

**John J. Ramírez-Avila**  
Assistant Research Professor  
Civil and Environmental Engineering Department  
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## EDUCATION

**Ph.D., Engineering.** Mississippi State University. Mississippi State, MS. 2011.

**M.S., Soils.** University of Puerto Rico. Mayagüez, PR. 2005.

**B.S., Agricultural Engineering.** Universidad Nacional de Colombia. Bogotá D.C., Colombia. 1999.

## APPOINTMENTS

**Assistant Research Professor.** Civil and Environmental Engineering Department, Mississippi State University. Mississippi State, MS. 2014 - Present.

**Adjunct Faculty.** Civil and Environmental Engineering Department, Mississippi State University. Mississippi State, MS. 2012 - 2014.

**Postdoctoral Associate.** Geosystems Research Institute, Mississippi State University, Mississippi State, MS. 2011 - 2014.

**Research Assistant.** Geosystems Research Institute – Civil and Environmental Engineering Department, Mississippi State University. Mississippi State, MS. 2010 - 2011.

**Research Assistant.** Civil and Environmental Engineering Department, Mississippi State University. Mississippi State, MS. 2007 - 2009.

**Volunteer.** National Resources Conservation Service (NRCS) Earth Team Volunteer (Caribbean Area State Office). Mayagüez, PR. 2003 - 2006.

**Research Associate.** Agronomy and Soils Dep. University of Puerto Rico. Mayagüez, PR. 2005 - 2006.

**Research Assistant.** Agronomy and Soils Dep. University of Puerto Rico. Mayagüez, PR. 2002 - 2005.

**Teaching Assistant.** College of Agricultural Sciences. Agronomy and Soils Dep. University of Puerto Rico. Fall 2002.

**Occasional Professor.** College of Engineering. Agricultural Engineering Department. Universidad Nacional de Colombia. Colombia. Spring 2002.

**Technical Assistant.** ASOALBESA Irrigation District Users Association and Corporación INGENIA. Pasca, Colombia. 2000 - 2002.

**Researcher.** Department of Soil and Water Resources - Department of Socioeconomic Studies. Corporación Colombiana de Investigación Agropecuaria (CORPOICA). Tibaitatá, Colombia. 2000 - 2002.

**Researcher in Formation.** Department of Soil and Water Resources. Corporación Colombiana de Investigación Agropecuaria (CORPOICA). Tibaitatá and Villavicencio, Colombia. 1998 - 2000.

**Intern.** Department of Soil and Water Resources. Corporación Colombiana de Investigación Agropecuaria (CORPOICA), Tibaitatá, Colombia. 1997.



## TEACHING

### Courses Taught

CE4583/6583. Stream Reconnaissance. Mississippi State University  
 CE3503. Water Resources Engineering. Spring 2015. Mississippi State University  
 CE8593. Environmental Hydrology. Spring 2014. Mississippi State University  
 CE4523/6523. Open Channel Hydraulics. Fall 2013, 2014, 2015. Mississippi State University  
 CE4513/6513. Engineering Hydrology. Spring 2013, 2014, 2015. Mississippi State University  
 AGRO 3005. Soils. Fall 2002. University of Puerto Rico  
 27710. Elements of Machines. Spring 2002. Universidad Nacional de Colombia  
 27060. Agricultural Workshop. Spring 2002. Universidad Nacional de Colombia

### Directed Individual Studies

Fall 2015. Water Quality Monitoring (2 students)  
 Summer 2015. Introduction to Sedimentation Engineering (1 Student)  
 Summer 2015. Hydrologic Modeling Uncertainty (1 Student)  
 Spring 2015. Nutrient Management (1 Student)  
 Spring 2015, Fall 2015. Watershed Modeling (3 Students)  
 Spring 2015. Bridge Scouring (1 Student)  
 Spring 2014. Rainfall Frequency Analysis (1 Student)  
 Summer 2013. Curve Number Hydrology (1 student)

### Mentoring Activities

Summer 2015. Northern Gulf Institute Diversity Internship Program (1 intern).  
 Spring 2015. Bagley Undergraduate Research Program. (3 Students).  
 Fall 2014. Bagley Undergraduate Research Program. (1 Student).  
 Summer 2014. Northern Gulf Institute Diversity Internship Program (1 intern).  
 Spring 2014. Bagley Undergraduate Research Program. (1 Student).  
 Summer 2013. Northern Gulf Institute Diversity Internship Program (1 intern).  
 Summer 2012. The Bagley College of Engineering Summer Research Program, QUEST (1 intern).  
 Summer 2012. Northern Gulf Institute Diversity Internship Program (1 intern).  
 Fall 2011. Geosystems Research Institute - Universidad Nacional de Colombia. Undergraduate graduation project at MSU (1 student).

### Guest Lecturer.

CE8593. Environmental Hydrology. Spring 2012. Mississippi State University  
 CE4563/6563. Sedimentation Engineering. Fall 2011. Mississippi State University  
 IV International Engineering Seminar. College of Engineering. Universidad Nacional de Colombia. Colombia.  
 Summer 2010.

## PROFESSIONAL MEMBERSHIPS

American Society of Civil Engineers (ASCE) - 2008 - Present  
 Environmental and Water Resources Institute (EWRI) - 2008 - Present  
 American Society of Agricultural and Biological Engineering (ASABE) - 2003-Present  
 Soil and Water Conservation Society (SWCS) - 2004 - Present  
 American Water Resources Association (AWRA) - 2008 - Present  
 Soil Science Society of America (SSSA) - 2012 - Present  
 The Geological Society of America (GSA) - 2010 – 2013  
 Puerto Rican Society of Agricultural Sciences (SOPCA) – 2003-2006  
 Asociación de Ingenieros Agrícolas de Colombia (ASIAC) - 1997 – Present



## AWARDS AND HONORS

### **Academic and Professional Awards and Recognitions**

2013. Research Associate of the Year. Outstanding Research Award presented by the Geosystems Research Institute. Mississippi State University.
2011. Hispanic Students Association (HSA) Excellence Award for academic performance. MSU.
2011. International Symposium on Erosion and Landscape Evolution. ASABE Sponsored Poster Contest. 1<sup>st</sup> Place.
2011. Northern Gulf Institute Annual Conference. NGI Student Poster Contest. 1<sup>st</sup> Place.
2010. Tau Beta Pi Laureate Award Nominee for exemplary academic performance and leadership skills by the *TBIIMS A*.
2010. American Society of Civil Engineers - Environmental and Water Resources Institute National Student Technical Paper Contest. 1<sup>st</sup> Place.
2010. The Portal, Newsletter of the Northern Gulf Institute, Summer 2010. Student Spotlight
2009. Northern Gulf Institute Annual Conference. Student Paper Contest. 2<sup>nd</sup> Place.
2009. Hispanic Students Association (HSA) Certificate of Appreciation. MSU
2009. Graduate Research Assistant of the Year Nominee. Office of Graduate School, MSU.
- 2009-2011. Graduate Ambassador - Civil and Environmental Eng. Dept. Graduate School. MSU.
1999. Motion of Congratulation. Universidad Nacional de Colombia.
1997. Students Representative. Curricular Committee of the Agricultural Engineering Department (CACIA). Universidad Nacional de Colombia.
1997. Academic Distinction for Service and Leadership. Universidad Nacional de Colombia.

### **Honor Societies Membership**

2014. The Honor Society.org
2013. Order of the Engineer.
2010. Sigma Xi. The Scientific Research Society.
2009. Tau Beta Pi (*TBP*). The Engineering Honor Society.
2008. The Honor Society of Phi Kappa Phi ( $\Phi\Kappa\Phi$ ).
2008. The National Scholars Honor Society.
2005. Gamma Sigma Delta ( $\Gamma\Sigma\Delta$ ). The Honor Society of Agriculture.

### **Scholarships and Fellowships**

2011. Travel Grant Award. Office of the Graduate School. Mississippi State University.
2010. Graduate Research Grant. The Geological Society of America.
2010. Travel Grant Award. Office of the Graduate School. Mississippi State University.
2010. Travel Grant Award. Joint Federal Interagency Conference on Sedimentation and Hydrologic Modeling
- 2009, 2010. Bagley Engineering Graduate Fellowship. College of Engineering. MSU.
2008. Kenneth E. Grant Research Scholarship. Soil and Water Conservation Society (SWCS).
- 2007 - 2009. Kelly Gene Cook Sr. Endowment Scholarship. Civil and Environmental Eng. Dept. MSU.
2004. Atlantea Project Mini-Grant. University of Puerto Rico.
2003. SOPCA Scholarship. Puerto Rican Society of Agricultural Sciences (SOPCA).



## PUBLICATIONS

### *Dissertation, MS Thesis and Graduation Project*

1. **Ramírez-Avila J.J.** 2011. Assessment and prediction of streambank erosion rates in a Southeastern Plains Ecoregion watershed in Mississippi. Mississippi State University. Bagley College of Engineering. Civil and Environmental Engineering Dept. Ph.D. Dissertation. 332 pp.
2. **Ramírez-Avila J.J.** 2005. Phosphorus and sediment transport in runoff under rainfall simulation. University of Puerto Rico. College of Agricultural Sciences, Agronomy and Soils Department. Mayagüez Campus. MS Thesis. 185 pp. (In Spanish).
3. **Ramírez-Avila J.J.** 1999. Comparison of two methods to determine unsaturated soil hydraulic conductivity under unstable conditions (Spanish). Agricultural Engineering Dept. Universidad Nacional de Colombia. Bogotá Campus. Undergraduate Graduation Project. 72 pp.

### *Books*

1. Almansa, E., **J. J. Ramírez A**, J. Burgos G and M. Rodríguez A. 1999. Management of cold weather-crops in small-scale irrigation systems. TAM #1. Corpoica - Inat. Agreement No. 174. 57 pp (In Spanish).
2. Almansa M, E., J. Burgos G, **J. J. Ramírez A** and M. Rodríguez A. 1999. Management of tempered-weather crops in small-scale irrigation systems. TAM #2. Corpoica - Inat. Agreement No. 174. 57 pp (In Spanish).
3. Almansa, E., M. Rodríguez A, **J. J. Ramírez A** and J. Burgos G. 1999. Management of hot-weather crops in small-scale irrigation systems. TAM #3. Corpoica - Inat. Agreement No. 174. 57 pp (In Spanish).
4. Almansa, E., **J. J. Ramírez A**, J. Burgos G and M. Rodríguez A. 1999. On-farm irrigation management in small-scale irrigation systems. TAM #4. Corpoica - Inat. Agreement No. 174. 57 pp (In Spanish).
5. Almansa, E., **J. J. Ramírez A**, J. Burgos G and M. Rodríguez A. 1999. Management of irrigated crops in small-scale irrigation districts. TAM #5. Corpoica - Inat. Agreement No. 174. 174 pp (In Spanish).

### *Journal Peer Reviewed Publications*

1. B.H. Baker, R. Kröger, J.D. Prevost T. Pierce, **J.J. Ramirez-Avila**, J.M. Prince Czarnecki, D. Faust, C. Flora. 2015. A field scale investigation of nutrient and sediment reduction efficiencies of a low-technology best management practice: low-grade weirs. In Review: Submitted to Ecological Engineering Journal.
2. Radcliffe, D. E., Reid, D. K., Blomback, K., Bolster, C. H., Collick, A. S., Easton, Z. M., Francesconi, W., Fuka, D. R., Johnsson, H., King, K., Larsbo, M., Youssef, M. A., Mulkey, A. S., Nelson, N. O., Persson, K., **Ramirez-Avila, J. J.**, Schmieder, F., & Smith, D. R. 2015. Applicability of Models to Predict Phosphorus Losses in Drained Fields: A Review. *Journal of Environmental Quality*. ASA-CSA-SSA. 44(2), 614-628.
3. Kroger, R., Poganski, B, Littlejohn, K. A., **Ramírez-Avila J.J.** 2014. Effectiveness of low-grade weirs for nutrient removal in agricultural landscapes in the Lower Mississippi Alluvial Valley. *Agricultural Water Management*. 131: 79-86.
4. **Ramírez-Avila, J. J.**, D. Sotomayor-Ramírez, G. A. Martínez-Rodríguez and L. R. Pérez-Alegría. 2011. Phosphorus in runoff from two highly weathered soils of the tropics. *Can. J. Soil Sci.* 91(2): 267-277.
5. Sotomayor-Ramírez D., **J. Ramírez-Avila**, E. Mas and G. Martínez. 2008. Erosion and nutrient loss reduction with an alternative planting method for coffee (*Coffea arabica*). *J. Agric. Univ. P.R.* 92(3-4):153-169.
6. Sotomayor-Ramírez, D., G. Martínez, **J. Ramírez-Avila** and E. Mas. 2008. Effectiveness of grass filter strips for runoff nutrient and sediment reduction in dairy-sludge amended pastures. *J. Agric. Univ. P.R.* 92(1-2):1-14.
7. Sotomayor-Ramírez, D., G. A. Martínez, L. Pérez-Alegría, and **J. Ramírez-Avila**. 2006. Off-field transport of phosphorus from an Ultisol under Pasture. *J. Agric. Univ. P.R.* 90(3-4):159-172.



### Conference Peer Reviewed Publications

1. **Ramírez-Avila, J. J.**, Langendoen, E. J., McAnally, W. H., Martin, James L., & Ortega-Achury, S. L. 2015. Quantifying and Modeling Sediment Loads from Streambank Erosion along the Headwaters of Town Creek in Mississippi. In *Proceedings of the SEDHYD 2015 (10th Federal Interagency Sedimentation Conference and 5th Federal Interagency Hydrologic Modeling Conference)*, April 19-23, Reno, Nevada. Paper 164. 12 pp.
2. **Ramírez-Avila, J. J.**, McAnally, W. H., & Ortega-Achury, S. L. 2015. An Approximation of the Sediment Budget for the Tombigbee River and the Mobile River Basins. In *Proceedings of the SEDHYD 2015 (10th Federal Interagency Sedimentation Conference and 5th Federal Interagency Hydrologic Modeling Conference)*, April 19-23, Reno, Nevada. Paper 165. 11 pp.
3. **Ramírez-Avila J.J.**, E. J. Langendoen, W. H. McAnally, J. Martin and S. L. Ortega-Achury. 2011. The Role of Streambank Erosion Contributions to Sediment Loads in the Town Creek Watershed in Mississippi. Ed. Flanagan, D.C., J.C. Ascough II, and J.L. Nieber. *Proceeding of the 2011 International Symposium on Erosion and Landscape Evolution (ISELE)*, Anchorage, Alaska. September 18-21, 2011. Paper 11124. 9 pp.
4. **Ramírez-Avila J.J.**, E. F. Almansa-Manrique, S. L. Ortega-Achury. 2011. Soil erosion and production losses in highly degraded soils of the eastern Savannas of Colombia. 2011 Ed. Flanagan, D.C., J.C. Ascough II, and J.L. Nieber. *Proceeding of the 2011 International Symposium on Erosion and Landscape Evolution (ISELE)*, Anchorage, Alaska. September 18-21, 2011. Paper 11125. 7 pp.
5. **Ramírez-Avila J.J.**, E. J. Langendoen, W. H. McAnally and S. L. Ortega-Achury. 2010. A Sediment Budget for Town Creek Watershed: Suspended Sediment Transport Rates Analysis. In *Proceedings of the 2nd Joint Federal Interagency Conference (9th Federal Interagency Sedimentation Conference and 4th Federal Interagency Hydrologic Modeling Conference)*, June 27-July 1, Las Vegas, Nevada.
6. **Ramírez-Avila, J. J.** 2010. Suspended Sediment Transport in a Southeastern Plains Watershed. Ed. Palmer, Richard N. "World Environmental and Water Resources Congress 2010: Challenges of Change." 19-28 pp. Graduate Students Paper Contest 1<sup>st</sup> Place.
7. **Ramírez-Avila, J. J.**, E. J. Langendoen, W. H. McAnally, J. L. Martin, S. L. Ortega-Achury. 2010. Assessment and estimation of streambank erosion rates in the Southeastern Plains Ecoregion of Mississippi. In *Proceedings of the 2nd Joint Federal Interagency Conference (9th Federal Interagency Sedimentation Conference and 4th Federal Interagency Hydrologic Modeling Conference)*, June 27-July 1, Las Vegas, Nevada.
8. **Ramírez-Avila, J. J.** 2009. Evaluation and prediction of sediment and phosphorus loads within the Town Creek watershed, MS. 2009 Northern Gulf Institute Annual Conference. Student Paper Contest. 2<sup>nd</sup> Place.

### Non-Peer Reviewed Publications

1. **Ramírez-Avila, J. J.**, McAnally, W. H., Tagert, M. L., & Ortega-Achury, S. L. 2014. Regional Rainfall Frequency Analysis and Drought Reduction in the Tombigbee River Basin. 2014 Mississippi Water Resources Conference. Jackson, MS: Mississippi Water Resources Research Institute.
2. Avendaño, J. A., **J.J. Ramírez-Avila**, E.A. Rodriguez. 2012. Application of the models CONCEPTS and BSTEM to optimize and evaluate streambank stabilization designs (In Spanish). *Proceedings of the XX National Seminary of Hydraulic and Hydrology and 1st International Seminar of River and Coastal Restoration*, Barranquilla, Colombia, August 8-10, 2012. 10 pp.
3. Ortega-Achury, S.L., R. Kröger, **J.J. Ramírez-Avila** and J. Diaz. 2012. Evaluation and Validation of a Decision Support System for Selection and Placement of BMPs in the Mississippi Delta. 2012 Mississippi Water Resources Conference, Jackson, MS, April 3-4, 2012. 11 pp.
4. **Ramírez-Avila J. J.**, E. J. Langendoen, W. H. McAnally, J. L. Martin and S. L. Ortega-Achury, 2011. Sediment rating parameters and their implications in the Town Creek Watershed, MS. *Proceeding of the 2011 ASABE annual International Meeting-AIM*, Louisville, Kentucky, August 7-10, 2011. 10 pp.
5. **Ramírez-Avila J. J.**, E. J. Langendoen, W. H. McAnally, J. L. Martin and S. L. Ortega-Achury, 2010. A Sediment Budget for Town Creek Watershed: Preliminary Results from Streambank Erosion Processes and Rates





Assessment. *Proceeding of the 2010 ASABE annual International Meeting-AIM, Pittsburg, Pennsylvania, June 20-23, 2010.* 8 pp.

6. **Ramírez-Avila, J. J.**, E. J. Langendoen, W. H. McAnally, J. L. Martin, and S. L. Ortega-Achury. 2010. *Streambank Erosion Assessment in Southeastern Plains Ecoregion Channels Using in situ Monitoring and Submerged Jet Testing.* Ed. Palmer, Richard N. "World Environmental and Water Resources Congress 2010: Challenges of Change." 1873-1880 pp.
7. **Ramírez-Avila, J. J.**, E. J. Langendoen, W. H. McAnally, J. L. Martin and S. L. Ortega-Achury. 2009. *Identification of Streambank Erosion Processes and Channel Changes in Northeastern Mississippi.* *Proceeding of the 2009 Mississippi Water Resources Conference, Tunica, Mississippi, August 5-7, 2009.*
8. **Ramírez-Avila, J. J.**, D. Sotomayor-Ramírez, G. Martínez-Rodríguez, E. Mas and S. L. Ortega-Achury. 2009. *Grass filter strips evaluation for reducing sediment and nutrient exportation from grasslands under manure applications in Puerto Rico.* *Extended Abstract on the 2009 ASABE annual International Meeting-AIM, Reno, Nevada, June 21-24, 2009.*
9. **Ramírez-Avila, J. J.**, S. L. Ortega-Achury, W. H. McAnally and J. L. Martin. 2009. *Monitoring and prediction of sediment discharges within Town Creek watershed, MS.* *Proceeding of the 2009 ASABE annual International Meeting-AIM, Reno, Nevada, June 21-24, 2009.* 10 pp.
10. Ortega-Achury, S. L., G. Martínez-Rodríguez, D. Sotomayor-Ramírez and **J. J. Ramírez-Avila**. 2009. *Caribbean Phosphorus Index validation and management practices evaluation on fields under manure applications.* *Proceeding of the 2009 ASABE annual International Meeting-AIM, Reno, Nevada, June 21-24, 2009.* 11 pp.
11. Ortega-Achury, S. L., **J. J. Ramírez-Avila**, W. H. McAnally and J. L. Martin. 2009. *Nutrient and sediment production, watershed characterization, and land use in the Town Creek watershed, Mississippi.* *Proceeding of the 2009 ASABE annual International Meeting-AIM, Reno, Nevada, June 21-24, 2009.* 9 pp.
12. **Ramírez-Avila, J. J.**, D. Sotomayor, G. Martínez and L. Pérez. 2004. *Phosphorus losses in runoff under the application of organic and inorganic amendment (In Spanish).* *Poster presentation and Proceedings of the VI Agricultural Engineering Latino American and Caribbean Meeting, San Jose, Costa Rica, November 22-24, 2004.* 12 pp.
13. **Ramírez-Avila, J. J.**, D. Sotomayor, G. Martínez and L. Pérez. 2004. *Estimation of Phosphorus losses under rainfall simulation in an Ultisol (In Spanish).* *Proceedings of the VI Agricultural Engineering Latino American and Caribbean Meeting, San Jose, Costa Rica, November 22-24, 2004.* 11 pp.
14. **Ramírez-Avila, J. J.**, D. Sotomayor, G. Martínez and L. Pérez. 2004. *Soil Phosphorus losses under rainfall simulation from an Ultisol (In Spanish).* *Latino American Soil Science Society Meeting, Cartagena, Colombia September 27 to October 1<sup>st</sup>, 2004.*

### Technical Reports

1. **Ramírez-Avila J.J.**, W. H. McAnally and M. L. Tagert. 2013. *Regional Rainfall Frequency Analysis in the Tombigbee River Basin.* *Research Report #4012.* Geosystems Research Institute. Mississippi State University. 56 pp.
2. **Ramírez-Avila J.J.**, W. H. McAnally and M. L. Tagert. 2013. *Support for a Northeast MS Regional Water Management Plan: Updating the Water Budget for the Tombigbee River Basin.* *Research Report #4013.* Geosystems Research Institute. Mississippi State University. 58 pp.
3. **Ramírez-Avila J.J.** and J.L. Oldham. 2013. *Environmental concerns associated with high phosphorus levels in soils of poultry production areas in south central Mississippi.* *Information Sheet.* Extension Service of Mississippi State University - Geosystems Research Institute.
4. Ortega-Achury, S. L. and **J.J. Ramírez-Avila**. 2012. *Evaluation and validation of a decision support system for selection and placement of BMPs in the Mississippi Delta.* *Civil and Environmental Engineering Department.* Mississippi State University. 45 pp.
5. **Ramírez-Avila, J.J.**, S.L. Ortega-Achury and W. H. McAnally. 2012. *Application of the APEX model to determine water quality assessments in agricultural fields in the Mississippi Delta.* *Research Report #4010.* Geosystems Research Institute. Mississippi State University. 62 pp.



6. **Ramírez-Avila, J.J.** and W. H. McAnally. 2012. *A Sediment Budget for the Tombigbee River and the Mobile River Basins*. Research Report #4011. Geosystems Research Institute-Mississippi State University. 30 pp.
7. McAnally, W. H., V. J. Alarcon, P. Amburn, J. A. Baca, J. A. Ballweber, J. H. Cartwright, G. N. Ervin, JR. E. Jackson, J. Martin, S. L. Ortega-Achury, **J. J. Ramírez-Avila** and G. W. Wilkerson. 2009. *White Paper: Holistic Water Resources Management, a Professional Education Plan*. MS. State University - Northern Gulf Institute.
8. Sotomayor-Ramírez, D., G. Martínez, L. Perez and **J. Ramírez-Avila**. 2005. *Final Project Report. Surface runoff studies using simulated rainfall in Puerto Rico*. Coop. Agreement # 68-7482-2-60Y. 27 pp.
9. **Ramírez-Avila, J.J.**, D. Sotomayor-Ramírez, L. Pérez-Alegría, M. A. Elrashidi, and D. Mays 2004. *Phosphorus export in subwatersheds of the Rio Grande de Arecibo watershed using a method to determine P release for soils. Runoff estimation*. Departamento de Agronomía y Suelos. Universidad de Puerto Rico. Recinto Universitario de Mayagüez. 32 pp.
10. **Ramírez-Avila, J.J.** 2003. *Nutrient loss in soil by water erosion*. Agronomy and Soils Department. University of Puerto Rico, Mayaguez Campus. 17 pp (in Spanish).
11. Ortega-Achury, S.L. and **J.J. Ramírez-Avila**. 2003. *Simulation model conceptualization for groundwater flow in Puerto Rico west coast aquifer (preliminary report)*. Agronomy and Soils Department. University of Puerto Rico, Mayaguez Campus. 22 pp (In Spanish).
12. **Ramírez-Avila, J.J.** 2003. *Phosphorus and sediments loss in soils fertilized with two sources of P*. Agronomy and Soils Department. University of Puerto Rico, Mayaguez Campus. 11 pp (In Spanish).
13. **Ramírez-Avila, J.J.** 2003. *Overview of green beans (Phaseolus vulgaris) fertilization*. Agronomy and Soils Department. University of Puerto Rico, Mayaguez Campus. 41 pp (In Spanish).
14. Almansa, E.F., **J.J. Ramírez** and M. Ramírez. 2001. *Soil productivity losses due to water erosion in the Colombian Orinoquía region (pérdidas de productividad debidas a erosión hídrica laminar en suelos de la Orinoquía colombiana)*. Corpoica. National Program of Soil and Water Resources. 136 pp. Submitted to COLCIENCIAS (In Spanish).
15. **Ramírez-Avila, J.J.** 2001. *Modeling runoff, soil loss and crop productivity for the Eastern Savannas of Colombia*. Corpoica. Socioeconomic Studies National Program. Tibaitatá, Colombia. 22 pp. Submitted to the National Department of Planning Development (In Spanish).
16. **Ramírez-Avila, J.J.** 2001. *Soil erosion cost analysis for the Tolima Triangle irrigation district by using EPIC Model*. Corpoica. Socioeconomics Studies National Program. Tibaitatá, Colombia. 36 pp. Submitted to the National Department of Planning Development (In Spanish).
17. **Ramírez-Avila, J.J.** 2001. *Modeling runoff, soil loss and crop productivity in the Irrigation District "Triángulo del Tolima"*. Corpoica. Socioeconomic Studies National Program. Tibaitatá, Colombia. 18 pp. Submitted to the National Department of Planning Development (In Spanish).
18. Almansa, E.F., **J.J. Ramírez** A., M. Ramírez G. 2001. *Irrigando La Paz*. Working paper and video.

#### **List of oral presentations**

1. Ramirez-Avila, J., Laurens-Vallejo, L., Almansa-Manrique, E., Ortega-Achury, S. Jiang, Y., Hawkins, R. 2015. *Estimation of the runoff curve number using rainfall-runoff data from agricultural systems in the Eastern Savannas of Colombia*. Watershed Management Symposium. Reston, August 5-7, 2015.
2. Ramirez-Avila, J., Osmond, D., Ortega-Achury, S., Bolster, C., Storm, D., Mittelset, A., Allexander, K., Radcliffe, D., Oldham, L., Cabrera, M., Line, D., Locke, M., Sharpley, A. 2015. *Evaluating Analytic and Risk Assessment Tools to Estimate Sediment and Nutrients Losses from Agricultural Lands in the Southern Region of the USA*. Watershed Management Symposium. Reston, August 5-7, 2015.
3. **Ramirez-Avila, J. J.**, Oldham, L., Ortega-Achury, S. L., Gallardo, R., Baker, B., Alexander, K., Locke, M., & Read, J. 2015. *Evaluating Analytic and Risk Assessment Tools in Agricultural Fields of Mississippi*. Mississippi Water Resources Conference. Jackson, MS.
4. Oldham, L., **Ramirez-Avila, J. J.**, & Kingery, W. 2015. *Characteristics of Phosphorus in Agricultural Landscapes*. 2015 Mississippi Water Resources Conference. Jackson, MS April 7 2015.



5. Osmond, D., Fosberg, A., Radcliffe, D., **Ramirez-Avila, J. J.**, Storm, D., Mittelstet, A., & Bolster, C. 2015. Estimation of Phosphorus Loss from Agricultural Land in the Southern Region of the USA Using the APEX, TBET, and APLE Models. 2015 Waste to Worth Conference. Seattle, WA.
6. **Ramirez-Avila, J. J.**, D. E. Radcliffe, D. Osmond, J. L. Oldham. 2014. Using the Apex Model to Support Refinement and Regionalization of Southern P Assessment Tools. 2014 ASA-CSA-SSA International Meeting. Long Beach, CA. Nov. 2-5, 2014.
7. **Ramirez-Avila, J. J.**, Oldham, Ortega-Achury, S. L.; Osmond, D.; Martin, J.; Locke, M.; Read, J. 2014. Refinement and regionalization of phosphorus assessment tools in Mississippi. 2014 Mississippi Water Resources Conference. Jackson, Mississippi, April 1-2, 2014.
8. **Ramirez-Avila, J. J.**, Poganski, B., & Kroger, R. 2013. Effectiveness of Low Grade Weirs to Reduce Sediment and Nutrients Loads in Agricultural Ditches of the Mississippi Delta. 2013 Mississippi Water Resources Conference. Jackson, Mississippi, April 2-3, 2013.
9. **Ramirez-Avila, J. J.**, Oldham, J. L., Kingery, W., Crouse, K., & Ortega-Achury, S. L. 2013. Potential Environmental Risk of the Phosphorus Status in Soils Receiving Poultry Manure Applications in Mississippi. 2013 Mississippi Water Resources Conference. Jackson, Mississippi, April 2-3, 2013.
10. Oldham, L. J., **Ramirez-Avila, J. J.**, Kingery, W., & Jackson, W. 2013. Risk Assessment for Phosphorus Movement in Nutrient Management Planning in Mississippi. 2013 Mississippi Water Resources Conference. Jackson, Mississippi, April 2-3, 2013.
11. Pierce, S., Poganski, B., Kroger, R., Prevost, D., **Ramirez-Avila, J. J.**, Pierce, T., Flora, C., & Brinson, A. 2013. Responses of Nonpoint Source Pollution to Flow-Impediment Structure in Surface-Drained Row Crops. American Water Resources Association, 2013 Spring Specialist Conference, Agricultural Hydrology and Water Quality II. St. Louis, MO, March 25-27, 2013.
12. Maurer, B. and J. J. **Ramirez-Avila**. 2012. The Buttahatchie River; Adapting Stabilization Techniques to Varying Conditions. 2012 Alabama Water Resources Conference, AL Water Resources Institute, Orange Beach, Alabama, September 5-7, 2012.
13. Maurer, B. and J. J. **Ramirez-Avila**. 2012. Developing Quarry Capture Prevention Techniques on the Buttahatchie River. In R.I. Barnhisel (Ed.), 2012 National Meeting of the American Society of Mining and Reclamation. Tupelo, MS: American Society of Mining and Reclamation. June 8-15, 2012.
14. **Ramírez-Avila, J. J.**, S.L. Ortega-Achury, W. H. McAnally, J.L. Martin, J. Diaz. 2012. Runoff Quality Effects of Simulated Conservation Practice Scenarios in a Mississippi Delta's Watershed. 2012 Mississippi Water Resources Conference. Jackson, Mississippi, April 3-4, 2012.
15. Ortega-Achury, S.L., R. Kroger, **J.J. Ramírez-Avila**, W. H. McAnally, J. Diaz. 2012. Evaluation and Validation of a Decision Support System for Selection and Placement of BMPs in the Mississippi Delta. 2012 Mississippi Water Resources Conference. Jackson, Mississippi, April 3-4, 2012.
16. **Díaz-Ramírez J.**, J. Martin, J. J. Ramírez-Avila. 2012. Teaching and Research: The Colombia and Malaysia Connection. 2012 ASEE Southeastern Section Annual Conference, Starkville, MS, April 1-2, 2012.
17. **Ramirez-Avila, J. J.**, & Oldham, J. L. 2012. Potential Environmental Risk of the Phosphorus Status in Soils of the Counties with Major Poultry Production in Mississippi. Revision of the NRCS 590 Nutrient Management Standard for MS. Jackson, MS. (Invited talk)
18. **Ramírez-Avila J. J.**, W. H. McAnally, S. L. Ortega-Achury, and J. L. Martin. 2011. Determining Suspended Sediment Sources and Stages of Channel Evolution for Watersheds within the Ecoregion 65 in Alabama and Mississippi. 2011 Alabama Water Resources Conference, Orange Beach, Alabama, September 8-9, 2011.
19. **Ramírez-Avila, J. J.**, McAnally, W. H., Langendoen, E. J., Ortega-Achury, S. L., & Martin, J. 2011. Changes in Suspended Sediment Transport in the Town Creek Watershed: Interpretation of Sediment Rating Curves. 2011 Northern Gulf Institute Annual Conference, Mobile, Alabama, May 17-19, 2011.
20. Ortega-Achury, S.L., **J.J. Ramírez-Avila**, G.A. Martínez-Rodríguez, D. Sotomayor-Ramírez. 2010. Nutrient losses in runoff from agricultural Systems in tropical areas (In Spanish). 1<sup>st</sup> Seminar of Rational Use of Water in Irrigation Systems, Neiva, Colombia, Nov. 8-12, 2010.





21. **Ramírez-Avila, J. J.**, Sotomayor, D. R., Martinez, G. A., Mas, E., & Ortega-Achury, S. L. 2010. Evaluation of Two Different Widths of Vegetative Filter Strips to Reduce Sediment and Nutrient Concentrations in Runoff from Agricultural Fields. 2010 Mississippi Water Resources Conference, Bay St. Louis, Mississippi, November 3-5, 2010.
22. **Ramírez-Avila, J. J.**, McAnally, W. H., Langendoen, E. J., Ortega-Achury, S. L., & Martin, J. 2010. Rates and Processes of Streambank Erosion along the Principal Channel of the Town Creek Watershed: Implications in a Sediment Budget Development. 2010 Mississippi Water Resources Conference, Bay St. Louis, Mississippi, November 3-5, 2010.
23. **Ramírez-Avila, J. J.**, J. Sharp, W. H. McAnally and S. L. Ortega-Achury. 2009. Sediment Budget Analysis for Town Creek Watershed, MS. 2009 Mississippi Water Resources Conference, Tunica, Mississippi, August 5-7, 2009.
24. **Ramírez-Avila, J. J.**, S. L. Ortega-Achury, W. H. McAnally, and J. L. Martin. 2009. Nutrients and sediments production within Town Creek watershed, MS. GSA Research Symposium. Mississippi State University.
25. **Ramírez-Avila, J. J.**, Ortega-Achury, S. L., McAnally, E. J., & Martin, J. and Diaz, J 2009. Evaluation and prediction of sediment and phosphorus loads within the Town Creek watershed, MS. 2009 NGI Annual Conference.
26. **Ramírez-Avila, J. J.**, E. Almansa-Manrique, M. Ramírez-Gómez, and S. Ortega-Achury. 2008. Assessment of soil and nutrient losses in an Oxisol in the Eastern Savannas of Colombia. 50 Years of Soil and Water Research in a Changing Agricultural Environment Conference. Oxford, Mississippi: USDA-ARS-NSL.
27. **Ramírez-Avila, J. J.**, J. N. Díaz-Ramírez, W. McAnally, and J. L. Martin. 2008. Sediment transport analysis using HEC-RAS 4.0. 38<sup>th</sup> Annual Mississippi Water Resources Conference, Jackson, Mississippi, April 15-16, 2008.
28. Sotomayor Ramírez, D. E. Más, G. Martínez Rodríguez, **J. J. Ramírez-Avila**. 2006. Grass filter strips efficiency for reducing sediment and nutrients in runoff (In Spanish). Centro American Cooperative Program for Crop and Animal Improvement Annual Meeting, Montelimar, Nicaragua, April 2006.
29. Sotomayor D., **J.J. Ramírez-Avila**, G. Martínez, E. Mas. 2005. Evaluation of grass filter strip use in an animal production farm for the reduction of sediment and nutrient losses in runoff (In Spanish). Puerto Rican Society of Agricultural Science Annual Meeting, Guaynabo, Puerto Rico, November 18, 2005.
30. Sotomayor-Ramírez, D. G.A. Martínez, L. Pérez-Alegría, **J. Ramírez-Avila**, and S. Ortega-Achury. 2005. Phosphorus in runoff from agricultural soils of Puerto Rico. Annual Meeting Caribbean Food Crops Society, Le Gosier, Guadeloupe, July 10-16, 2005.
31. **Ramírez-Avila, J. J.**, D. Sotomayor, G. Martínez and L. Pérez. 2004. Determination of the Soil test phosphorus environmental critical level (In Spanish). Puerto Rican Society of Agricultural Science Annual Meeting, Arroyo, Puerto Rico.
32. Sotomayor, D., **J. J. Ramírez-Avila**, G. Martínez and L. Pérez. 2003. Phosphorus transport in an Ultisol amended with two phosphorus sources (In Spanish). XLIX Centro American Cooperative Program for Crop and Animal Improvement Annual Meeting, La Ceiba, Honduras, April 29 to May 3, 2003.
33. **Ramírez-Avila, J. J.**, D. Sotomayor, G. Martínez and L. Pérez. 2003. Transport of phosphorus in a soil amended with mineral and organic source of phosphorus (In Spanish). Puerto Rican Society of Agricultural Sciences Annual Meeting, Guayanilla, Puerto Rico.
34. Almansa, E., O. Argüello, **J. J. Ramírez**, J. Burgos, and F. Obando. 2000. Nutrient losses due to water erosion in Colombian Orinoquía soils. Agrosience and Technology 21th Century (In Spanish).

#### **List of poster presentations**

1. **Ramírez-Avila, J. J.**, Langendoen, E. J., McAnally, W. H., Martin, James L., & Ortega-Achury, S. L. 2015. Quantifying and Modeling Sediment Loads from Streambank Erosion along the Headwaters of Town Creek in Mississippi. SEDHYD 2015 (10th Federal Interagency Sedimentation Conference and 5th Federal Interagency Hydrologic Modeling Conference), April 19-23, Reno, Nevada.



2. **Ramírez-Avila, J. J.,** McAnally, W. H., & Ortega-Achury, S. L. 2015. *An Approximation of the Sediment Budget for the Tombigbee River and the Mobile River Basins. SEDHYD 2015 (10th Federal Interagency Sedimentation Conference and 5th Federal Interagency Hydrologic Modeling Conference), April 19-23, Reno, Nevada.*
3. **Ramírez-Avila, J. J.,** McAnally, W. H., Tagert, M. L. Ortega-Achury, S.L. 2014. *Regional Rainfall Frequency Analysis and drought reduction in the Tombigbee River Basin. 2014 Mississippi Water Resources Conference. Jackson, MS, April 1-2, 2014.*
4. **Ramírez-Avila, J. J.,** Oldham, J. L., Oliveras, M., Ortega-Achury, S. L., & Martin, James L. 2014. *Phosphorus Risk Assessment in Agricultural Fields of the Mississippi Delta. 2013 ASA-CSA-SSA International Meeting. Tampa, FL.*
5. **Ramírez-Avila, J. J.,** McAnally, W. H., & Tagert, M. L. 2013. *Support for a Northeast MS Regional Water Management Plan: Updating the Water Budget for the Tombigbee River Basin. 2013 Mississippi Water Resources Conference. Jackson, MS, April 2-3, 2013.*
6. **Ramírez-Avila, J. J.,** E.J. Langendoen, W. H. McAnally, S.L. Ortega-Achury, J.L. Martin, R. Bingner. 2012. *Assessing and Modeling Sediment Loads from Stream Corridor Erosion along the Town Creek in Mississippi. 2012 Mississippi Water Resources Conference, Jackson, MS, April 3-4, 2012.*
7. **Ramírez-Avila J.J.,** E. J. Langendoen, W. H. McAnally and S. L. Ortega-Achury. 2011. *The Role of Streambank Erosion Contributions to Sediment Loads in the Town Creek Watershed in Mississippi. Proceeding of the 2011 International Symposium on Erosion and Landscape Evolution (ISELE), Anchorage, Alaska. September 18-21, 2011.*
8. **Ramírez-Avila J.J.,** E. F. Almansa-Manrique, S. L. Ortega-Achury. 2011. *Soil erosion and production losses in highly degraded soils of the eastern Savannas of Colombia. Proceeding of the 2011 International Symposium on Erosion and Landscape Evolution (ISELE), Anchorage, Alaska, September 18-21, 2011*
9. **Ramírez-Avila J. J.,** E. J. Langendoen, W. H. McAnally, J. L. Martin and S. L. Ortega-Achury, 2011. *Sediment rating parameters and their implications in the Town Creek Watershed, MS. 2011 ASABE annual International Meeting-AIM, Louisville, Kentucky, August 7-10, 2011.*
10. **Ramírez-Avila, J. J.,** McAnally, W. H., Langendoen, E. J., Ortega-Achury, S. L., & Martin, J. 2011. *Assessment and Prediction of Streambank Erosion Rates in the Town Creek Watershed. 2011 Northern Gulf Institute Annual Conference, Mobile, Alabama, May 17-19, 2011.*
11. **Almansa E.F., Ramírez-Avila J., and Ortega-Achury Sandra.** 2011. *Soil erosion in highly degraded soils (Oxisol) of the Eastern Savannas of Colombia. 2011 ASABE annual International Meeting-AIM, Louisville, Kentucky, August 7-10, 2011*
12. **Ramírez-Avila J.J.,** E. J. Langendoen, W. H. McAnally, S. L. Ortega-Achury, and J. Martin. 2010. *A Sediment Budget for Town Creek Watershed: Suspended Sediment Transport Rates Analysis. 2010 Federal Interagency Sedimentation Conference.*
13. **Ramírez-Avila, J. J.,** E. J. Langendoen, W. H. McAnally, J. L. Martin and S. L. Ortega-Achury. 2009. *Identification of Streambank Erosion Processes and Channel Changes in Northeastern Mississippi. 2009 Mississippi Water Resources Conference, Tunica, MS, August 5-7, 2009.*
14. **Ramírez-Avila, J. J.,** S. L. Ortega-Achury, W. H. McAnally, and J. L. Martin. 2009. *Measurement of stream bank erosion in a Southeastern Plains Ecoregion watershed, MS. 2009 Northern Gulf Institute Annual Conference, Mobile, Alabama, May 20-21, 2009.*
15. **Ramírez-Avila, J. J.,** W. McAnally, J. L. Martin, S. L. and Ortega-Achury. 2008. *Evaluation and prediction of sediment loads within the Town Creek watershed. Poster presentation and Abstract. 50 Years of Soil and Water Research in a Changing Agricultural Environment Conference. Oxford, Mississippi: USDA-ARS-NSL.*
16. **Ramírez-Avila, J. J.,** D. Sotomayor, G. Martínez. 2005. *EPIC model use for sediment and nutrient transport in runoff prediction from an amended soil (In Spanish). Puerto Rican Society of Agricultural Science Annual Meeting, Guaynabo, Puerto Rico, November 18, 2005.*



17. **Ramírez-Avila, J. J., E. F. Almansa.** 2005. *Physical Chemical and biological changes in Colombian Orinoquía soils due to soil water erosion.* ASA-CSSA-SSSA International Annual Meeting, Salt Lake City, UT, November 6-10, 2005.
18. **Ramírez-Avila, J. J., D. Sotomayor, G. Martínez, and L. Pérez.** 2005. *Factors Controlling Soil Test P-Runoff P Concentration Relationship in Tropical Soils.* ASA-CSSA-SSSA International Annual Meeting, Salt Lake City, UT, November 6-10, 2005.
19. **Ramírez-Avila, J. J., D. Sotomayor, L. Pérez and L. Cruz.** 2004. *Runoff estimation in sub-basins of Rio Grande de Arecibo watershed using the Curve Number method (In Spanish).* Puerto Rican Society of Agricultural Science Annual Meeting, Arroyo, Puerto Rico.
20. **Ramírez-Avila, J. J., D. Sotomayor, G. Martínez and L. Pérez.** 2004. *Phosphorus losses under rainfall simulation in an Ultisol in Puerto Rico.* 2004 ASA-CSSA-SSSA International Annual Meeting, Seattle, WA, October 31 to November 4, 2004.
21. **Ramírez-Avila, J. J., D. Sotomayor, G. Martínez and L. Pérez.** 2004. *Phosphorus losses in runoff under the application of organic and inorganic amendments (In Spanish).* VI Agricultural Engineering Latino American and Caribbean Meeting, San Jose, Costa Rica, November 22-24, 2004
22. **Sotomayor, D., G. Martínez, L. Pérez and J. J. Ramírez-Avila.** 2003. *Off-field phosphorus transport from an Ultisol.* 2003 ASA-CSSA-SSSA International Annual Meeting, Denver, Co, October 21-25, 2003.

## OTHER PROFESSIONAL ACTIVITIES

### Professional Committees

- Advisory Committee. Revision of the NRCS 590 Nutrient Management Standard for MS. 2012.
- SERA 17 - Organization to Minimize Phosphorus Losses from Agriculture (2012 - Present).
- SERA 43 - Southern Region Integrated Water Resources Coordinating Committee (2014-Present)
- ASCE-EWRI Curve Number Hydrology Task Committee Member. (2012 - Present).
- ASCE-EWRI Watershed Management Technical Committee Member. (2012 - Present).
- ASABE Pollution by Sediment (SW-224) Technical Committee Member (2011 - Present).
- International Representative. Cooperative Agreement ASABE-ASIAC (2009 - Present).
- Officer. Asociación de Ingenieros Agrícolas de Colombia (ASIAC) (2000 - 2002).

### Journal Reviewer

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|------------------------------------|--|
| • Air, Soil and Water Research     | • Agricultural Engineering International: CIGR Journal |
| • Ecological Engineering           | • Applied Engineering in Agriculture                   |
| • Journal of Environmental Quality | • Transactions of the ASABE                            |
| • Pedosphere                       |  |

### Students Organizations

- Faculty Advisor. MSU Students Chapter Soil and Water Conservation Society (SWCS) (2015-Present)
- Faculty Advisor. Society of Hispanic Professional Engineers. MSU Chapter (2014-Present)
- Founder and President. MSU Students Chapter Soil and Water Conservation Society (SWCS) (2009 - 2011)
- Editor. CONSERVATION Newsletter. SWCS - MSU Students Chapter (2009 - 2011).
- Professional Committee Member. The Engineering Honor Society Tau Beta Pi (TBP) (2009, 2010).
- Founder and Director. Corporación INGENIA (1999 - 2003).
- Students Representative. Asociación de Ingenieros Agrícolas de Colombia (ASIAC) (1998, 1999).
- Students Representative. Curricular Committee of the Agricultural Engineering Department (CACIA). Universidad Nacional de Colombia (1997 - 1999).
- Founder and Coordinator. Students Group INGENIA. Universidad Nacional de Colombia (1997 - 1999).

