

Rafael Omar Tinoco

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EDUCATION

2011 PhD Civil and Environmental Engineering, Cornell University, Ithaca, NY.
2008 MS Civil and Environmental Engineering, Cornell University, Ithaca, NY.
2005 BS Civil Engineering, National Autonomous University of Mexico (UNAM), Mexico City, Mexico.

APPOINTMENTS

2015/08 - Present Assistant Professor, Department of Civil and Environmental Engineering, University of Illinois at Urbana-Champaign, Urbana, IL.
2015/05 - 2015/07 Instructor, School of Civil and Environmental Engineering, Cornell University, Ithaca, NY.
2014/05 - 2014/12 Visiting Instructor, School of Civil and Environmental Engineering, Cornell University, Ithaca, NY.
2012/07 - 2014/05 Postdoctoral Researcher, Environmental Hydraulics Institute, IH Cantabria, University of Cantabria, Santander, Spain (working with Giovanni Coco).
2012/01 - 2012/07 Postdoctoral Associate, Cornell University, Ithaca, NY (working with Edwin A. Cowen).
2011/08 - 2011/12 Instructor, Cornell University, Ithaca, NY
2004/01 - 2005/05 Internship. School of Civil Engineering, National Autonomous University of Mexico (UNAM), Mexico City, Mexico.
2003/04 - 2003/10 Large-scale Structures Laboratory, National Center for Disasters Prevention (CENAPRED), Mexico City, Mexico.

TEACHING EXPERIENCE

University of Illinois at Urbana-Champaign (student evaluations [1-5] are included for the Instructor and for the Course)

Spring 2021	CEE350 Water Resources Engineering (ICES 4.44 Inst / 4.33 Course)
Spring 2021	CEE498EH/GEOG459 Ecohydraulics (ICES 4.67 Inst / 4.44 Course)
Fall 2020	CEE555 Mixing in Environmental Flows (ICES 4.58 Inst / 4.58 Course)
Spring 2020	CEE498EH/GEOG459 Ecohydraulics (ICES 4.67 Inst / 4.33 Course)
Fall 2019	CEE432 Stream Ecology (ICES 3.1 Inst / 3.4 Course)
Spring 2019	CEE498EH/GEOG459 Ecohydraulics (ICES 4.6 Inst. / 4.3 Course)
Fall 2018	CEE555 Mixing in Env. Flows (ICES 4.9 Inst. / 4.9 Course)
Spring 2018	CEE498EH/GEOG459 Ecohydraulics (ICES 4.3 Inst. / 3.6 Course)
Fall 2017	CEE432-Stream Ecology (ICES 3.6 Inst./ 3.6 Course)
Spring 2017	CEE498EH/GEOG459 - Ecohydraulics (ICES 4.8 Inst. / 4.7 Course)
Fall 2016	CEE432-Stream Ecology (ICES 4.0 Inst. / 3.9 Course)
Spring 2016	CEE555-Mixing in environmental flows (ICES 4.3 Inst. / 4.5 Course)

As Instructor at Cornell University

Summer 2015, 2014 & 2012	CEE3310 Fluid Mechanics
Fall 2014	CEE6550 Transport, Mixing and Transformation in the Environment
Spring 2012	BEE5330 Engineering Professionalism (Co-instructor)
Fall 2011	CEE3310 Fluid Mechanics

As Teaching Assistant at Cornell University

Spring 2009, 2008	CEE6370 Experimental Methods in Fluid Dynamics
Fall 2008, 2007	CEE3310 Fluid Mechanics

PUBLICATIONS

Refereed Journal Articles

Submitted (UIUC Students in **bold**):

San Juan, J.E. & Tinoco, R.O. "A Predictor of Turbulent Kinetic Energy for Oscillatory Flows Through Submerged Aquatic Vegetation" Submitted to JGR-Earth Surface – September 19, 2021

Ranjan, P., Mittal, K., & Tinoco, R.O., "Assessing bias in experimental measurements in vegetated flows using high-resolution LES", Submitted to JFM – August 1, 2021

Tseng, C-Y. & Tinoco, R.O., "From Substrate to Surface: A Turbulence-based Model for Gas Transfer across Sediment-water-air Interfaces in Vegetated Streams", Submitted to Water Resources Research (Major revisions – to be resubmitted by November 6)

Published (UIUC Students in **bold**):

2021

27. Jin, C., Coco, G., Tinoco, R.O., **Ranjan, P.**, **San Juan, J.**, Dutta, S., Friedrich, H. & Gong, Z. 2021. "Large-Eddy Simulation of Three-Dimensional Flow Structures Over Wave-generated Ripples", Earth Surf. Process. Landforms. 2021; 46: 1536– 1548. <https://doi.org/10.1002/esp.5120>

26. **You, H.** & Tinoco, R.O., 2021, "Analyzing the response of grass carp larvae to acoustic stimuli using particle tracking velocimetry". Water, 2021, 13(5), 603; <https://doi.org/10.3390/w13050603>

25. **Tseng, C.Y.** and Tinoco, R.O., 2021 A Two - Layer Turbulence - based Model to Predict Suspended Sediment Concentration in Flows with Aquatic Vegetation. Geophysical Research Letters, p.e2020GL091255. <https://doi.org/10.1029/2020GL091255>

24. **Prada, A. F.**, George, A. E., Stahlschmidt, B. H., Jackson, P. R., Chapman, D. C., & Tinoco, R. O. 2021. Using turbulence to identify preferential areas for grass carp (*Ctenopharyngodon idella*) larvae in streams: A laboratory study. Water Resources Research, 57, e2020WR028102. <https://doi.org/10.1029/2020WR028102>

23. Tinoco, R.O., **Prada, A.F.**, George, A.E., Stahlschmidt, B.H., Jackson, P.R., Chapman, D.C., 2020. "Identifying turbulence features hindering swimming capabilities of grass carp larvae (*Ctenopharyngodon idella*) through submerged vegetation". *Journal of Ecohydraulics*. <https://doi.org/10.1080/24705357.2020.1835566>
22. **Strailey, K.K., Osborn R. T.**, Tinoco, R.O., Cienciala, P., Rhoads, B.L., & Suski, C.D., 2020, "Simulated instream restoration structures offer swimming and energetic advantages at high flow velocities", *Canadian Journal of Fisheries and Aquatic Science*. <https://doi.org/10.1139/cjfas-2020-0032>
21. **Tseng, C-Y**, & Tinoco, R.O., 2020, "A model to predict surface gas transfer rate in streams based on turbulence production by aquatic vegetation", *Advances in Water Resources*. <https://doi.org/10.1016/j.advwatres.2020.103666>
20. Jin, C., Coco, G., Tinoco, R.O., Perron, J.T., Myrow, P.M., Huppert, K.L., Friedrich, H., Goldstein, E.B. and Gong, Z., 2020. Investigating the response of wave-generated ripples to changes in wave forcing. *Geomorphology*, p.107229, <https://doi.org/10.1016/j.geomorph.2020.107229>.
19. Yadav, V., Sherly, M.A., **Ranjan, P.**, Tinoco, R.O., Boldrin, A., Damgaard, A., & Laurent, A., 2020, "Framework for quantifying environmental losses of plastics from landfills", *Resources, Conservation & Recycling*. <https://doi.org/10.1016/j.resconrec.2020.104914>

18. **Prada, A.F.**, George, A.E., Stahlschmidt, B.H., Jackson, P.R., Chapman, D.C. and Tinoco, R.O., 2019. Influence of turbulence and in-stream structures on the transport and survival of grass carp eggs and larvae at various developmental stages. *Aquatic Sciences*, 82(1), p.16. doi:10.1007/s00027-019-0689-1
17. Tinoco, R.O., **San Juan, J.**, & Mullarney, J., 2019, "Simplification Bias: Lessons from Laboratory and Field Data on Vegetation-Flow-Sediment Interactions", *Earth Surf. Proces. Landforms*, <https://doi.org/10.1002/esp.4743>.
16. **San Juan, J.**, Veliz-Carrillo, G., & Tinoco, R.O., 2019, "Experimental observations of 3D flow alterations by vegetation under oscillatory flows", *Env. Fluid Mech*. <https://doi.org/10.1007/s10652-019-09672-2>
15. Jin, C., Goldstein E., Zheng, G., Tinoco, R.O., & Coco, G., 2019, "Laboratory experiments on the role of hysteresis, defect dynamics and initial perturbation on wave-generated ripple development", *Estuarine, Coastal and Shelf Science*. - <https://doi.org/10.1016/j.ecss.2019.05.003>

14. **Prada, A.F.**, George, A.E., Stahlschmidt, B.H., Chapman, D.C. and Tinoco, R.O., 2018. Survival and drifting patterns of grass carp eggs and larvae in response to interactions with flow and sediment in a laboratory flume. *PloS one*, 13(12), p.e0208326. DOI: doi.org/10.1371/journal.pone.0208326
13. Salim, S., Pattiaratchi, C., Tinoco, R. O., & Jayaratne, R., 2018, "Sediment resuspension due to near - bed turbulent effects: A deep sea case study on the Northwest Continental Slope of Western Australia". *J. Geophys. Res: Oceans*, 123. <https://doi.org/10.1029/2018JC013819>
12. **Leman A., Holland, M.**, Tinoco, R.O., 2018, "Identifying the dominant physical processes for mixing in full-scale raceway tanks" *Renewable Energy*, 129(A), 616-628. <https://doi.org/10.1016/j.renene.2018.05.087>
11. Tinoco, R. O., & Coco, G., 2018. "Turbulence as the main driver of resuspension in oscillatory flow through vegetation". *Journal of Geophysical Research: Earth Surface*, 123. <https://doi.org/10.1002/2017JF004504>

2017

10. Salim, S., Pattiaratchi, C., Tinoco, R., Coco, G., Hetzel, Y., Wijeratne, S. and Jayaratne, R., 2017. "The influence of turbulent bursting on sediment resuspension under unidirectional currents". *Earth Surface Dynamics*, 5(3), p.399.

2016

9. Tinoco, R.O., & Coco, G., 2016. "A laboratory study on sediment resuspension within arrays of rigid cylinders", *Advances in Water Resources*, 92, 1-9. DOI: 10.1016/j.advwatres.2016.04.003

8. Muriel, D.F., Tinoco, R.O., Filardo, B.P., & Cowen, E.A., 2016. "Development of a novel, robust, sustainable and low cost self-powered water pump for use in free-flowing liquid streams", *Renewable Energy*, 91, 466-476. DOI: 10.1016/j.renene.2016.01.089

2015

7. Tinoco, R.O., Goldstein, E. & Coco, G., 2015. "A data-driven approach as a tool to find physically sound predictors: Application to depth-averaged velocities on flows through submerged arrays of rigid cylinders", *Water Resources Research*, 51(2), 1247-1263. DOI: 10.1002/2014WR016380

2014

6. Garcia, J., Gomez, A.G., Tinoco, R.O., Samano, M.L., Garcia, A. & Juanes, J., 2014. "A 3D model to analyze environmental effects of dredging operations. Application to the Port of Marin, Spain", *Advances in Geosciences*. 39, 95-99. DOI: 10.5194/adgeo-39-95-2014

5. Tinoco, R.O., & Coco, G., 2014. "Observations on the effect of emergent vegetation on sediment resuspension under unidirectional currents and waves.", *Earth Surface Dynamics*, 1, 601-636. DOI: 10.5194/esurf-2-83-2014

2013

4. Coco, G., Zhou, Z., van Maanen, B., Olabarrieta, M., Tinoco, R.O., & Townend, I., 2013. "Morphodynamics of tidal networks: Advances and challenges". *Marine Geology*, 346, 1-16. DOI: 10.1016/j.margeo.2013.08.005

3. Tinoco, R.O. & Cowen, E.A., 2013. "The direct and indirect measurement of boundary stress and drag on individual and complex arrays of elements". *Experiments in Fluids*, 54(4). DOI: 10.1007/s00348-013-1509-3.

2012

2. King, A.T., Tinoco, R.O., & Cowen, E.A., 2012. "A $k - \epsilon$ turbulence model based on the scales of vertical shear and stem wakes valid for emergent and submerged vegetated flows". *Journal of Fluid Mechanics*, 701: 1-39. DOI: 10.1017/jfm.2012.113

2006

1. Jaime, A. & Tinoco, R.O., 2006. "Métodos de valuación de externalidades ambientales provocadas por obras de ingeniería (Valuation of environmental externalities in engineering projects), *Ingeniería, Investigación y Tecnología*, Vol. VII.2, 2006, 105-119, ISSN 1405-7743, in Spanish.

Edited Books

Coco, G., Blanco, B., Olabarrieta, M., and Tinoco, R.O., 8th Symposium on River, Coastal, and Estuarine Morphodynamics (RCEM2013), Book of Abstracts, Santander, Spain, 2013.

Other Publications

Tinoco, R.O., 2011. An experimental investigation of drag and the turbulent flow structure in simulated and real aquatic vegetation. Ph.D. Dissertation, Cornell University.

Tinoco, R.O., 2008. An experimental investigation of the turbulent flow structure in one-dimensional emergent macrophyte patches. M.S. Thesis, Cornell University.

Tinoco, R.O., 2005. Externalidades ambientales en las obras de Ingeniería Civil (Environmental externalities in civil engineering projects). B.S. Thesis, UNAM, in Spanish.

Tinoco, R.O., & Jaime, A., 2005. Evolución de las carreras de Ingeniería Civil (Evolution of the Civil Engineering programs), FICA Book series, 2005, in Spanish.

Tinoco, R.O., & Jaime, A., 2005. La carrera de Ingeniería Civil: una prospectiva (Expectations of the programs of Civil Engineering). Civil Engineering Journal from the CICM, 425(52), September 2004, in Spanish.

CONFERENCE PRESENTATIONS

2021

63. You, H. & Tinoco, R.O. "The effect of obstacle configuration on the transport of neutrally buoyant particles", International Symposium on Environmental Hydraulics, Seoul, Korea July 18-22, 2021.

62. Tseng, C.Y. & Tinoco, R.O., "Laboratory investigation of suspended sediment concentration in flows with aquatic vegetation", International Symposium on Environmental Hydraulics, Seoul, Korea July 18-22, 2021.

2020

61. Tinoco, R.O., Hebert, L.C., Dace, T., & Cockrell, S. "IMAGINE: Identifying Misconceptions of Access of Underrepresented Groups in Engineering", AGU Fall Meeting 2020. December 2020.

60. Tseng, C.Y. & Tinoco, R.O., "Effects of Aquatic Vegetation on Gas Exchange Process Across Air-Water and Sediment-Water Interface", AGU Fall Meeting 2020. December 2020.

59. Prasad, V. & Tinoco, R.O., "From Surface to Substrate: Impact of Floating Vegetation Root-Canopies on Turbulence and Hydrodynamics in Streams", AGU Fall Meeting 2020. December 2020.

58. Ranjan, P. & Tinoco, R.O., "Assessment of Experimental Bias on Laboratory Studies of Vegetated Flows", AGU Fall Meeting 2020. December 2020.

57. San Juan, J. & Tinoco, R.O., "A New Predictor of Turbulence Metrics for Wave-Dominated Flows through Submerged Aquatic Vegetation", AGU Fall Meeting 2020. December 2020.

56. Strailey, K., Tinoco, R.O., Cienciala, P., Thoads, B.L. & Suski, C. "Incorporating Fish Physiology in Stream Restoration: The Influences of Turbulence on Fish Energetics and Positional Choice", AGU Fall Meeting 2020. December 2020.

55. Ranjan, P. & Tinoco, R.O., "Initiation of Motion and Form Drag of Plastic Waste in Landfills", AGU Fall Meeting 2020. December 2020.

54. You, H. & Tinoco, R.O., "Analyzing the response of grass carp larvae to acoustic stimuli using particle tracking velocimetry.", AGU Fall Meeting 2020. December 2020.

53. Yadav, V., Sherly, M.A., Ranjan, P., Prasad, V., Tinoco & Laurent, A., "Clustering cities based on the categorized risks of plastics losses to the environment from landfills", International Conference on Resource Sustainability 2020, Dublin, Ireland June 30-July 2nd 2020 (postponed to July 2021)

52. Tinoco, R.O. & Prada, A.F., "A laboratory study on preferential paths of fish eggs and larvae through submerged vegetation", International Symposium of Ecohydraulics, Lyon, France, November 24 2020 (Virtual).

51. Tinoco, R.O., & Tseng, C-Y. "From substrate to surface: the effect of vegetation-generated turbulence on surficial gas transfer.", River Flow 2020, Delft, Netherlands, July 7-10 2020.

50. Ranjan, P., San Juan, J., Fischer, P. & Tinoco R.O., "Investigation of Hydrodynamics and Sediment Transport within Emergent Vegetation Canopy", River Flow 2020, Delft, Netherlands, July 7-10 2020.

49. Prada, A.F., George, A.E., Stahlschmidt, B.H., Jackson, P.R., Chapman D.C., & Tinoco, R.O., "Using turbulence as a mechanism to control the spread of Grass carp in streams at early life-stages.", Midwest Fish and Wildlife Conference 2020 Springfield IL, January 26-29 2020.

2019

48. Prada, A.F., George, A.E., Stahlschmidt, B.H., Jackson, P.R., Chapman D.C., & Tinoco, R.O., "Invasive carp and their relation with turbulence: How flow turbulence can influence the mortality of grass carp eggs and the swimming behavior of larvae", AGU Fall Meeting, December 2019.

47. Tinoco, R.O., Ranjan, P., & Prada, A.F. "Particle Capture by Aquatic Vegetation Patches: Application to Eggs and Larvae Traveling in Streams", AGU Fall Meeting, December 2019.

46. Tseng, C.Y., & Tinoco, R.O., "Quantifying the Effect of Aquatic Vegetation on Interfacial Gas Transfer in Streams", AGU Fall Meeting, December 2019.

45. Tseng, C.Y., Duemler, K.H., & Tinoco, R.O, "Laboratory Study of Gravity Currents over Submerged Vegetation Canopies", AGU Fall Meeting, December 2019.

44. Tinoco, R.O., Qin, J., Oeij, J., Cienciala, P., Suski, C., Rhoads, B.L., "Fish Response to Coherent Flow Structures: A 3D Characterization of Turbulent Features Affecting Swimming Capabilities of Fish", AGU Fall Meeting, December 2019.

43. San Juan, J. & Tinoco, R.O., "Three-dimensional distribution of vegetation-induced turbulence and its effect on suspended sediment concentration profiles in oscillatory flows", RCEM, Auckland NZ, November 2019.

42. Tinoco, R.O., "Wave-dominated or current-dominated? A study on turbulence-driven sediment resuspension on combined flows through aquatic vegetation", RCEM, Auckland NZ, November 2019.

41. Dutta, S., Ranjan, P., Fisher, P. & Tinoco, R.O., "Turbulent Oscillatory Flow Through Random Array of Emergent Vegetation", RCEM, Auckland NZ, November 2019.

40. Tinoco, R.O., Diaz-Gonzalez, D., Blahnik, L., Freitag, B. & Carlstrom, S., "Thermal Mixing at Vegetated Stream Confluences", 38th IAHR World Congress, September 1-6, 2019, Panama City, Panama.

39. Ranjan, P., Dutta, S., Fischer, P., Tinoco, R.O., "Stratification effects in a sediment-laden vegetated open channel flow", FEF2019, Chicago, March 31-April 4, 2019.

38. Strailey, K., Tinoco, R.O., Cienciala, P., Rhoads, B., Suski, C. "Energetics and swim behavior of fish swimming in turbulent flows". FEF2019, Chicago, March 31-April 4, 2019

37. George, A.E., Stahlschmidt, B.H., Carlson, C.L., Tinoco, R.O., Prada, A.F., & Chapman D.C , Sensory development and navigation in larval grass carp, Midwest Fish and Wildlife Conference 2019, Cleveland OH, January 27-30 2019.

36. Prada, A.F., Tinoco, R.O., George, A.E., Stahlschmidt, B.H. & Chapman D.C, "Location, location, location: Identifying preferential drifting and swimming paths for grass carp eggs and larvae under different flow conditions.", Midwest Fish and Wildlife Conference 2019, Cleveland OH, January 27-30 2019.

2018

35. Tinoco, R.O., Prada, A., George, A., Stahlschmidt, B., & Chapman, D., Grass carp response to flow turbulence: egg mortality and larvae response to altered flows, AGU Fall Meeting 2018.

34. San Juan, J. & Tinoco, R.O., Experimental study of the temporal and spatial distribution of turbulence within vegetation under oscillatory flows, AGU Fall Meeting 2018

33. Ranjan, P., Dutta, S., Fischer, P. & Tinoco, R.O., High-resolution numerical investigation of hydrodynamics and sediment transport within emergent vegetation, AGU Fall Meeting 2018

32. Jin, C., Coco, G., San Juan, J., Tinoco, R.O., & Goldstein, E. Laboratory Experiments on Flow Structure over Transient Ripples Geometry, AGU Fall Meeting 2018.

31. Tinoco, R.O., San Juan, J. "Experimental study of flow-vegetation-sediment interactions: submerged vegetation under oscillatory flow", YCSEC-A 2019, November 9-11, Merida, Mexico.

30. Tinoco, R.O., Mullarney, J., San Juan, J, "Simplification Bias: Lessons From Laboratory and Field Data on Vegetation-Flow-Sediment Interactions", CORE2018, Nanjing, China, October 19-21, 2018.

29. Tinoco, R.O., Spadaro, J., & Oeij, J. The effects of rising water levels on sediment resuspension within aquatic vegetation. Accepted abstract for River Flow, Lyon, France, September 5-8, 2018.

28. George, A.E., Prada, A.F., Tinoco, R.O., Stahlschmidt, B.H. & Chapman D.C. " Hydrodynamic transport of Asian carp eggs and larvae in a flume: implications for sampling", Accepted abstract for 42nd Annual Larval Fish Conference, Victoria, BC, Canada, June 24-28, 2018.

27. Tinoco, R.O., Prada, A., George, A., Stahlschmidt, B., & Chapman, D., "Drifting and swimming response of Asian carp eggs and larvae to different flow conditions in a laboratory flume experiment", Accepted abstract for 42nd Annual Larval Fish Conference, Victoria, BC, Canada, June 24-28, 2018.

26. Tinoco, R.O., Prada, A., George, A., Stahlschmidt, B., & Chapman, D., "Drifting and swimming patterns of Asian carp larvae in altered flows: a laboratory study". Accepted abstract to ISEH, Indiana, June 4-7, 2018.

25. Prada, A., Tinoco, R.O., George, A.E., Stahlschmidt, B., & Chapman, D., "Drifting patterns of Asian carp eggs from spawning to hatching: a laboratory study". Accepted abstract to ISEH, Indiana, June 4-7, 2018.

24. Leman, A. & Tinoco, R.O., "Hydrodynamic Characterization of an Open Racetrack Flume for Algae Cultivation", Accepted abstract to ISEH, Indiana, June 4-7, 2018.

23. Ranjan, P., Dutta, S., Mittal K., Fischer, P. & Tinoco, R.O. "Investigation of oscillatory flow through emergent aquatic-vegetation patches using high-resolution numerical simulations", Accepted abstract to ISEH, Indiana, June 4-7, 2018.

2017

22. Tinoco, R.O., San Juan, J. & Prada, A., "The Effect of Stem- and Canopy-Scale Turbulence on Sediment Dynamics within Submerged Vegetation", Accepted to AGU Fall Meeting, New Orleans, December 2017.

21. J. San Juan and Tinoco, R.O. "Vegetation generated turbulence and 3D coherent structures on oscillatory flows through aquatic vegetation", RCEM2017, Padova, Italy, September 2017.

20. Tinoco, R.O., and Coco, G. "Vegetation impact on bed morphology: Laboratory studies on arrays of rigid cylinders on a sandy bed under combined flows", RCEM2017, Padova, Italy, September 2017.

2016

19. Tinoco, R.O., Goldstein, E.B., & Coco, G. "A Data-Driven Approach to Develop Physically Sound Predictors: Application to Depth-Averaged Velocities and Drag Coefficients on Vegetated Flows", AGU Fall Meeting, San Francisco, CA, December 2016.

18. San Juan Blanco, J.E., Veliz, G. & Tinoco, R.O., "Effects of Vegetation Morphology on Mean Velocity and Turbulence Intensity under Oscillatory Flows and Their Implications for Sediment Transport in Benthic Zone", AGU Fall Meeting, San Francisco, CA, December 2016.

17. Tinoco, R.O., "Vegetation as erosion control on coastal areas: experimental studies", Latin American Hydraulics Congress, Lima, Peru, September 26-30, 2016.

16. Cowen, E.A., Schweitzer, S.A., Citerone, V.R., King, A.T., Johnson, E.D., & Tinoco, R.O. "Exploiting surface turbulence metrics and secondary flows in straight river reaches and open channels", River Flow 2016, Iowa City, USA, July 11-14, 2016.

2015

15. Tinoco, R.O., & Coco, G. "A laboratory study on sediment resuspension within arrays of rigid cylinders", AGU Fall Meeting, San Francisco, CA, December 18, 2015.

14. Tinoco, R.O., & Coco, G. "On the effect of spectral width on the onset of bedforms under combined flows". Accepted abstract for the 9th Symposium on River, Coastal and Estuarine Morphodynamics, RCEM 2015, Iquitos, Peru, September 2015.

2014

13. Muriel, D., Tinoco, R.O., & E.A. Cowen. "The Filardo Pump: a self-powered water pump and its applications for renewable energy", Congreso Latinoamericano de Hidráulica, Santiago, Chile, August 2014.

12. Tinoco, R.O. & Coco, G. "On the onset of sediment motion and resuspension in the presence of submerged cylinders". Ocean Sciences Meeting, Honolulu, Hawaii, February 2014.

2013

11. Tinoco, R.O., Cowen, E.A. & Coco, G. "Flow and drag on submerged obstructions: from flow through aquatic vegetation to sediment transport in communities of benthic organisms". 8th Symposium on River, Coastal and Estuarine Morphodynamics, RCEM 2013, Santander, Spain, June 2013.

2012

10. Coco, G., Olabarrieta, M. van Maanen, B., Zhou, Z., Tinoco, R.O. "Morphodynamics of tidal networks: advances and challenges", Invited talk, AGU Fall Meeting, San Francisco, CA, December 7, 2012.

9. Cowen, E.A., Tinoco, R.O., Muriel, D., Holst-Warhaft, G., Steenhuis, T.S., Filardo, B.P. & Shan, B. "Development of a low-cost, robust, sustainable water-powered pump". Atkinson Center for a Sustainable Future Sustainability Panel, Cornell University, Ithaca, NY, October 26, 2012.

2011

8. Tinoco, R.O. & Cowen, E.A., "Experimental study of vegetated flow: Three-dimensional flow structures and direct measurement of drag in aquatic canopies", Coherent Flow Structures in Geophysical Flows at Earth's Surface, Burnaby, BC, Canada, August 4, 2011.

2009

7. Tinoco, R.O. & Cowen, E.A., "Experimental study of flow through macrophyte canopies", 33rd IAHR Congress, Vancouver, BC, Canada, August 13, 2009.

6. Tinoco, R.O. & Cowen, E.A., "Effects of aquatic vegetation density on low speed flows", 7th International Symposium on Ecohydraulics, Concepción, Chile, January 13, 2009.

2008

5. Tinoco, R.O. & Cowen, E.A., "Mass and momentum transport in low speed flow through flexible aquatic vegetation", 2008 Ocean Sciences Meeting, American Society of Limnology and Oceanography, Orlando, Florida, March 2008.

2007

4. Tinoco, R.O. & Cowen, E.A., "Low speed flows through flexible aquatic vegetation", 2007 Hydraulic Measurements and Experimental Methods Conference, Environmental and Water Resources Institute of the American Society of Civil Engineers, Lake Placid, NY, September 2007.

2005

3. Jaime, A., & Tinoco, R.O., "La carrera de Ingeniería Civil en México (The Civil Engineering programs in Mexico)", 32nd National Engineering Conference, ANFEI, Toluca, Mexico, June 2005.

2. Jaime. A., & Tinoco, R.O., “Enfoque educativo de la investigación en Ingeniería Civil (An educational approach to research in Civil Engineering)”, First Congress on Research in Colleges and Schools, Ciudad Universitaria, UNAM, Mexico City, Mexico, March 2005.

2004

1. Jaime. A., & Tinoco, R.O., “Evolución de la carrera de Ingeniería Civil en México (Evolution of the programs of Civil Engineering in Mexico)”, 31st National Engineering Conference, ANFEI, Tijuana, Mexico, June 2004.

INVITED TALKS

30. Invited Talk, Department of Environmental Sciences Seminar, University of Virginia, November 4th, 2021.

29. Invited Talk, 5th Workshop in Ecohydraulics and Ecohydrology, Humboldt Institute & University of Cordoba, Colombia, March 11, 2021.

28. Invited Talk, Oregon State University Biological and Ecological Engineering Winter Series, February 25th 2021 - Virtual

27. Invited Talk, Oregon State University Water Resources Engineering seminar, February 24th 2021 - Virtual

26. Invited Talk, International Symposium on Ecohydraulics, November 23rd, 2020 - Virtual

25. Invited Keynote Talk, Chilean Congress of Hydraulic Engineering, November 11th, 2020. - Virtual

24. Invited Talk, Texas A&M, Environmental, Water Resources, and Coastal Engineering Seminar. August 31 2020 - Virtual.

23. Invited Talk, Catedra UNESCO-IMTA, July 24th 2020 – Virtual.

22. Invited Talk, Environmental and Water Resources Engineering Seminar Series, University of Texas Austin, October 17th, 2019.

21. Invited Talk, 2019 Water, Wetlands and Watersheds Seminar Series, University of Florida Gainesville, September 25th, 2019.

20. Keynote speaker, 1st International Coastal Resilience Symposium, National Laboratory of Coastal Resilience, Merida, Mexico, June 21st, 2019.

19. Invited talk, 5th Estuary Days Workshop, University of Florida, April 12th, 2019.

18. Invited talk, University of Wisconsin-Madison, April 4th, 2019.

17. Invited talk, Hohai University, Nanjing, China, October 26, 2018.

16. Invited talk, Young Coastal Scientists and Engineers Conference-Americas, Merida, Mexico, November 9, 2018.

15. Invited talk, DREAAM-Big!, Parkland College, June 21st, 2018

14. Forum on "Towards an ecohydrological characterization of Magdalena-Cauca Watershed ", Neiva, October 27, 2017.
13. Keynote speaker, 1st International Congress on Rivers and Wetlands, Neiva, Colombia, October 25-27, 2017.
12. Purdue University, Hydraulic and Hydrologic Engineering Seminar, October 20th, 2017.
11. University of Central Florida, IAHR Student Chapter Seminar, October 12, 2017.
10. Invited talk, 5th Estuary Days Workshop, Brest, France, September 25, 2017.
9. Invited talk, Universidad Javeriana, Bogota, Colombia, November 21, 2016.
8. Mexican Institute of Water Technology (Instituto Mexicano de Tecnologia del Agua), Jiutepec, Mexico, September 21, 2016.
7. Invited talk, IAHR Iowa-Illinois Chapters, University of Illinois at Urbana-Champaign, Urbana, IL, August 18, 2016
6. Coastal Processes Engineering Laboratory (Laboratorio de Ingenieria y Procesos Costeros), Sisal, Mexico, August 8, 2016.
5. School of Environment, The University of Auckland, Auckland, NZ, April 1, 2016.
4. Environmental Hydrology and Hydraulic Engineering Seminar, University of Illinois at Urbana-Champaign, Urbana, IL, January 22, 2016
3. University of Illinois at Urbana-Champaign, Urbana, IL, March 11, 2015.
2. Environmental Fluid Mechanics and Hydrology Seminar, Cornell University, Ithaca, NY, September 4, 2014.
1. Environmental Hydraulics Institute of Cantabria, University of Cantabria, Santander, Spain, September 14, 2012.

GRANTS

Years	Title	Source of funds	Amount	PIs
2022-2026	Pending: Strengthening Resilience of Coastal Green Infrastructure Through Controlled Nutrient Delivery.	NSF ECO-CBET	\$1,576,496	Witmer, Timmons, Krogstad, Tinoco
2022-2023	Pending: Evaluation of Micro-Hydro Units for Army Resilience	CERL	\$159,720	Tinoco
2021-2024	Enemy of my enemy?: Ecohydraulic assessment of interactions of multiple invasive species in the Upper Mississippi River basin.	USGS-IWRC-Aquatic Invasive Species	\$238,013 (+ \$238,016 cost share)	Tinoco
2021-2022	IMAGINE ABCs (Apprenticeship Builds Community)	IDEA - GIANT	\$12,894	Hebert, Tinoco
2021-2022	Efficacy of an Oblique Bubble Screen System as a Two-Way Dispersal Barrier for Invasive Carp	USGS-CESU	\$88,600 (1 st year granted)	Tinoco

			(3-year total of \$245,000)	
2021	Identifying turbulence features that alter trap efficiency of upstream-swimming lamprey	Great Lakes Fishery Commission	\$20,000	Tinoco, Suski
2021	Revamping of experimental facilities at the Hydrosystems Laboratory to enhance ocean and coastal research capabilities.	Grainger College of Engineering Small Equipment Competition 2021	\$11,912	Tinoco, Garcia, Parker
2020-2021	IMAGINE: Identifying Misconceptions on Access of Underrepresented Groups in Engineering	Grainger – Institute for Inclusion, Diversity, Equity and Access (IDEA)	\$12,836	Hebert, Tinoco
2020-2023	Bridging the laboratory-field divide to accurately predict the evolution of coastlines	Marsden Fund NZ	NZD 899,000.00	Mullarney, J (U.Waikato) Tinoco, Nardin, W. (U. Maryland)
2019-2020	Laboratory experiments on Asian carp eggs and larvae: study of control alternatives to increase trapping and mortality rates at early-stages via enhanced flow turbulence levels and altered flow conditions.	USGS-CESU	\$30,000.00	Tinoco
2018-2023	CAREER: From Substrate to Surface: Quantifying the Impact of Aquatic Vegetation on Exchange Processes	NSF CAREER	\$495,596.00	Tinoco
2018-2020	Investigating fish energy use and swimming behavior in complex, turbulent flows to guide habitat management, conservation, and restoration in Lake Michigan tributaries.	IISG	\$190,259.00	Cienciala, Tinoco, Suski, Rhoads
2018-2019	Investigation of Sediment and Nutrient Fluxes through Aquatic Vegetation using Large-scale High-fidelity Turbulence Simulations	NCSA - Blue Waters	Node hours: 480,000 (estimated value \$297,600)	Tinoco, Fischer
2017-2018	High resolution numerical simulation of oscillatory flow and sediment transport through aquatic vegetation: using the highly scalable, higher-order incompressible solver Nek5000- Renewal	NCSA - Blue Waters	Node hours: 200,000 (estimated value \$120,000)	Tinoco, Fischer
2018-2019	Renewal - Laboratory experiments on Asian carp eggs and larvae: characterization of settling velocities, drifting response, and survival rate.	USGS-CESU	\$48,456.00	Tinoco
2017-2018	Laboratory experiments on Asian carp eggs and larvae: characterization of settling velocities, drifting response, and survival rate.	USGS-CESU	\$45,444.00	Tinoco
2017	2017 Instructional Equipment Proposal	CEE - UIUC	\$43,608.30	Tinoco

2016-2017	High resolution numerical simulation of oscillatory flow and sediment transport through aquatic vegetation: using the highly scalable, higher-order incompressible solver Nek5000.	NCSA - Blue Waters	Node hours: 200,000	Tinoco, Fischer
2016	INCITE: Director's Discretionary Resources: Vegetation-sediment-flow interactions: Direct numerical simulations of turbulent oscillatory flow and sediment transport on aquatic ecosystems.	Oak Ridge/Argonne Leadership Computing Facility	Node hours: 50,000 OLCF, 100,000 ALCF	Tinoco

AWARDS

- Student award: Chien-Yung Tseng – awarded Best Young Professional Award at the IAHR 9th International Symposium on Environmental Hydraulics. Seoul, Korea July 2021.
- List of Teachers ranked as excellent by their students, Spring 2017 (CEE498/GEOG459), Fall 2018 (CEE555), Fall 2020 (CEE555)
- National Science Foundation ASSIST Travel Grant, 2016, HENAAC Conference, October 6-9, 2016.
- Augusto Gonzalez Linares Fellowship to attract international talent in strategic areas, 2012-2014, University of Cantabria, Spain.
- Atkinson Center for the Sustainable Future-Rapid Response Fund, 2012, ACSF, Cornell University, USA.
- National Science Foundation Conference Grant, 2011, NSF, USA.
- Cornell Graduate School Conference Grant, 2011, 2009, 2008, 2007. Cornell University, USA.
- Joseph H. DeFrees Fellowship, 2010, 2009. Cornell University, USA.
- Mexican Council of Science and Technology (CONACYT) Fellow, 2005-2010, Mexico.

STUDENT SUPERVISION

PhD: Jorge E. San Juan (2021 – Now Postdoctoral Researcher at St. Anthony Falls Lab), Andres F. Prada (2020 – Now at Illinois State Water Survey), Chien-Yung Tseng (Expected 2021), Pallav Ranjan (Expected 2022), Katey Strailey (Expected 2022), Vindhya Prasad (Expected 2023), Hojung You (Expected 2023).

MS: Andrew Leman (2018), Jieyu Qin (2018), Pallav Ranjan (2018), Juan M. Andrade (Expected 2022).

Undergraduate and non-thesis MS Research: Firas Rababaa (Spring & Fall 2020), Ashley Dominick (Spring 2019), Anna States (Spring 2019), Peter Regan (Spring 2019), Yuehao Shi (Spring 2019), Ryan Osborn (Summer 2018 & Fall 2018), Justin Shen (Spring 2018), Elizabeth Ramos (Spring 2018), Joseph Spadoro (Spring 2018), Melanie Holland (Spring 2016 & Summer 2017), Gerardo Veliz (Summer 2016), Johannes Oeij (Summer 2017 & Fall 2017), Lisha Qu (Fall 2016).

SYNERGISTIC ACTIVITIES

- Convener Special Session on Ecohydraulics, IAHR World Congress 2022, Granada, Spain July 2022.
- Convener and Chair, AGU Fall Meeting 2021 Session: "Ecohydraulics and Ecomorphodynamics: Biophysical Interactions Across Scales in Natural and Engineered Aquatic Systems.", December 2021.
- Short course on Quantitative Analysis of Ecohydraulic Challenges at the Congreso Internacional de Rios y Humedales (International Congress of Rivers and Wetlands), October 25-29, Colombia (in Spanish).

- Member of the Scientific Committee for the International Symposium on Coastal Resources and Environment (CORE) 2021, Nanjing, China October 12-16, 2021.
- Member of the International Scientific Committee for the International Symposium on Environmental Hydraulics, Seoul, Korea, July 2021.
- Panelist for IAHR Coffee Chat on Picture a Scientist!, June 23rd, 2021.
- Elected to the Leadership Team of IAHR Ecohydraulics committee 2020.
- Guest Editor – Geosciences - Special Issue on Ecohydraulics and Morphodynamics.
- Guest Editor – Frontiers in Marine Science – Special issue on “Coastal protection provided by coastal ecosystems: observations and modeling across scales”
- Convener and Chair, AGU Fall Meeting 2020 Session: "Ecohydraulics and Ecomorphodynamics: From basic interactions to management techniques ", December 2020.
- Convener and Chair, AGU Fall Meeting 2020 Session: "#FlumeFriday: Building a Broad and Diverse Online Community to Share Insights from Physical Modeling", December 2020.
- Convener and Chair, AGU Fall Meeting 2019 Session: "Ecohydraulics and Ecogeomorphology: From basic interactions to management techniques ", December 2019.
- Convener and Chair, AGU Fall Meeting 2019 Session: "#FlumeFriday: Building a Broad and Diverse Online Community to Share Insights from Physical Modeling", December 2019.
- Reviewer for: Limnology and Oceanography, J. of Geophysical Research-Earth Surface, Continental Shelf Research, Water, J. of Hydraulic Research, Environments, Fluids, J. of Fluid Mechanics, Water Resources Research, J. Hydraulic Engineering.
- Convener and Chair, Finite Elements in Fluids 2019, Session: Ecohydraulics advances in modeling flow-biota interactions.
- Convener and Chair, AGU Fall Meeting 2018 Session: "Ecohydraulics and Ecogeomorphology: From basic interactions to management techniques ", December 2018.
- Board Member, Scientific Committee, Symposium on River, Coastal and Estuarine Morphodynamics since 2017.
- Short course: Experimental methods in Ecohydraulics: Design, implementation, data analysis and interpretation. 1st International Congress on Rivers and Wetlands, Neiva, Colombia, October 24, 2017.
- Convener and Chair, AGU Fall Meeting 2017 Session: "Ecohydraulics and Ecogeomorphology: From basic interactions to management techniques ", December 2017.
- Panelist, Women in Math, Science and Engineering (WIMSE) Orientation Week, August 23, 2017.
- Convener and Chair, AGU Fall Meeting 2016 Session: "Ecohydraulics: Flow-Biota and Sediment-Biota interactions", December 2016.
- Short course on experimental methods on fluid mechanics and acoustic methods for monitoring suspended sediment in streams, Universidad Javeriana, Bogota, Colombia, November 21-22, 2016
- Engineering Early-Faculty Career Development Symposium, Latinos in Science and Engineering as part of HENAAC Conference, Anaheim CA, October 6-9, 2016.
- Lecturer, First Course on Processes, Measurement and Control of Sediments, Mexican Institute of Water Technology - IMTA, September 19-21, 2016.
- Geotechnical Extreme Events Reconnaissance (GEER) team. Documented the impacts of record and near-record river stages on the performance of levees and flood protection systems in central Illinois and eastern Missouri. January 2016.
- Member of the International Association for Hydro-Environment Engineering and Research (2009 - present) International Association of Hydrological Sciences (2008 - present) and of the American Geophysical Union (2007 - present).
- Local Organizing Committee member of the 8th Symposium on River, Coastal and Estuarine Morphodynamics, Santander, Spain, 2013.
- Workshop leader at the “Expanding Your Horizons” program, aimed at 7th-9th grade young women interested in science, and during the Society of Women Engineers Prospective Candidates Weekend . Cornell University, April 2011.
- Participated at the Summer School on Environmental Fluid Mechanics, held in Santiago, Chile, January 2009.
- International and Engineering Teaching Assistant Development Programs in the Center for Learning and Teaching and at the College of Engineering at Cornell University, Fall 2007.
- Volunteer at the Cornell University Research in Engineering (CURIE) Academy for female high school students. Cornell University, Summer 2006.

DEPARTMENT SERVICE

- Member – Grainger College of Engineering Institute for Inclusion, Diversity, Equity & Access – IDEA.
- Committee to develop a BS program on Environmental Engineering 2021.
- Committee to assess campus allocations to Planet Satellite data, 2020-Present.
- Setting up the Ecohydraulics and Ecomorphodynamics Laboratory (EEL) at Rantoul, IL.
- Faculty search committee, 2017, 2019, 2020.
- Grad Student Leadership Award Review Committee 2019.
- Coordinating EHHE Grad Student Applicants 2018 (Supporting Art Schmidt).
- EHHE Panel - Coordinating Nomination for 2016, 2017 Lorenz G. Straub Award.
- EHHE Panel - Coordinating Nominations for UCOWR Dissertation Award 2016-2017.
- Coordinator of EHHE PhD Qualifying Exam for 2016.
- Coordinator of Department Seminar, CEE595 W Seminar, Fall 2016, Spring 2019, Spring 2020, Fall 2020.
- Reviewer - Campus Research Board Funding application - Spring 2016