami Lakes, Fl.

GRANTS AND CONTRACTS RELATED TO PROPOSAL

2012-2014 Thomas S. Health assessment of the Pelican Landing ponds. The Bayside Improvement Community Development District, Coconut Creek, Fl. $35,330.26.
2012-2013 Thomas S. Determining groundwater seepage and subsequent nutrient loading in a detention pond (FGCU campus, Fort Myers, Fl, USA). FGCU-ORSP Internal Grant Proposal, $5,000.
2012-2013 Thomas S. Assessment of the health and of the sediment accumulation of the Lake located within the Town of Village Walk, Naples. Village Walk HOA, Naples, FL. $22,473.
2012-2013 Thomas S. Bathymetry and sediment characterization of Lake Manor, City of Naples, FL. Streets and Stormwater, City of Naples, FL. $9,999.
2012-2013 Thomas S. Bathymetry and sediment characterization of Spring Lake, City of Naples, FL. Streets and Stormwater, City of Naples, FL. $9,746.72.
2012 Thomas S. Bathymetry and sediment characterization of Longshore Lake. Longshore Lake HOA. $6,888.76.
2012 Thomas S. Sediment thickness assessment of 13 ponds located within The Pelican Preserve property. Fort Myers, FL. $1,300.
2010-2011 Thomas S., Fugate D. Assessment of the cycling and compartmentalization of nitrogen and phosphorus in saturated soils, sediments and the water column in Lake Jesup, Florida. FIU subcontract 205002524-02, $17,000.
2009-2010 Ceilley D., Thomas S., Everham W. Lake Trafford limnological assessment. . South Florida Water Management District Contract number B, $25,000.
2008-2010 Thomas, S., Fugate D. Assessment of the cycling and compartmentalization of nitrogen and phosphorus in saturated soils, sediments and the water column in Lake Jesup, Florida. FIU subcontract 205002524-0, $25,501.
2009 Thomas S. Lake Apopka sediment analyses. St Johns River Water Management District Contract 25378, $36,980.

NEWSPAPER ARTICLE RELATED TO PROPOSAL

The waterfront war: Retention ponds have morphed from storm filters to landscape features. 2012. Naples Daily News article 08/10/12.

CURRENT MS GRADUATE MENTEES:

2012-[...] Dana Dettmar, Examining the efficiency of floating islands on detention ponds.
2012-[...] Geoff Rosenaw, Effects of Acute Cold Exposure on freshwater subtropical algae.

CURRENT UNDERGRADUATE MENTEES (30 SINCE DATE OF HIRE IN 2008)

2013 6 students (list available on demand) for various "detention pond". Guided research
Mark Lucius (paid). Examining the nutrient loading through groundwater seepage in a minimally managed detention pond, FGCU campus, Ft. Myers, Fl.

Jan Martijn Meij, Ph.D.
Assistant Professor, Sociology
Florida Gulf Coast University, 10501 FGCU BLVD. S., Mod 1 #30, Fort Myers, FL 33965-6565
Ph. 239-590-1884, jmeij@fgcu.edu

SELECT QUALIFICATIONS: environmental sociology, social inequality, social psychology, popular culture

EDUCATION

Ph.D. 2009 Department of Sociology, Oklahoma State University
Dissertation: Framing Environmental Degradation: The Modern American Environmental Movement and Consumption.
Committee Members: Dr. Elizabeth Caniglia (Chair), Dr. Riley E. Dunlap, Dr. Thomas E. Shriver, Dr Ajay Sukhdial

M.A., 2001 Marketing, Radboud University, Nijmegen, the Netherlands

B.ec., 1999 International Management, Hogeschool Arnhem-Nijmegen, Arnhem, the Netherlands

PROFESSIONAL EXPERIENCE

2011-now **Assistant Professor.** Department of Social and Behavioral Sciences, Florida Gulf Coast University.

2009-11 **Visiting Professor.** Department of Sociology & Anthropology Wells College

2004-09 **PhD Student and Graduate Assistant**. Department of Sociology, Oklahoma State University

2004 **Instructor.** Hogeschool Arnhem & Nijmegen (business school in Netherlands)

RESEARCH EXPERIENCE

Book Manuscripts:

Social Problems. Editor: Jan-Martijn Meij. Cognella Academic Publishers (Publication date: January 2013)

Explorations in Music Sociology: Examining the Role of Music in Social Life. Editors: Sara Towe Horsfall, Texas Wesleyan University, Jan-Martijn Meij, FGCU, Meghan Probstfield, Indian River State College. Under contract with Paradigm (expected publication date: April 30th 2013)

January 11th 2013

CURRICULUM VITAE

JONG-YEOP KIM, Ph.D., P.E.

1. EDUCATION

Ph.D. (Environmental Engineering), December 2006, University of Florida, Gainesville, FL
M.S. (Environmental Engineering), May 2003, Georgia Institute of Technology, Atlanta, GA
B.S. (Environmental Engineering), August 1998, Ajou University, Suwon, Korea

2. ACADEMIC AND PROFESSIONAL EXPERIENCE

2009 (Jan.) – present	**Assistant Professor** Department of Environmental and Civil Engineering, FGCU
2007 (Jan.) – 2008 (Dec.)	**Post-Doctoral Associate and Lecturer** Department of Environmental Engineering Sciences, UF
2005 (Dec.) – 2006 (Dec.)	**Research Assistant** Department of Environmental Engineering Sciences, UF
2003 (May) – 2005 (Dec.)	**Research Assistant** Department of Civil and Environmental Engineering, LSU
2000 (Oct.) – 2003 (May)	**Research Assistant** Department of Civil and Environmental Engineering, GaTech

3. PEER-REVIEWED JOURNAL PUBLICATIONS (* corresponding author)

1. Bolognesi, A., Ciccarello, A., Maglionico, M., **Kim, J.-Y.,** Artina, S., and Sansalone*, J.J. (2012). "Can Surface Overflow Rate Predict Particulate Matter Load Capture for Common Urban Drainage Appurtenances?" ***Journal of Environmental Engineering***, 138(7), 723-733.
2. **Kim*, J.-Y.** and Sansalone, J.J. (2010). "Representation of Particulate Matter COD (Chemical Oxygen Demand) in Urban Source Area Rainfall-Runoff." ***Water Air and Soil Pollution***, 205, 113-132.
3. Sansalone, J.J., Liu, B. and **Kim*, J.-Y.** (2009). "Volumetric Clarifying Filtration of Urban Source Area Rainfall-Runoff." ***Journal of Environmental Engineering,*** 135(8), 609-620.
4. **Kim*, J.-Y.** and Sansalone, J.J. (2008). "Hydrodynamic Separation of Particulate Matter Transported by Source Area Runoff." ***Journal of Environmental Engineering,*** 134(11), 912-922.
5. **Kim*, J.-Y.** and Sansalone, J.J. (2008). "Zeta Potential of Clay-Size Particles in Urban Rainfall-Runoff During Hydrologic Transport." ***Journal of hydrology,*** 356(1-2), 163-173.
6. **Kim*, J.-Y.** and Sansalone, J.J. (2008). "Event-Based Size Distributions of Particulate Matter Transported During Urban Rainfall-Runoff Events." ***Water Research***, 42(10-11), 2756-2768.
7. Sansalone, J.J., **Kim*, J.-Y.** (2008). "Transport of Aggregated Particulate Matter Fractions in Urban Pavement Runoff." ***Journal of Environmental Quality***, 37(5), 1883-1893.
8. Sansalone, J.J. and **Kim*, J.-Y.** (2008). "Suspended Particle Destabilization in Retained Urban Stormwater as a Function of Coagulant Dosage and Redox Conditions." ***Water Research***, 42(4-5), 909-922.
9. Kuang, X., **Kim, J.-Y.,** Gnecco, I., Raje, S., Garofalo, G., and Sansalone*, J.J. (2007). "Particle Separation and Hydrologic Control by Cementitious Permeable Pavement." ***Transportation Research Record: Journal of the Transportation Research Board.*** 2025, 111-117.

4. MANUSCRIPTS IN REVIEW (* corresponding author)

1. **Kim*, J.-Y.** and Sansalone, J.J. (2013) "Representation of Urban Source Area Rainfall-Runoff Metal Load, Partitioning, and Unit Operation Behavior through Differing Particulate Matter Indices." ***Journal of Environmental Management*** (in review).

5. BOOK CHAPTERS

1. **Kim, J.-Y.,** Ma, J., Howerter, K., Garofalo, G., and Sansalone*, J.J. (2007). "Interactions of Phosphorus with Anthropogenic and Engineered Particulate Matter as a Function of Mass, Number and Surface Area." Eds: William James, Kim Irvine, Edward McBean, Robert Pitt and Steven Wright. Chapter 1, *Reliable Modeling of Urban Water Systems, Monograph 16,* Pub. by CHI, Guelph, Canada.

6. RECENT PEER-REVIEWED CONFERENCE PROCEEDINGS (* presenter)

1. [#*]**Kim, J.-Y**., Slater, C., Gil, G. J, and Herold, G. (2013) "Hydrologic and water quality modification of stormwater by interlocking permeable pavers" 2013 International Low Impact Development (LID) Symposium, Saint Paul, Minnesota, August 18-21. (submitted)
2. [#*]Herold, G. Slater, C., Gil, G. J, and **Kim, J.-Y.** (2013)"Examination of Stormwater Quality Modifications by Permeable Interlocking Concrete Pavement Systems" StormCon, The 12th Annual North American Surface Water Quality Conference and Exposition, Myrtle Beach, South Carolina, August 18-22. (submitted)
3. [§#*]**Kim, J.-Y.,** and Sansalone, J.J. (2013) "Multiphase Mixture Separation Efficiency Model for a Hydrodynamic Separator with Cumulative Probabilistic Distribution Functions" 10th International Conference on Multiphase Flow, Jeju, Korea, May 26-31. (accepted)
4. Garofalo, G, Cho, H.-C., Raje, S., Kertesz, R, [§]**Kim, J.-Y.,** and [#*]Sansalone, J.J. (2013) "Physical and Numerical Models of Separation and Washout for Unit Operations" 10th International Conference on Multiphase Flow, Jeju, Korea, May 26-31. (accepted)
5. [§]**Kim, J.-Y.,** Ying, G, Zhang, H, Raje, S., Kertesz, R, and [#*]Sansalone, J.J.(2013) "Separation of Particle Distributions Transported During Transient Runoff Events" 10th International Conference on Multiphase Flow, Jeju, Korea, May 26-31. (accepted)
6. [§#*]**Kim, J.-Y**. and Sansalone, J.J. (2012). "Field evaluation of Hydrodynamic separation and settling clarification: Event-Based removal efficiency of metals transported by Urban Stormwater." StormCon, The 11th Annual North American Surface Water Quality Conference and Exposition, Denver, Colorado, August 19-23. http://stormcon.com/mobile/bmp/b41.html
7. [§#*]**Kim, J.-Y** and Sansalone, J.J. (2012). "Destabilization of Suspended Particles in Stormwater Subject to Coagulant Dosage and Detention Redox." StormCon, The 11th Annual North American Surface Water Quality Conference and Exposition, Denver, Colorado, August 19-23. http://stormcon.com/mobile/art/r61.html
8. [§#*]**Kim, J.-Y**. and Sansalone, J.J. (2011). "Evaluation of Surface Overflow Rate Model as a Tool to Predict Particle Separation Efficiency for Hydrodynamic Devices Loaded by Urban Stormwater." StormCon, The 10th Annual North American Surface Water Quality Conference and Exposition, Anaheim, California, August 22-24.
9. [§#*]**Kim, J.-Y.** and Sansalone, J.J. (2011). "Correlation of Water-Quality Parameters With Zeta Potential of Suspended Particles in Urban Stormwater During Rainfall Events." StormCon, The 10th Annual North American Surface Water Quality Conference and Exposition, Anaheim, California, August 22-24.
10. [§#*]**Kim, J.-Y**. and Sansalone, J.J. (2010). "Significance of Using Different Particulate Matter Indices on Representing Particulate-bound Metals Load and BMP performance During Stormwater Events." American Society of Civil Engineers (ASCE), World Environmental and Water Resources Congress 2010, Providence, Rhode Island, May 16-20.

7. HONORS AND AWARDS

1. Columbus Water Works Fellowship at Georgia Institute of Technology sponsored by Columbus Water Works in Columbus, GA. USA, 2000
2. Korea Welfare Times Scholarship ($8,000/yr for 2 years), Seoul Korea, 1999
3. Daewoo Scholarship in the Academy for the excellence at Ajou University, Korea, 1998
4. Ajou Scholarship in the Academy for the excellence at Ajou University, Korea, 1997