PROMOTION CURRICULUM VITAE OF
Arturo S. Leon, Department of Civil and Environmental Engineering

A. EDUCATION

Degree	Institution	Field	Dates
Ph.D.	University of Illinois at Urbana-Champaign, IL	Civil and Environmental Engineering	2002-2007
M.S. (Graduated with honors)	National University of Engineering, Peru	Hydraulic Engineering	1998-2000
C.E. (Civil Engineer Thesis, Outstanding Thesis)	National University of San Cristobal de Huamanga, Peru	Civil Engineering	1998
B.S. (5 year program, Graduated with honors)	National University of San Cristobal de Huamanga, Peru	Civil Engineering	1992-1996

B. FULL-TIME ACADEMIC EXPERIENCE

Institution	Rank	Field	Dates
Florida International University, FL	Associate Professor	Civil and Environmental Engineering	Aug. 2018-Present
University of Houston, TX	Associate Professor	Civil and Environmental Engineering	Sept. 2016-July 2018
Oregon State University, OR	Assistant Professor	Civil and Construction Engineering	Jan. 2011-Aug. 2016
Boise State University, ID	Assistant Professor	Civil Engineering	Sept. 2009-Dec. 2010
University of Illinois at Urbana-Champaign, IL	Post-doctoral Research Associate	Civil and Environmental Engineering	Apr. 2007-Aug. 2009
University of Illinois at Urbana-Champaign, IL	Graduate Research Assistant	Civil and Environmental Engineering	Sept. 2002-Mar. 2007

C. PART-TIME ACADEMIC EXPERIENCE

N/A

D. NON-ACADEMIC EXPERIENCE

Place of Employment	Title	Dates
Knight Piesold Consulting S.A., Lima, Peru	Staff Hydrologic and Hydraulic Engineer	Aug. 2000-July 2002
COSAPI S.A., Lima, Peru	Staff Hydraulic Engineer	Jan 1999-July 2000
Agua y Agro Asesores Asociados S.A.C., Lima, Peru	Assistant Hydraulic Engineer	Jan. 1998-Dec. 1998

E. EMPLOYMENT RECORD AT FIU

Rank	Dates
Associate Professor	Aug. 2018-Present

F. PUBLICATIONS IN DISCIPLINE (*student/post-doc advisees are underlined*)

BOOKS

1. **A. S. Leon** (2009). "Improved Modeling of Transient Flows in Storm-sewer Systems", ISBN 978-3-639-15213-5, VDM Verlag Dr. Müller, Germany.
2. **A. S. Leon** (2000). "Local scour around cylindrical piers in non-cohesive beds (In Spanish)", Distribuidora Lopez G., Lima, Peru.
3. **A. S. Leon** and F. Coronado (1998). "The hydraulic design of a bottom rack-type intake in supercritical regime (In Spanish)", W. H. Editores S.R. Ltda., Lima, Peru.

ARTICLES (REFEREED JOURNAL PAPERS)

1. Asok, H. K., Kostrna, J. R., Ebrahimian, A., and **Leon, A. S.** (2025). CFD Analysis of Microclimatic Variables Beneath Urban Tree Canopies in a Tropical City. *Building and Environment*. Under Review (First round of reviews).
2. Syed, Z., Saadati, Y., Yin, Z., Amini, M. H., and **Leon, A. S.** (2025). Enhancing the Effectiveness of Neural Inversion in Dynamic Environments for Combined Sewer Overflow Reduction. *Journal of Hydrology*. Under Review (First round of reviews).
3. Asok, H. K., Ebrahimian, A., and **Leon, A. S.** (2025). Physics-Informed Neural Networks for Predicting Climatic Variables: Integrating CFD Simulations with Geospatial and Remote Sensing Data. *Environmental Modelling & Software*. Under Review (First round of reviews).
4. Syed, Z., Saadati, Y., Yin, Z., Amini, M. H., and **Leon, A. S.** (2025). Evaluating the Effectiveness of State Actor Representation in CSO Systems for Reinforcement Learning. *Journal of Hydrology*. Under Review (First round of reviews).
5. Asok, H. K., Kostrna, J. R., Ebrahimian, A., and **Leon, A. S.** (2025). Impact of Trees on Thermal Comfort and Microclimate Regulation in Tropical Urban Environments: A Miami based study. *Urban Climate*. Under Review (First round of reviews).
6. Campbell, W. H., Savant, G., **Leon, A. S.**, Yin, Z., and Bian, L. (2025). Modeling Complex Tidal Flow Dynamics in The US Army Corps of Engineers Hydrologic Engineering Center's River Analysis System (HEC-RAS): Assessing HEC-RAS as a Suitable Model in Terms of Accuracy and Speed in Bay and Estuarine Systems. ASCE *Journal of Hydraulic Engineering*. Under Review (Second round of reviews).
7. Yin, Z., Saadati, Y., Syed, Z., Amini, M. H., **Leon, A. S.** (2025). Robust Reinforcement Learning for Sewer System Optimization under Uncertain Rainfall Using a Mixture of Experts to Minimize Combined Sewer Overflows. *Journal of Hydrology*. Under Review (First round of reviews).
8. Sharifi, A., Zanje S. R., Mahyawansi P., **Leon A. S.** and Petrov V. (2025) Understanding The Physical Processes in Storm Sewer Geysers Using Experimental and Numerical Time Traces of Superficial Flow Characteristics. *Journal of Hydraulic Research*. Under Review (*Third round of reviews*).
9. Sharifi, A., Zanje S. R., Mahyawansi P. and **Leon A. S.** (2025) Dynamics of Cyclic and Violent Geyser Eruptions in Storm Sewer Systems: An Experimental and Numerical Approach. *Journal of Hydraulic Research*. Under Review (*Second round of reviews*).
10. Sharifi, A., Zanje S. R., Mahyawansi P. and **Leon A. S.** (2025) A Retrofitting Solution for Geyser Eruptions in Storm Sewer Systems: Experimental and Numerical Analysis. *Journal of Hydraulic Research*. Under Review (*Second round of reviews*).

11. Shi, J., Yin, Z., Myana, R., Ishtiaq, K., John, A., Obeysekera, J., **Leon, A. S**, Narasimhan, G. (2025). Deep Learning Models for Water Stage Predictions in South Florida. ASCE *Journal of Water Resources Planning and Management*. Accepted.
12. Yin, Z., Shi, J., Bian, L., Campbell, W. H., Zanje, S. R., Hu, B., & **Leon, A. S.** (2025). Physics-Informed Neural Network Approach for Solving the One-Dimensional Unsteady Shallow-Water Equations in Riverine Systems. ASCE *Journal of Hydraulic Engineering*, *151*(1), 04024060.
13. Yin, Z., & **Leon, A. S.** (2025). Riverine flood hazard map prediction by neural networks. *HydroResearch*, *8*, 139-151.
14. Zanje, S. R., Mahyawansi, P., Sharifi, A., **Leon, A. S.**, Petrov, V., & Infimovskiy, Y. Y. (2024). Mechanistic Understanding of Field-Scale Geysers in Stormsewer Systems Using Three-Dimensional Numerical Modeling. *Processes*, *13*(1), 32.
15. Wang, L., Bian, L., **Leon, A. S.**, Yin, Z., & Hu, B. (2024). Integrating Policy Instruments for Enhanced Urban Resilience: A Machine Learning and IoT-Based Approach to Flood Mitigation. *Water*, *16*(23), 3364.
16. Hockaday, A. C., **Leon, A. S.**, Patterson, K., & Pennings, S. C. (2024). Freshwater wetlands for flood control: How manipulating the hydroperiod affects plant and invertebrate communities. *PloS one*, *19*(7), e0306578.
17. **Leon, A. S.**, Yin, Z., & Sharifi, A. (2024). A finite volume model for maintaining stationarity and reducing spurious oscillations in simulations of sewer system filling and emptying. *Journal of Hydraulic Research*, *62*(3), 267-282.
18. Mahyawansi, P., Zanje, S. R., Sharifi, A., McDaniel, D., & **Leon, A. S**. (2024). Experimental investigation of storm sewer geyser using a large-scale setup. *Physics of Fluids*, *36*(5).
19. Mahyawansi, P., Zanje, S. R., Sharifi, A., McDaniel, D., & **Leon, A. S.** (2024). Experimental and numerical investigation of a small-scale storm sewer geyser. *Journal of Hydraulic Research*, *62*(1), 25-38.
20. Yin, Z., Saadati, Y., Hu, B., **Leon, A. S.**, Amini, M. H., & McDaniel, D. (2024). Fast high-fidelity flood inundation map generation by super-resolution techniques. *Journal of Hydroinformatics*, *26*(1), 319-336.
21. Yin, Z., Saadati, Y., **Leon, A. S.**, Amini, M. H., Bian, L., & Hu, B. (2024). Forecasting and optimization for minimizing combined sewer overflows using Machine learning frameworks and its inversion techniques. *Journal of Hydrology*, *628*, 130515.
22. Hu, B., Yin, Z., Hamrani, A., **Leon, A. S.**, & McDaniel, D. (2024). Super-resolution-assisted rapid high-fidelity CFD modeling of data centers. *Building and Environment*, *247*, 111036.
23. Chen, D., **Leon, A. S.**, Li, R., & Han, R. (2023). Evaluation of reservoir operation schemes: from rule curve to many-objective optimisation. *Water Management,* 177 (3): 160-172.
24. Qin L., Yang D-S, Weng Y-N, **Leon A. S.**, Shi X-H (2023). Tunnel safety: A pilot study investigating drivers' fixation characteristics when approaching tunnel entrance at different driving speeds. *Lighting Research & Technology*. 2023;55(2):155-169. doi:10.1177/14771535221100261.
25. Qin, L.; He, S.; Yang, D.; **Leon, A. S.** (2022). Proposal for a Calculation Model of Perceived Luminance in Road Tunnel Interior Environment: A Case Study of a Tunnel in China. *Photonics* 2022, *9*, 870. https://doi.org/10.3390/photonics9110870
26. Maleki, H., Safaei, M. R., **Leon, A. S.**, Muhammad, T., & Nguyen, T. K. (2022). Improving shipboard electronics cooling system by optimizing the heat sinks configuration. *Journal of Ocean Engineering and Science*, *7*(5), 498-508.
27. Zanje, S. R., Bian, L., Verma, V., Yin, Z., and **Leon, A. S**. (June 15, 2022). "Siphon Break Phenomena Associated with Pipe Leakage Location." ASME. *J. Fluids Eng*. November 2022; 144(11): 111202. https://doi.org/10.1115/1.4054654.

28. Yin, Z., Matus, M., Zisis, I., **Leon, A. S.** (2022). Numerical Investigation on the Wind-Excited Dynamic Response of Span-Wire Traffic Signal System, *Fluid Mechanics*. Volume 8, Issue 1, June 2022, pp. 16-26. doi: 10.11648/j.fm.20220801.12.
29. Troxler, T.G., Amy C. Clement, Yoca Arditi-Rocha, Gretchen Beesing, Mahadev Bhat, Jessica Bolson, Carissa Cabán-Alemán, Karina Castillo, Olivia Collins, Mayra Cruz, Alan Dodd, Scotney D. Evans, Abigail L. Fleming, Carlos Genatios, Jane Gilbert, Alyssa Hernandez, Cheryl Holder, Maria Ilcheva, Elizabeth Kelly, **Arturo S. Leon**, Joanna Lombard, Katharine J. Mach, Diana Moanga, James F. Murley, Amy Knowles, Jayantha Obeysekera, Loren Parra, Jennifer Posner, Arif Sarwat, Rachel Silverstein, John A. Stuart, Michael C. Sukop, Shimon Wdowinski and Elizabeth Wheaton (2021). A System for Resilience Learning: Developing a Community-Driven, Multi-Sector Research Approach for Greater Preparedness and Resilience to Long-Term Climate Stressors and Extreme Events in the Miami Metropolitan Region. *Journal of Extreme Events*, 08(03). Available at: http://dx.doi.org/10.1142/s2345737621500196.
30. **Leon, A. S.**, Bian, L. and Tang Y. (2021). Comparison of the genetic algorithm and pattern search methods for forecasting optimal flow releases in a multi-storage system for flood control. *Environmental Modelling & Software,* 145, 105198.
31. Bian, L.; Melesse, A. M.; **Leon, A. S.**; Verma, V.; Yin, Z. (2021). A Deterministic Topographic Wetland Index Based on LiDAR-Derived DEM for Delineating Open-Water Wetlands. *Water*, *13(18)*, 2487.
32. Qin, L.; Peña-García, A.; **Leon, A. S.**; Yu, J.-C. (2021). Comparative Study of Energy Savings for Various Control Strategies in the Tunnel Lighting System. *Appl. Sci.* **2021**, *11(14)*, 6372. https://doi.org/10.3390/app11146372.
33. Qin, L., Cao, Q-L., **Leon, A. S.**, Weng, Y-N., Shi, X-H. (2021). "Use of Pupil Area and Fixation Maps to Evaluate Visual Behavior of Drivers inside Tunnels at Different Luminance Levels—A Pilot Study" *Appl. Sci.* 11, no. 11: 5014. https://doi.org/10.3390/app11115014.
34. Chen, Y., Gibson, N., Biswas, A., Li, A., Bashiri, H., Sharifi, E., Fuentes, C., Hoyle, C., **Leon, A. S.**, Skypeck, C.J. (2021). "Valuation of operational flexibility: A case study of Bonneville power administration." *Energy Economics*, 98, 105251. https://www.sciencedirect.com/science/article/pii/S014098832100156O#!.
35. Hosseini, P., Gibson, N., Chen, D., **Leon, A. S.** (2021). "Flexible Decision Variables in Multi-Objective Reservoir Operation." *International Journal of Computer Mathematics*, DOI: 10.1080/00207160.2021.1894418.
36. Chegini, T. and **Leon, A. S.** (2020). Numerical investigation of field-scale geysers in a vertical shaft. *Journal of Hydraulic Research*, 58:3, 503-515.
37. Dadsetani, R.; Sheikhzadeh, G. A.; Safaei, M. R.; **Leon, A. S.**; Goodarzi, M. (2020). Cooling Enhancement and Stress Reduction Optimization of Disk-Shaped Electronic Components Using Nanofluids. *Symmetry*, *12*, 931.
38. **Leon, A. S.**, Tang Y., Qin, L. and Chen, D. (2020). A MATLAB framework for forecasting optimal flow releases in a multi-storage system for flood control. *Environmental Modelling & Software* 125, March 2020, 104618.
39. Qin, L., Shi, X., **Leon, A. S.**, Tong, C., Ding, C. (2020). Dynamic luminance tuning method for tunnel lighting based on data mining of real-time traffic flow, Building and Environment, 176, 106844, https://doi.org/10.1016/j.buildenv.2020.106844.
40. Tang, Y., **Leon, A. S.** & Kavvas, M. L. (2020). Impact of Dynamic Storage Management of Wetlands and Shallow Ponds on Watershed-scale Flood Control. *Water Resour Manage* 34, 1305–1318.
41. Tang, Y., **Leon, A. S.** & Kavvas, M. L. (2020). Impact of Size and Location of Wetlands on Watershed-Scale Flood Control. *Water Resour Manage* 34, 1693–1707.

42. Mehrdad, S., Dadsetani, R., Amiriyoon, A., **Leon**, **A. S.**, Safaei, M. R., Goodarzi, M. (2020) Exergo-Economic Optimization of Organic Rankine Cycle for Saving of Thermal Energy in a Sample Power Plant by Using of Strength Pareto Evolutionary Algorithm II. *Processes* 2020, *8*, 264.
43. Qin, L., Shi, X., and **Leon**, **A. S**. (2020). Luminance calculation method accounting for mesopic vision and fog penetration ability. *Applied Optics*, *59*(3).
44. Qin, L., **Leon**, **A. S.**, Bian, L., Dong, L., Verma, V., and Yolcu, A. (2019). A remotely-operated siphon system for water release from wetlands and shallow ponds. *IEEE Access*, *7*, 157680-157687.
45. Sarafraz, M. M., Dareh Baghi, A., Safaei, M. R., **Leon**, **A. S**., Ghomashchi, R., Goodarzi, M., Lin, C-X. (2019). Assessment of Iron Oxide (III)–Therminol 66 Nanofluid as a Novel Working Fluid in a Convective Radiator Heating System for Buildings. *Energies*, 12(22), 4327.
46. Sarafraz, M. M., Safaei, M. R., **Leon**, **A. S.**, Khaled, U., Goodarzi, M., and Meer, R. (2019). Energetic analysis of different configurations of power plants connected to liquid chemical looping gasification. *Processes, 7*(10), 763.
47. Sarafraz, M. M., Safaei, M. R., **Leon**, **A. S.**, Tlili, I., Alkanhal, T.A., Tian, Z., Goodarzi, M., and Arjomandi, M. (2019). Experimental Investigation on Thermal Performance of a PV/T-PCM (Photovoltaic/Thermal) System Cooling with a PCM and Nanofluid. *Energies*, 12, 2572.
48. **Leon**, **A. S.** (2019). Mechanisms that lead to violent geysers in vertical shafts. *Journal of Hydraulic Research*, *57*(3), 295-306.
49. **Leon**, **A. S.**, Elayeb I. S., Tang, Y. (2019). An experimental study on violent geysers in vertical pipes. *Journal of Hydraulic Research*, *57*(3), 283-294.
50. Chen, D., **Leon**, **A. S.**, Chen, Q., and Li, R. (2018). A derivative-free hybrid optimization model for short-term operation of a multi-objective reservoir system under uncertainty, Water Resources Management, 32(11), 3707–3721.
51. **Leon**, **A. S.** and Gifford-Miears, C. (2018) "Evaluation of the PG Method for Modeling Unsteady flows in Complex Bathymetries." IAHR *Journal of Applied Water Engineering and Research*, 6(2), 139-149.
52. Qin, L., Dong, L. L., Xu, W. H, Zhang L. D, and **Leon**, **A. S.** (2018). Influence of Vehicle Speed on the Characteristics of Driver's Eye Movement at a Highway Tunnel Entrance during Day and Night Conditions: A Pilot Study, *Int. J. Environ. Res. Public Health,* 15(4), 656.
53. **Leon A. S.**, Tang, Y., Chen, D., Yolcu A., Glennie, C., Pennings, S. C. (2018). Dynamic Management of Water Storage for Flood Control in a Wetland System: A Case Study in Texas, *Water*, 10, 325.
54. Chen, D., **Leon**, **A. S.**, Fuentes, C., Gibson, N. L., and Qin, H. (2018). Incorporating filters in random search algorithms for the hourly operation of a multi-reservoir system, *ASCE Journal of Water Resources Planning and Management*. 144(2).
55. Qin, L., Dong, L. L., Xu, W. H, Zhang L. D, and **Leon**, **A. S.** (2017). An intelligent luminance control method for tunnel lighting based on traffic volume, *Sustainability,* 9(12), 2208.
56. Sharifi, E., Bashiri, H., **Leon**, **A. S.**, Chen, Y., Gibson, N. (2017). "Valuation of flexibility for optimal reservoir operation." *Open Water Journal*, 14(2), Article 5.
57. Bashiri, H., Sharifi, E., **Leon**, **A. S.**, Chen, Y., Gibson, N. (2017). "Quantification of Short-term Hydropower Generation Flexibility." *Open Water Journal*, 14(2), Article 6.
58. Chen, D., **Leon**, **A. S.**, Engle, S. P., Fuentes, C., and Chen, Q. (2017). "Offline training for improving online performance of a genetic algorithm based optimization model for hourly multi-reservoir operation." *Environmental Modelling and Software*, 96, 46-57.
59. Chen, D., **Leon**, **A. S.**, Hosseini, P., Gibson, N. L., and Fuentes, C. (2017) "Application of Cluster Analysis for Finding Operational Patterns of Multireservoir System during Transition Period." *ASCE Journal of Water Resources Planning and Management*. 143(8).

60. Oberg N., Schmidt, A. R., Landry, B. J., **Leon, A. S.**, Waratuke, A. R., Mier, J. M. and García, M. H. (2017) "Improved understanding of combined sewer systems using the Illinois Conveyance Analysis Program (ICAP)." *Urban Water Journal*, 14(8), 811-819.
61. **Leon, A. S.** and Goodell C. (2016) ."Controlling HEC-RAS using MATLAB" *Journal of Environmental Modelling and Software*, 84, 339-348.
62. **Leon, A. S.** (2016). "Mathematical models for quantifying eruption velocity in degassing pipes based on exsolution of a single gas and simultaneous exsolution of multiple gases" *Journal of Volcanology and Geothermal Research*, 323, 72–79.
63. Chen, D., Chen, Q., **Leon, A. S.**, and Li, R. (2016). "A Genetic Algorithm Parallel Strategy for Optimizing the Operation of Reservoirs with Multiple Eco-environmental Objectives" *Water Resources Management*, 30(7), 2127–2142.
64. Chen, D., **Leon, A. S.**, Gibson, N., and Hosseini, P. (2016) "Dimension reduction of decision variables for multireservoir operation: A spectral optimization model." *Water Resources Research*, 52(1), 36–51.
65. Lowe, R. J., **Leon, A. S.**, Symonds, G., Falter, J. L., Gruber, R. (2015). "The intertidal hydraulics of tide-dominated reef platforms." Journal of Geophysical Research - Oceans, 120(7), 4845–4868.
66. Nania, L. S., **Leon, A. S.**, and Garcia, M. H. (2015). "Hydrologic-Hydraulic Model for Simulating Dual Drainage and Flooding in Urban Areas: Application to a Catchment in the Metropolitan Area of Chicago." *Journal of Hydrological Engineering*, 20(5), 04014071-1 – 04014071-13.
67. **Leon, A. S.**, Zhu, L. (2014). "A dimensional analysis for determining optimal discharge and penstock diameter in impulse and reaction water turbines." *Renewable Energy*, 71, 609–615.
68. Gibson, N. L., Gifford-Miears, C., **Leon, A. S.**, Vasylkivska, V. S. (2014). "Efficient computation of unsteady flow in complex river systems with uncertain inputs." *International Journal of Computer Mathematics*, 91(4), 781-797.
69. **Leon, A. S.**, Kanashiro, E. A., Valverde, R., and Sridhar V. (2014) "Dynamic Framework for Intelligent Control of River Flooding - Case Study." *ASCE Journal of Water Resources Planning and Management*, 140(2), 258-268.
70. **Leon A. S.**, Kanashiro E. A., and Gonzalez-Castro J. A. (2013), "Fast Approach for Unsteady Flow Routing in Complex River Networks Based on Performance Graphs", ASCE *Journal of Hydraulic Engineering*, 139(3), 284-295.
71. **Leon, A. S.** and Gifford-Miears, C. H. and Choi, Y. (2013) "Well-balanced scheme for modeling open-channel and surcharged flows in steep-slope closed conduit systems." ASCE *Journal of Hydraulic Engineering*, 139(4), 374.
72. **Leon, A. S.**, Oberg N., Schmidt, A. R., and García, M. H. (2011). "The Illinois Transient Model. A state-of-the-art model for simulating the flow dynamics in combined storm-sewer systems". Urban Water Systems, Monograph 19.
73. **Leon, A. S.**, Liu, X., Ghidaoui, M. S., Schmidt, A. R., and Garcia, M. H. (2010) "Junction and drop-shaft boundary conditions for modeling free-surface, pressurized, and mixed free-surface pressurized transient flows." ASCE *Journal of Hydraulic Engineering,* 136(10), 705-715.
74. **Leon, A. S.**, Ghidaoui, M. S., Schmidt, A. R. and Garcia, M. H. (2010) "A Robust two-equation model for transient mixed flows." *Journal of Hydraulic Research*, 48(1), 44-56.
75. **Leon, A. S.**, Ghidaoui, M. S., Schmidt, A. R. and Garcia, M. H. (2009) "Application of Godunov-type schemes to transient mixed flows." *Journal of Hydraulic Research*, 47(2), 147-156.

76. **Leon, A. S.**, Ghidaoui, M. S., Schmidt, A. R. and Garcia, M. H. (2008) "Efficient second-order accurate shock-capturing scheme for modeling one and two-phase water hammer flows." *ASCE Journal of Hydraulic Engineering,* 134(7), 970-983.
77. **Leon, A. S.**, Ghidaoui, M. S., Schmidt, A. R., and García, M. H. (2007). "An efficient finite-volume scheme for modeling water hammer flows." *Contemporary Modeling of Urban Water Systems*, Monograph 15.
78. **Leon, A. S.**, Ghidaoui, M. S., Schmidt, A. R. and Garcia, M. H. (2006) "Godunov-type solutions for transient flows in sewers". *ASCE Journal of Hydraulic Engineering,* 132(8), 800-813.

Journal Discussions:

79. Nania, L. S., Gómez, M., Dolz, J. and **Leon, A. S.** (2010). Discussion to "Experimental and numerical modelling of symmetrical four-branch supercritical cross junction flow" by Emmanuel Mignot, André Paquier, and Nicolas Riviere. *Journal of Hydraulic Research*, 48(6), 826-828. doi:10.1080/00221686.2010.512813.
80. **Leon, A. S.**, and Ghidaoui, M. S. (2010) **Closure** to Discussion of "Application of Godunov-type schemes to transient mixed flows." *Journal of Hydraulic Research*, 48(5), 688-689.
81. **Leon, A. S.**, Ghidaoui, M.S. (2010). Discussion of "Numerical oscillations in pipe-filling bore predictions by shock-capturing models" by J. G. Vasconcelos, S. J. Wright, and P. L. Roe. *J. Hydraulic Engng*., 136(6), 392-393.
82. **Leon, A. S.**, Nania, L. S. and Sridhar, V. (2010). Discussion of "Potential Dangers of Simplifying Combined Sewer Hydrologic/Hydraulic Models" by J. P. Cantone and A. R. Schmidt. *J. Hydrological. Engng*., 15, 587-588.

PROCEEDINGS

Peer-reviewed

All of these papers were presented at their respective conferences. (*) identifies the presentations I made, (†) represents presentations made by students or Post-Doc that I advise(d), and the (§) represents presentations made by my collaborators.

1. Asok, H. K., Kostrna, J. R., Ebrahimian, A., and **Leon, A. S.** (2025). Urban Trees and Their Effect on Outdoor Thermal Comfort in Tropical Climates: A Miami Case Study. *In World Environmental and Water Resources Congress 2025* (pp. 247-258). †
2. Syed, Z., Saadati, Y., Yin, Z., Amini, M. H., and **Leon, A. S.** (2025). Optimal Control of Combined Sewer Overflow (CSO) Using Gradient-Based Neural Network Inversion with Projected Precipitation Inputs. *In World Environmental and Water Resources Congress 2025* (pp. 725-735). †
3. Sharifi, A., Zanje, S. R., Mahyawansi, P., Petrov, V., & **Leon, A. S.** (2025). Real-Time Air–Water Volume Fraction Prediction Using Deep Learning and High-Speed Imaging. *In World Environmental and Water Resources Congress 2025* (pp. 471-485). †
4. Shi, J., Yin, Z., **Leon, A. S.**, Obeysekera, J., & Narasimhan, G. (2025). FIDLAR: Forecast-Informed Deep Learning Architecture for Flood Mitigation. *Proceedings of the AAAI Conference on Artificial Intelligence*, *39*(27), 28377-28385. https://doi.org/10.1609/aaai.v39i27.35059.
5. Zanje, S. R., & **Leon, A. S.** (2024). Insights on Sewer Geyser Mechanisms and Retrofitting Strategies through Numerical Modeling and Laboratory Measurements. In *World Environmental and Water Resources Congress 2024* (pp. 777-788). †
6. Sharifi, A., Zanje, S. R., Mahyawansi, P., & **Leon, A. S.** (2024). Numerical Investigation of the Physical Mechanisms behind Geysers in Storm Sewer Systems: A Slug Analysis Based on a Computational Study of Geyser Eruptions. In *World Environmental and Water Resources Congress 2024* (pp. 835-845). †

7. Phan, V. T., Sun, R., Duniawi, M. A., Lian, R., Asok, H. K., & **Leon, A. S.** (2024). On the Feasibility of Detecting Model Poisoning Attacks in Real-time ML-based ICS. In *Proceedings of the 2024 Workshop on Re-design Industrial Control Systems with Security*, 65-69.
8. Bian, L., Verma, V., Yin, Z., Campbell W., and **Leon, A. S**. (2023). An Integrated Framework for Automatic Flood Mitigation at the Watershed Scale. In Proceedings of 2023 International Low Impact Development Conference, 58-66, Oklahoma City, OK, August 6-9, 2023. †
9. Yin, Z., **Leon, A. S.**, Sharifi, A., Amini, M. H. (2023). "Optimal Control of Combined Sewer Systems to Minimize Sewer Overflows by Using Reinforcement Learning." In Proceedings of 2023 ASCE-EWRI World Environmental & Water Resource Congress, 711-722, Henderson, NV, May 21-25, 2023. †
10. Yin, Z., Bian, L., Hu, B., Shi, J., **Leon, A. S.** (2023). "Physic-Informed Neural Network Approach Coupled with Boundary Conditions for Solving 1D Steady Shallow Water Equations for Riverine System." In Proceedings of 2023 ASCE-EWRI World Environmental & Water Resource Congress, 280-288, Henderson, NV, May 21-25, 2023. †
11. Campbell, W. H., Savant, G., **Leon, A. S.**, Bian, L. (2023). "Applying HEC-RAS to Simulate the Complex Tidal Conditions for Estuaries and Bays: A Case Study of the San Francisco Bay." In Proceedings of 2023 ASCE-EWRI World Environmental & Water Resource Congress, 185-193, Henderson, NV, May 21-25, 2023. †
12. Mahyawansi, P., Lin, C-X, **Leon, A. S.** (2022). Understanding the Influence of Pressure Disturbance on the Transition of Stratified to Slug Flow. 7th Thermal and Fluids Engineering Conference (TFEC), 947-957, Las Vegas, NV, May 15-18, 2022. †
13. Verma, V., Bian, L., **Leon, A. S.** (2022). "A Remotely Operated Software Defined Radio Based Framework to Release Water from a Network of Storage Units." In proceedings of *2022 ASCE-EWRI World Environmental & Water Resource Congress*, 8-15, Atlanta, GA, June 5–8, 2022. †
14. Campbell, W. H., Savant, G., **Leon, A. S.**, Bian, L. (2022). "Applying HEC-RAS to Simulate the Complex Tidal Conditions for Estuaries and Bays: A Case Study of the Cook Inlet in Alaska." In proceedings of *2022 ASCE-EWRI World Environmental & Water Resource Congress*, 232-243, Atlanta, GA, June 5–8, 2022. †
15. Zanje, S. R., Verma, V., Bian, L., Yin, Z., **Leon, A. S.** (2022). "Impact of Pipe Leakage Location on Siphon Flow Breakage." In proceedings of *2022 ASCE-EWRI World Environmental & Water Resource Congress*, 1211-1220, Atlanta, GA, June 5–8, 2022. †
16. Verma, V., Bian, L., **Leon, A. S.** (2022). "A Remotely Operated Framework Based on Internet of Things (IoT) Technology to Release Water from Ponded Systems." In proceedings of *2022 ASCE-EWRI World Environmental & Water Resource Congress*, 1-7, Atlanta, GA, June 5–8, 2022. †
17. Bian, L., Yin, Z., Verma, V., Campbell, W. H., **Leon, A. S.**, Melesse, A. M. (2022). "Estimating the Potential Wetland Storage Capacity for Flood Mitigation by Using Deterministic Topographic Wetland Index." In proceedings of *2022 ASCE-EWRI World Environmental & Water Resource Congress*, 1252-1263, Atlanta, GA, June 5–8, 2022. †
18. Mahyawansi, P., Zanje, S. R., Lin, C-X, **Leon, A. S.** (2022). "An Affordable PIV Technique for Water Using Potato Starch with Diode Laser and Smartphones." In proceedings of *2022 ASCE-EWRI World Environmental & Water Resource Congress*, 390-399, Atlanta, GA, June 5–8, 2022. †
19. Yin Z., Zahedi, L., **Leon, A. S.**, Hamini, M. H., Bian, L. (2022). "A Machine Learning Framework for Overflow Prediction in Combined Sewer Systems." In proceedings of *2022 ASCE-EWRI World Environmental & Water Resource Congress*, 194-205, Atlanta, GA, June 5–8, 2022. †
20. Zanje, S. R., Mahyawansi, P., **Leon, A. S.**, Lin, C-X. (2022). "CFD Modeling of Storm Sewer Geysers in Partially Filled Dropshafts." In proceedings of *2022 ASCE-EWRI World Environmental & Water Resource Congress*, 1187-1195, Atlanta, GA, June 5–8, 2022. †

21. Verma, V., Bian L., Ozecik, D., Sirigineedi, S.S. and **Leon, A. S.** (2021). Internet-Enabled Remotely Controlled Architecture to Release Water from Storage Units. *World Environmental and Water Resources Congress 2021*, 586-592. †
22. Bian L., Verma, V., Li, J., Zanje, S. R., Vento, A., Filgueiras, L., Ozecik, D., **Leon, A. S.**, et al. (2021). A Feasibility Study on Harvesting Rainwater from Large Solar Panel Canopies to Supplement Makeup Water for Cooling Towers by Using Remotely Controlled and Self-Cleaning Rain Cistern. *World Environmental and Water Resources Congress 2021*, 1118-1134. †
23. Bian L., Verma, V., Rojali, A., Ozecik, D. and **Leon, A. S.** (2021). Operational Reliability Assessment of a Remotely Controlled Siphon System for Draining Shallow Storage Ponds. *World Environmental and Water Resources Congress 2021*, 607-620. †
24. Ying J., Qin L., Cao, Q., and **Leon, A. S.** (2021). Autonomous Control and Monitoring of On-site In-network Storage Systems in Remote Environments to Mitigate Floods. In: Xu J., García Márquez F.P., Ali Hassan M.H., Duca G., Hajiyev A., Altiparmak F. (eds) Proceedings of the Fifteenth International Conference on Management Science and Engineering Management. ICMSEM 2021. Lecture Notes on Data Engineering and Communications Technologies, vol 78. Springer, Cham. https://doi.org/10.1007/978-3-030-79203-9_3. §
25. Verma, V., Vutukuru K. S., Bian L., Rojali, A., Ozecik, D., and **Leon, A. S.** (2020). Reliability and Robustness Evaluation of a Remotely Operated Siphon System for Flood Mitigation during Hurricanes. World Environmental and Water Resources Congress 2020: Emerging and Innovative Technologies and International Perspectives, 31-39. https://ascelibrary.org/doi/abs/10.1061/9780784482940.004 †
26. Verma, V., Bian L., Rojali, A., Ozecik, D., and **Leon, A. S.** (2020). A Remotely Controlled Framework for Gravity-Driven Water Release in Shallow and Not Shallow Storage Ponds. World Environmental and Water Resources Congress 2020: Emerging and Innovative Technologies and International Perspectives, 12-22. https://ascelibrary.org/doi/abs/10.1061/9780784482940.002 †
27. **Leon, A. S.** and Zanje S. (2019). "Experiments and numerical modeling of field-scale geysers in stormsewer systems." In e-proceedings of the *38th IAHR World Congress*, 3370-3379, Panama City, Panama, September 1-6, 2019 (doi:10.3850/38WC092019-1900). *
28. **Leon, A. S.** (2019). "Upper Limit Velocity of Geyser Eruptions in Stormwater and Combined Sewer Systems." In proceedings of *2019 ASCE-EWRI World Environmental & Water Resource Congress*, 122-128, Pittsburgh, PA, May 19-23, 2019. *
29. **Leon, A. S.** and Verma, V. (2019). "Towards Smart and Green Flood Control: Remote and Optimal Operation of Control Structures in a Network of Storage Systems for Mitigating Floods." In proceedings of *2019 ASCE-EWRI World Environmental & Water Resource Congress*, 177-189, Pittsburgh, PA, May 19-23, 2019. *
30. Kang D., Kim J., Verma, V., **Leon, A. S.** and Kang, B. (2019). "Evaluation of urban inundation under changing landuse - Application of EPA SWMM-LID to Andong city in South Korea." In proceedings of *2019 ASCE-EWRI World Environmental & Water Resource Congress*, 83-88, Pittsburgh, PA, May 19-23, 2019. §
31. Vasconcelos, J. and **Leon, A. S.** (2019). "Evaluation of mathematical model alternatives for the simulation of unsteady, two-phase flows in urban water systems." In proceedings of *2019 ASCE-EWRI World Environmental & Water Resource Congress*, 99-108, Pittsburgh, PA, May 19-23, 2019. §
32. Maleki, H., Safaei, M. R., **Leon, A. S.** and Khang, T. N. (2019). "Thermal and hydraulic performance of longitudinal perforated rectangular fins with perforation shape and size variations", In proceedings of 4th Thermal and Fluids Engineering Conference, (TFEC), TFEC-2019-27962, 1-8, Las Vegas, NV, April 14–17, 2019. §

33. Chegini, T., Phan, M. K., and **Leon, A. S.** (2018). "Comparison of Various Turbulence Models for Violent Geysers in Vertical Pipes." In proceedings of *2018 ASCE-EWRI World Environmental & Water Resource Congress*, 99-108, Minneapolis, MN, June 3-7, 2018. **This paper won the third place in graduate student technical paper competition.** https://ascelibrary.org/action/showCitFormats?doi=10.1061%2F9780784481424.011. †
34. **Leon, A. S.** (2017). "Mechanisms that lead to the occurrence of violent geysers in storm water and combined sewer systems." In Proceedings of *37th IAHR World Congress*, Volume 1, pp. 5821-5830, Kuala Lumpur, Malaysia, August 13-18, 2017. *
35. **Leon, A. S.** (2016). "Determining Optimal Discharge and Optimal Penstock Diameter in Water Turbines." In B. Crookston & B. Tullis (Eds.), Hydraulic Structures and Water System Management. *6th IAHR International Symposium on Hydraulic Structures*, Portland, OR, 27-30 June (pp. 332-342). doi:10.15142/T390628160853 (ISBN 978-1-884575-75-4). *
36. **Leon, A. S.** and Alnahit, A. O. (2016). "A Remotely Controlled Siphon System for Dynamic Water Storage Management." In B. Crookston & B. Tullis (Eds.), Hydraulic Structures and Water System Management. *6th IAHR International Symposium on Hydraulic Structures*, Portland, OR, 27-30 June (pp. 1-11). doi:10.15142/T3690628160853 (ISBN 978-1-884575-75-4). *
37. Choi, Y., **Leon, A. S.**, and Apte, S. (2016). "A One-Dimensional Numerical Model to Predict Pressure and Velocity Oscillations of a Compressed Air Pocket in a Vertical Shaft Filled with Water." In proceedings of *ASCE-EWRI World Environmental & Water Resource Congress*, 202-211, West Palm Beach, FL, May 22-26, 2016. †
38. **Leon, A. S.** (2016). "New Evidence on the Causes of Explosives Geysers in Stormwater and Combined Sewer Systems: A Simplified Model for the Prediction of These Geysers." In proceedings of *ASCE-EWRI World Environmental & Water Resource Congress*, 224-233, West Palm Beach, FL, May 22-26, 2016. *
39. Chen, D., **Leon, A. S.**, and Hosseini P. (2016). "Patterns of Optimal Operational Schemes for the Short-Term Operation of a Multi-Reservoir System with Shifting Objectives." In proceedings of *ASCE-EWRI World Environmental & Water Resource Congress*, 428-437, West Palm Beach, FL, May 22-26, 2016. †
40. Choi, Y., **Leon, A. S.**, and Apte, S. (2014). "Three-dimensional Numerical Modeling of Air-water Geyser Flows." In proceedings of *ASCE-EWRI World Environmental & Water Resource Congress*, 1535-1548, Portland OR, June 1-5, 2014. †
41. Chen, D., **Leon, A. S.**, and Hosseini P. (2014). "Optimizing Short-term Operation of a Multi-reservoir System During Transition of Objectives and Constraints." In proceedings of *ASCE-EWRI World Environmental & Water Resource Congress*, 1093-1105, Portland OR, June 1-5, 2014. †
42. Gomez, L. A., Lee, H. W., and **Leon, A. S.** (2014). "A real options-based framework to evaluate investments in river flood control under uncertainty." In proceedings of *Second International Conference on Vulnerability and Risk Analysis and Management (ICVRAM) and the Sixth International Symposium on Uncertainty, Modeling, and Analysis (ISUMA)*, 1465-1474, Liverpool, UK, July 13-16, 2014. †
43. **Leon, A. S.**, Valverde, R., and Gonzalez-Castro, J. A. (2012). "A Robust, Numerically Efficient Model for Unsteady Flow Routing in Topologically Complex River Networks" In proceedings of *ASCE-EWRI World Environmental & Water Resource Congress*, 1119-1128, Albuquerque, New Mexico, May 20-24, 2012. *
44. **Leon, A. S.**, Kanashiro E. A., Gichamo, T. Z., Valverde, R., and Gifford-Miears, C. H. (2012). "Toward the intelligent control of river flooding." In proceedings of *ASCE-EWRI World Environmental & Water Resource Congress*, 1687-1696, Albuquerque, New Mexico, May 20-24, 2012. *

45. Bernedo, C. E., Julien, P., **Leon, A. S**. (2011). "Dam Breach Analysis in Tailings Storage Facilities (TSF)" In Proceedings of the *ASCE-EWRI World Environmental and Water Resources Congress*, 2216-2224, Palm Springs, CA, May 2011. §
46. **Leon, A. S.** "A New Coupled Optimization-Hydraulic Routing Model for Real-Time Operation of Regulated River Systems", In Proceedings of *Watershed Management*, 213-224, ASCE-EWRI, August 23-27, 2010, Madison, Wisconsin. *
47. **Leon, A. S.**, Choi, N. J., Schmidt, A. R., and García, M. H. (2010). "Flow Dynamics in Combined Storm-Sewer Systems: Application of the Illinois Transient Model (ITM) to the Calumet TARP System in Chicago, Illinois." In Proceedings of *ASCE-EWRI World Environmental & Water Resource Congress*, 3703-3717, Providence, Rhode Island, May 16-20, 2010. *
48. **Leon, A. S.**, Liu, X. Ghidaoui, M. S., Schmidt, A. R., and García, M. H. (2009). "Boundary Conditions for Simulating Complex Storm-sewer Systems in Free Surface, Pressurized, and Mixed Flow Conditions." In Proceedings of *ASCE-EWRI World Environmental & Water Resource Congress*, 5557-5567, Kansas City, Missouri, 2009. *
49. **Leon, A. S.**, Nanía, L. S., Schmidt, A. R., and García, M. H. (2009). "A Robust And Fast Model For Simulating Street Flooding." In Proceedings of *ASCE-EWRI World Environmental & Water Resource Congress*, 5364-5373, Kansas City, Missouri, 2009. *
50. **Leon, A. S.**, Ghidaoui, M. S., Schmidt, A. R., and García, M. H. (2008). "A Shock-capturing Approach for Simulating Gravity Flows, Pressurized Flows and the Simultaneous Occurrence of Gravity and Pressurized Flows." In Proceedings of *10th International Conference on Pressure Surges*, BHR Group, 489-502, 14-16 May, 2008, Edinburgh, United Kingdom. *
51. **Leon, A. S.**, Ghidaoui, M. S., Schmidt, A. R., and García, M. H. (2008). "A finite volume model for mixed free surface-pressurized flows in drainage systems." In Proceedings of *World Water and Environmental Resources Congress*, CD-ROM Edition (10 pages), Hawaii, USA, May 13-16, 2008. Permalink: http://dx.doi.org/10.1061/40976(316)671. *
52. **Leon, A. S.**, Cataño-Lopera, Y. A., Liu, X., Schmidt, A. R., and García, M. H. (2008). "Experimental and CFD modeling of a vortex flow restrictor." In Proceedings of *World Water and Environmental Resources Congress*, CD-ROM Edition (10 pages), Hawaii, USA, May 13-16, 2008. Permalink: http://dx.doi.org/10.1061/40976(316)646. *
53. **Leon, A. S.**, Ghidaoui, M. S., Schmidt, A. R., and García, M. H. (2007). "Godunov-type solutions for two-phase water hammer flows." In Proceedings of *Fifth International Symposium on Environmental Hydraulics*, CD-ROM Edition (7 pages), Tempe, Arizona, USA. Dec. 4-7, 2007. *
54. **Leon, A. S.**, Ghidaoui, M. S., Schmidt, A. R. and Garcia, M. H. (2006) "An efficient numerical scheme for the modeling of two-phase bubbly homogeneous air-water mixtures". In Proceedings of *World Environmental & Water Resources Congress*, CD-ROM Edition, P32 (10 pages), Nebraska, 2006. *
55. **Leon, A. S.**, Ghidaoui, M. S., Schmidt, A. R., and García, M. H. (2005). "Importance of numerical efficiency for real time control of transient gravity flows in sewers." In Proceedings of *XXXI IAHR Congress*, 1106-1115, Seoul, Korea. *
56. Schmidt, A. R., Ghidaoui, M. S., **Leon, A. S.**, and García, M. H. (2005). "Review of sewer surcharging phenomena and models." In Proceedings of *XXXI IAHR Congress*, 257-258, Seoul, Korea. §

Non Peer-Reviewed (NPR)

The publications in this section include abstracts, non-peer-reviewed papers, in some cases papers and presentations, and in some other cases only presentations made at conferences or other venues. (*) identifies the presentations I made, (†) represents presentations made by students or

Post-doc that I advise(d), and the (§) represents presentations made by my collaborators or their students.

1. **Leon, A. S.**, Asok, H. K., and Ebrahimian, A. (2025). "Heat Island Modeling and Field Measurements: A Case Study of three sites in Miami, Florida." Presented in the ASCE-EWRI World Environmental & Water Resource Congress, Anchorage, AK, May 18-21, 2025. *
2. Jerez, L. A. M., Scinto, L. J., Ebrahimian, A., **Leon, A. S.**, Asok, H. K., Mahmood P. (2025). Evaluating the Climate Resiliency of Urban Trees to Mitigate Urban Heat Island in Southeastern Florida. Presented in the ASCE-EWRI World Environmental & Water Resource Congress, Anchorage, AK, May 18-21, 2025. §
3. Sharifi, A., Zanje, S. R., Mahyawansi, P., & **Leon, A. S**. (2025). Accelerating Computational Fluid Dynamics Simulations with Physics-Informed Neural Networks. Presented in the ASCE-EWRI World Environmental & Water Resource Congress, Anchorage, AK, May 18-21, 2025. †
4. Sharifi, A., Zanje, S. R., Mahyawansi, P., Petrov, V. & **Leon, A. S**. (2025). Real-Time Air–Water Volume Fraction Prediction Using Deep Learning and High-Speed Imaging. Presented in the ASCE-EWRI World Environmental & Water Resource Congress, Anchorage, AK, May 18-21, 2025. †
5. Asok, H. K., Jerez L.A.M., Scinto, L.J., Ebrahimian, A., and **Leon, A. S**. (2025). "Spatial and Temporal Air Temperature and Humidity Distribution Below a Tree Canopy: Onsite Monitoring and CFD Modeling." Presented in the ASCE-EWRI World Environmental & Water Resource Congress, Anchorage, AK, May 18-21, 2025. †
6. Asok, H. K., Kostrna J.R., Ebrahimian, A., and **Leon, A. S.** (2025). "Urban Trees and Their Effect on Outdoor Thermal Comfort in Tropical Climates: A Miami Case Study." Presented in the ASCE-EWRI World Environmental & Water Resource Congress, Anchorage, AK, May 18-21, 2025. †
7. Syed, Z., Saadati, Y., Yin, Z., Amini, M. H., and **Leon, A. S**. (2025). "Optimal Control of Combined Sewer Overflow (CSO) Using Gradient-Based Neural Network Inversion with Projected Precipitation Inputs." Presented in the ASCE-EWRI World Environmental & Water Resource Congress, Anchorage, AK, May 18-21, 2025. †
8. Shi, J., Yin, Z., **Leon, A. S.**, Obeysekera, J., & Narasimhan, G. (2025). FIDLAR: Forecast-Informed Deep Learning Architecture for Flood Mitigation. Presented in the *AAAI Conference on Artificial Intelligence*, Philadelphia, PA, February 25–March 4, 2025. §
9. Phan, V. T., Sun, R., Duniawi, M. A., Lian, R., Asok, H. K. & **Leon, A. S**. (2024). On the Feasibility of Detecting Model Poisoning Attacks in Real-time ML-based ICS. Presented in *the 2024 Workshop on Re-design Industrial Control Systems with Security,* Salt Lake City, UT October 14 - 18, 2024. §
10. Bian, L., **Leon, A. S.**, Hu, B., Catano, Y., Yin, Z. (2024). "CFD Simulation of Aeration and Mixing Process in a Wastewater Treatment Plant." Presented in the *ASCE-EWRI World Environmental & Water Resource Congress*, Milwaukee, WI, May 19-22, 2024. †
11. **Leon, A. S.**, Sharifi, A., Mahyawansi, P. J. (2024). "New Insights on Geyser Processes in Sewer Systems Through Laboratory Experimentation and Numerical Modeling." Presented in the *ASCE-EWRI World Environmental & Water Resource Congress*, Milwaukee, WI, May 19-22, 2024. *
12. Zanje, S. R., **Leon, A. S**. (2024). "Unveiling the Symphony of Sewer Geysers: A Call for Increasing Research to Address the Replacement and Retrofitting of our Aging Stormwater and Combined Sewer Infrastructure." Presented in the *ASCE-EWRI World Environmental & Water Resource Congress*, Milwaukee, WI, May 19-22, 2024. †
13. Sharifi, A., Zanje, S. R., Mahyawansi, P. & **Leon, A. S**. (2024). "Numerical Investigation of the Physical Mechanisms behind Geysers in Storm Sewer Systems: A Slug Analysis Based on a Computational Study of Geyser Eruptions." Presented in the ASCE-EWRI World Environmental & Water Resource Congress, Milwaukee, WI, May 19-22, 2024. †

14. Zanje, S. R. & **Leon, A. S.** (2024). "Insights on Sewer Geyser Mechanisms and Retrofitting Strategies through Numerical Modeling and Laboratory Measurements." Presented in the ASCE-EWRI World Environmental & Water Resource Congress, Milwaukee, WI, May 19-22, 2024. †
15. Bian, L., **Leon, A. S.**, Hu, B., Yin, Z. (2024). "Enhancing Near Real-Time Flood Forecasting Using Spatial Distributed PERSIANN Data in an Automatic H&H Framework." Presented in the *ASCE-EWRI World Environmental & Water Resource Congress*, Milwaukee, WI, May 19-22, 2024. †
16. Yin, Z., **Leon, A. S.**, Bian, L., Zanje, S. R. (2024). "Converting Low-Fidelity to High-Fidelity Flood Inundation Map using Super Resolution Techniques" Presented in the *ASCE-EWRI World Environmental & Water Resource Congress*, Milwaukee, WI, May 19-22, 2024. †
17. **Leon, A. S.**, Ebrahimian A., Kirtman B., Asok, H. K. (2024). "Exploring Three-Dimensional Computational Fluid Dynamics Modeling for Microclimatic Wind and Urban Thermal Environment: A Case Study of the Miami Design District in Miami, Florida" Presented in the *ASCE-EWRI World Environmental & Water Resource Congress*, Milwaukee, WI, May 19-22, 2024. *
18. Jerez L. A. M., Ebrahimian A., **Leon, A. S.**, Asok, H. K., Scinto L., Mahmood P. (2024). "Designing a Comprehensive Monitoring Plan of the Long-term Performance of Various Types of Green Stormwater Infrastructure in Southeast Florida" Presented in the *ASCE-EWRI World Environmental & Water Resource Congress*, Milwaukee, WI, May 19-22, 2024. §
19. Bian, L., Verma, V., Yin, Z., **Leon, A. S.** and Campbell W. (2023). Applying a Remotely Controlled and Self-operated Gate on Flood Mitigation at the Watershed Scale. Presented in the 2023 International Low Impact Development Conference, Oklahoma City, OK, August 6-9, 2023. †
20. Bian, L., Verma, V., Yin, Z., Campbell W. and **Leon, A. S.** (2023). An Integrated Framework for Automatic Flood Mitigation at the Watershed Scale. Presented in the 2023 International Low Impact Development Conference, Oklahoma City, OK, August 6-9, 2023. †
21. Yin, Z., Bian, L., Hu, B., Shi, J., & **Leon, A. S.** (2023). "Physic-informed neural network approach coupled with boundary conditions for solving 1D steady shallow water equations for riverine system." Presented in the ASCE-EWRI World Environmental & Water Resource Congress, Henderson, NV, May 21-24, 2023. †
22. Campbell, W. H., Savant, G., **Leon, A. S.**, & Bian, L. (2023). "Applying HEC-RAS to Simulate the Complex Tidal Conditions for Estuaries and Bays: A Case Study of the San Francisco Bay." Presented in the ASCE-EWRI World Environmental & Water Resource Congress, Henderson, NV, May 21-24, 2023. †
23. Yin, Z., **Leon, A. S.**, Sharifi, A., & Amini, M. H. (2023). "Optimal Control of Combined Sewer Systems to Minimize Sewer Overflows by Using Reinforcement Learning." Presented in the ASCE-EWRI World Environmental & Water Resource Congress, Henderson, NV, May 21-24, 2023. †
24. Pennings, S.C., Hockaday, A., Patterson, K., **Leon, A. S.** (2023). Freshwater wetlands for flood control: how manipulating the hydroperiod affects plant and invertebrate communities. Virtual presentation made at *River Webinar, Management and Restoration of Eco-environment – The role of Land-Water Ecotone*, April 20, 2023. §
25. Verma, V., Bian, L., & **Leon, A. S.** (2022). "A Remotely Operated Software Defined Radio Based Framework to Release Water from a Network of Storage Units." Presented in the ASCE-EWRI World Environmental & Water Resource Congress, Atlanta, GA, June 5-8, 2022. †
26. Campbell, W. H., Savant, G., **Leon, A. S.**, & Bian, L. (2022). "Applying HEC-RAS to Simulate the Complex Tidal Conditions for Estuaries and Bays: A Case Study of the Cook Inlet in Alaska." Presented in the ASCE-EWRI World Environmental & Water Resource Congress, Atlanta, GA, June 5-8, 2022. †
27. Zanje, S. R., Verma, V., Bian, L., Yin, Z. & **Leon, A. S.** (2022). "Impact of Pipe Leakage Location on Siphon Flow Breakage." Presented in the ASCE-EWRI World Environmental & Water Resource Congress, Atlanta, GA, June 5-8, 2022. †

28. Verma, V., Bian, L., & **Leon, A. S.** (2022). "A remotely operated framework based on Internet of Things (IoT) technology to release water from ponded systems." Presented in the ASCE-EWRI World Environmental & Water Resource Congress, Atlanta, GA, June 5-8, 2022. †
29. Bian, L., Yin, Z., Verma, V., Campbell, W., **Leon, A. S.** & Melesse, A. M. (2022). "Estimating the Potential Wetland Storage Capacity for Flood Mitigation by Using Deterministic Topographic Wetland Index." Presented in the ASCE-EWRI World Environmental & Water Resource Congress, Atlanta, GA, June 5-8, 2022. †
30. Mahyawansi, P., Zanje, S. R., Lin, C. X. & **Leon, A. S.** (2022). "An affordable PIV technique for water using potato starch with diode laser and smartphones." Presented in the ASCE-EWRI World Environmental & Water Resource Congress, Atlanta, GA, June 5-8, 2022. †
31. Yin, Z., Zahedi, L., **Leon, A. S.**, Amini, M. H., & Bian, L. (2022). "A machine learning framework for overflow prediction in combined sewer systems." Presented in the ASCE-EWRI World Environmental & Water Resource Congress, Atlanta, GA, June 5-8, 2022. †
32. Zanje, S. R., Mahyawansi, P., **Leon, A. S.**, & Lin, C. X. (2022). "CFD modeling of storm sewer geysers in partially filled dropshafts." Presented in the ASCE-EWRI World Environmental & Water Resource Congress, Atlanta, GA, June 5-8, 2022. †
33. Zanje, S.R., Gutierrez, G., Campbell, W., …, **Leon, A. S.**, Bogosian, B., et al. (2022). Resilient MAST@FIU: Adapting the FIU MAST for Living with Coastal Waters Under Extreme Events. Available at https://www.epa.gov/system/files/documents/2022-05/d27-project-narrative%20508_0.pdf. †
34. Bian, L., Verma, V., Yin, Z., **Leon, A. S.**, Melesse A. M. (2021). "A Cell Size Sensitivity Study on the Accuracy of Wetland Delineation by Using Deterministic Topographic Wetland Index." AGU Fall Meeting Abstracts, New Orleans, LA, December 13-17, 2021. †
35. Vasconcelos, J.G., Karney, B., and **Leon, A.S.** (2021). An Investigation on the Causes and Solutions for Operational Issues in Urban Water Systems Linked to Two-Phase Flows, EWRI CURRENTS, Volume 23, Number 3, Summer 2021. https://www.paperturn-view.com/ewri/spring-2021?pid=NjY66181&p=7&v=18.7. §
36. Bian, L., Verma, V., Zanje, S.R., Yin, Z., Design, G.I., Hernandez, J., Loayza, A., Filgueiras, I.V.L.A., Diez, D.S., **Leon, A. S.**, Bogosian, B., et al. (2021). Smart Eco-Water Use: Towards a Climate-Resilient Campus. Available at https://www.epa.gov/sites/default/files/2021-04/documents/d01-project_narrative.pdf. †
37. Verma, V., Bian, L., Ozecik, D., Sirigineedi, S. S., & **Leon, A. S.** (2021). "Internet-Enabled Remotely Controlled Architecture to Release Water from Storage Units." Presented in the ASCE-EWRI World Environmental & Water Resource Congress (Virtual), June 7-11, 2021. †
38. Bian, L., Verma, V., Li, J., Zanje, S.R., Vento, A., Filgueiras, L., Ozecik, D., **Leon, A. S.**, Bogosian, B. and Grant, S. (2021). "A Feasibility Study on Harvesting Rainwater from Large Solar Panel Canopies to Supplement Makeup Water for Cooling Towers by Using Remotely Controlled and Self-Cleaning Rain Cistern." Presented in the ASCE-EWRI World Environmental & Water Resource Congress (Virtual), June 7-11, 2021. †
39. Bian, L., Verma, V., Rojiali, A., Ozecik, D., & **Leon, A. S.** (2021). "Operational reliability assessment of a remotely controlled siphon system for draining shallow storage ponds." Presented in the ASCE-EWRI World Environmental & Water Resource Congress (Virtual), June 7-11, 2021. †
40. Verma, V., Lozada, A., Bian, L., …, **Leon, A. S.** and Ozer, E. (2020). *Coastal Eco-Waters: Adapting for a Resilient Campus*. Available at https://www.epa.gov/sites/default/files/2020-04/documents/m11-project_narrative.pdf. †
41. **Leon, A. S.** & Zanje, S. R. (2019). "Experiments and Numerical Modeling of Field-scale geysers in Stormsewer Systems," Presented in the *38th IAHR World Congress*, Panama City, Panama, September 1-6, 2019. *

42. Henao, S.M., Malagon, A., Raubenolt, R., Hogan, A., Verma, V., **Leon, A. S.**, Colasacco, A.A., Solomon, S. and Fuentes, H.R. (2019). EcoFLow: Sustainable and Smart Stormwater Solutions for Future Generations of South Florida. Available at https://www.epa.gov/sites/default/files/2019-04/documents/m31-project_narrative_508.pdf. §
43. Verma, V. and **Leon, A. S.** (2019). "Low-cost hardware for remote operation of siphons and outlet gates in a network of storage systems for mitigating floods," Presented in the *ASCE-EWRI World Environmental & Water Resource Congress*, Pittsburgh, PA, May 19-23, 2019. †
44. **Leon, A. S.** and Verma, V. (2019). "Towards Smart and Green Flood Control: Remote and Optimal Operation of Control Structures in a Network of Storage Systems for Mitigating Floods," Presented in the *ASCE-EWRI World Environmental & Water Resource Congress*, Pittsburgh, PA, May 19-23, 2019. *
45. **Leon, A. S.** (2019). "Upper limit velocity of geyser eruptions in stormwater and combined sewer systems," Presented in the *ASCE-EWRI World Environmental & Water Resource Congress*, Pittsburgh, PA, May 19-23, 2019. *
46. Vasconcelos, J. G. & **Leon, A. S.** (2019). "Evaluation of mathematical model alternatives for the simulation of unsteady, two-phase flows in urban water systems," Presented in the *ASCE-EWRI World Environmental & Water Resource Congress*, Pittsburgh, PA, May 19-23, 2019. §
47. Kang, D. H. D., Kim, J. G. J., Verma, V., **Leon, A. S.** & Kang, B. (2019). "Evaluation of urban inundation under changing landcover—application of EPA SWMM-LID to Andong City in South Korea," Presented in the *ASCE-EWRI World Environmental & Water Resource Congress*, Pittsburgh, PA, May 19-23, 2019. §
48. **Leon, A. S.** and Tang, Y. (2019). "Decision Support System for the remote and optimal operation of control structures in a network of storage systems for mitigating floods," Presented in the *ASCE-EWRI World Environmental & Water Resource Congress*, Pittsburgh, PA, May 19-23, 2019. *
49. Chegini, T., Phan, M. K., and **Leon, A. S.** (2018). "Numerical Investigation of a Retrofitting Method for Minimizing Violent Geysers in Sewer Systems" Presented in the *ASCE-EWRI World Environmental & Water Resource Congress*, Minneapolis, MN, June 3-7, 2018. †
50. **Leon, A. S.** and Chegini, T. (2018). "Chain mechanisms preceding and during violent geysers in sewer systems" Presented in the *ASCE-EWRI World Environmental & Water Resource Congress*, Minneapolis, MN, June 3-7, 2018. *
51. Chegini, T., Ma, T., Phan, M. K., and **Leon, A. S.** (2018). "Techniques for Increasing Computational Efficiency in the modeling of Violent Geysers", Presented in *The 8th International Symposium on Environmental Hydraulics*, Notre Dame, IN, June 4-7, 2018. †
52. **Leon, A. S.** and Chegini, T. (2018). "Physical mechanisms preceding and during violent geysers in sewer systems", Presented in *The 8th International Symposium on Environmental Hydraulics*, Notre Dame, IN, June 4-7, 2018. *
53. Bashiri, H., Sharifi, E., **Leon, A. S.**, and Gibson, N. (2018). "Optimization of Reservoir Operation using Uncertain Forecasts", Presented in the *Sustainable Water Management Conference*, Seattle, WA, March 25-28, 2018. †
54. Sharifi, E., Bashiri, H., **Leon, A. S.**, and Gibson, N. (2018). "Stochastic Modeling of Operational Flexibility for a Reservoir System", Presented in the *Sustainable Water Management Conference*, Seattle, WA, March 25-28, 2018. †
55. Sharifi, E., Chen, Y., Gibson, N., Bashiri, H., **Leon, A. S.**, (2018). "A Spread Pricing Option Model for Optimal Operation of Hydropower Systems." Presented in the *2018 ASCE-EWRI World Environmental & Water Resource Congress*, Minneapolis, MN, June 3-7, 2018. †

56. Bashiri, H., Sharifi, E., **Leon, A. S.**, Gibson, N. and Chen, Y. (2017). "Toward Quantification and Valuation of Flexibility for Hydropower Reservoir Systems." Presented in the *2017 AGU Fall Meeting,* New Orleans, LA, December 11-15, 2017. †
57. **Leon, A. S.** (2017). "Dynamic management of water storage of wetlands and shallow ponds for flood control" Presented in the *37th IAHR World Congress*, Kuala Lumpur, Malaysia, August 13-18, 2017. *
58. Sharifi, E., Bashiri, H., **Leon, A. S.**, Chen, Y., Gibson, N. (2017). "Valuation of flexibility for optimal reservoir operation." Presented in the *2017 CUAHSI Conference on Hydroinformatics*, Tuscalosa, AL, July 25-27, 2017. †
59. Bashiri, H., Sharifi, E., **Leon, A. S.**, Chen, Y., Gibson, N. (2017). "Quantification of Short-term Hydropower Generation Flexibility." Presented in the *2017 CUAHSI Conference on Hydroinformatics*, Tuscalosa, AL, July 25-27, 2017. †
60. Gibson, N., **Leon, A. S.** and Hosseini P. (2017). "Flexible decision variables in reservoir operation using dimension reduction approach", Presented in the 2017 SIAM Conference on Optimization, Vancouver, British Columbia, Canada, May 22-25, 2017. §
61. **Leon, A. S.** (2017). "Why Violent Geysers Occur in Stormwater and Combined Sewer Systems?" Presented in the *ASCE-EWRI World Environmental & Water Resource Congress*, Sacramento, CA, May 21-25, 2017. *
62. Chen, D., **Leon, A. S.**, Gibson, N. L., and Vasylkivska, V. S. (2014). "Using a Concurrent Hybrid Method to Optimize Short-Term Operation of a Multi-Reservoir System with Multiple Objectives". In Proceedings of the 11th International Conference on Hydroinformatics HIC 2014, New York City, NY, August 17-21, 2014. †
63. Hosseini P., Chen, D., **Leon, A. S.**, Gibson, N., Hoyle C. (2014). "A Multi-objective Robust Optimization Framework for the Operation of Multi-reservoir Systems", Presented in the ASCE-EWRI World Environmental & Water Resource Congress, Portland OR, June 1-5, 2014. †
64. **Leon, A. S.**, Hosseini P. (2014). "Effects of Small Tidal-type Waves on Rating Curves in Rivers", Presented in the ASCE-EWRI World Environmental & Water Resource Congress, Portland OR, June 1-5, 2014. *
65. **Leon, A. S.**, Zhu L. (2014). "A Dimensional Analysis for Determining Optimal Discharge and Optimal Penstock Diameter in Impulse and Reaction Water Turbines", Presented in the ASCE-EWRI World Environmental & Water Resource Congress, Portland OR, June 1-5, 2014. *
66. Gomez, L., and **Leon, A. S.** (2014). "Investment Time for Flood Control Under Uncertainty: A Real Options-Based Framework". 2014 Water Research Symposium, Oregon State University, Corvallis, Oregon, May 12, 2014. †
67. Gibson, N., Gomez, L., **Leon, A. S.**, and Vasylkivska, V. (2014). "A Domain Decomposition Method for Unsteady Flow Routing in Complex River Systems". 16th SIAM Conference on Parallel Processing for Scientific Computing, Portland OR, February 18-21, 2014. §
68. **Leon, A. S.**, Gifford-Miears, C., and Gibson, N., Hoyle, C. (2013). "Development of a State-of-the-Art Computational Framework for the Optimal Control of Multi-Reservoir Systems Under Uncertainty", Presented in the 2013 AWRA Annual Water Resources Conference, Portland OR, November 4-7, 2013. *
69. Chen, D., **Leon, A. S.**, Chen, Q. and Li, R. (2013). "Pareto-Optimal Solutions and Operational Strategies for a Multi-Objective Reservoir with Ecological and Environmental Purposes: A Case Study of Qingshitan Reservoir", Presented in the 2013 AWRA Annual Water Resources Conference, Portland OR, November 4-7, 2013. †
70. **Leon, A. S.**, Gifford-Miears, C., and Gibson N. (2013). "A Framework for Propagation of Uncertainty in River Systems", Presented in the ASCE-EWRI World Environmental & Water Resource Congress, Cincinnati OH, May 19-22, 2013. *

71. Alam M., and **Leon, A. S.** (2013). "Upper Limit of Extractable Hydropower". 2013 Water Research Symposium, Oregon State University, Corvallis, Oregon, May 13, 2013. †
72. Choi, Y., and **Leon, A. S.** (2013). "Towards Predicting the occurrence of geysers and CSOs in combined sewer systems - An experimental, theoretical and numerical approach". 2013 Water Research Symposium, Oregon State University, Corvallis, Oregon, May 13, 2013. †
73. Choi, Y., **Leon, A. S**. (2012). "Towards predicting the occurrence of geysers and CSOs in combined sewer systems - an experimental, theoretical and numerical approach." Presented in the 2012 Sustainable Stormwater Symposium, Portland, Oregon, September 19-20, 2012. †
74. Bernedo, C. E., Salas, J., and **Leon, A. S**. (2012). "Challenges of safe and sound designs: Hydrologic design criteria in areas affected by El Niño phenomenon. Can conventional hydrology be applied?" In proceedings of the 2012 Dam Safety Conference, Association of State Dam Safety Officials, Denver, CO., September 16-21, 2012. §
75. **Leon, A. S.**, Gibson, N. L., and Gifford-Miears, C. H. (2012). "Toward reduction of uncertainty in complex multi-reservoir river systems." In proceedings of the XIX International Conference on Computational Methods in Water Resources (CMWR), University of Illinois at Urbana-Champaign, Urbana, Illinois, June 17-21, 2012. *
76. **Leon, A. S.**, Kanashiro, E. A., Gichamo, T. Z., and Valverde, R. (2012). "Towards the intelligent control of river flooding. Harmonizing long-term objectives (e.g., irrigation, hydropower) with the flooding objective." In proceedings of the XIX International Conference on Computational Methods in Water Resources (CMWR), University of Illinois at Urbana-Champaign, Urbana, Illinois, June 17-21, 2012. *
77. Choi, Y., and **Leon, A. S.** (2012). "Minimizing Geysers and CSOs in the Portland Combined Sewer System." 2012 Water Research Symposium, Oregon State University, Corvallis, Oregon, May 18, 2012. †
78. Gifford-Miears, C. H., and **Leon, A. S.** (2012). "Applicability of Three Dimensional Modeling in the Construction of Hydraulic Performance Graphs for Unsteady Flow Routing in Complex River Networks." 2012 Water Research Symposium, Oregon State University, Corvallis, Oregon, May 18, 2012. †
79. Gomez, L.A., and **Leon, A. S.** (2012). "Improving the Computational Efficiency of the Hydraulic Performance Graphs for Unsteady Flow Routing in Complex River Networks." 2012 Water Research Symposium, Oregon State University, Corvallis, Oregon, May 18, 2012. †
80. Gibson, N. L., **Leon, A. S.**, and Gifford-Miears, C. H. (2012). "Toward Reduction of Uncertainty in Complex Multi-Reservoir River Systems." SIAM (Society for Industrial and Applied Mathematics) Conference on Uncertainty Quantification, Raleigh, North Carolina, April 2-5, 2012. §
81. **Leon, A. S.**, Kanashiro, E. A., Valverde, R., Gifford-Miears, C. H., Gichamo, T. Z., Gomez L., and Rask, J. (2012) "A Computationally Efficient and Robust Approach for Multi-objective Operation of Multi-reservoir systems Subjected to Multiple Constraints." Reservoir System Modeling Technologies Conference, Bonneville Power Administration, February 21-22, 2012, Portland, Oregon. *
82. Gibson, N. L., Gichamo, T. Z., Valverde, R., Gifford-Miears, C. H., and **Leon, A. S.** (2012) "Towards reduction of uncertainty in the operation of reservoir systems." Reservoir System Modeling Technologies Conference, Bonneville Power Administration, February 21-22, 2012, Portland, Oregon. §
83. **Leon, A. S.**, and Gichamo, T. Z. (2011). "A novel physically-based framework for the intelligent control of river flooding." Oregon Water Conference, Corvallis, Oregon, 2011. *
84. **Leon, A. S**. (2006) "Towards modeling for real-time control of combined-sewer-overflow systems: Application to the Calumet TARP System in Chicago, Illinois." *Proc., Illinois Water Conference,* October 4-5, 2006. Edited by Jennifer Fackler, Illinois Water Resources Center. *

85. **Leon, A. S.** (2006). "Efficient numerical modeling of one and two-phase transient flows (In Spanish)." *Proc., I International Congress of Hydraulics, Hydrology and Environment*. Organized by Instituto de la Construcción y Gerencia, Lima, Peru. *
86. **Leon, A. S.** (2006). "New numerical model for the simultaneous simulation of unsteady free surface and pressurized flows. (In Spanish)." *Proc., I International Congress of Hydraulics, Hydrology and Environment*. Organized by Instituto de la Construcción y Gerencia, Lima, Peru. *
87. **Leon, A. S.** (2004). "Special topics in unsteady flows and its applications to Hydraulic Engineering (Key Note speaker - in Spanish)." *Proc., I Conference in Hydraulics of Rivers and Channels*, Lima, Peru. *
88. **Leon, A. S.** (2003). "One-dimensional modeling of the intrusion of contaminants for conservative substances in non-permanent and non-uniform flows (In Spanish)." *Proc., XIV National congress of Civil Eng.*, Iquitos, Peru. *
89. **Leon, A. S.** (2002). "Alternative of hydraulic design for intakes in steep rivers and large transport of boulders. (In Spanish)." *Proc., Instituto de la Construcción y Gerencia*, Lima, Peru. *
90. **Leon, A. S.** (1999). "Local scour around cylindrical piers in non-cohesive beds (In Spanish)." *Proc., XII National congress of Civil Eng.*, Huánuco, Peru. *

Posters (NPR):

91. Strane M. S., Louie S., Pennings S. C., and **Leon, A. S.** (2022). "Constructed Wetlands at The University of Houston Coastal Center." Poster presented in the Joint Aquatic Sciences Meeting (JASM), Grand Rapids, Michigan, May 18, 2022. §
92. Verma V., Bian L., Rojali A., Ozecik D., and **Leon, A. S.** (2019). "Flood Control using smart low-cost hardware for remote operation of siphons and outlet gates in a network of storage systems." Poster presented in the 2019 Annual Water Resources Conference, Salt Lake City, UT, November 03, 2019. †
93. Hogan A. and **Leon, A. S.** (2019). "EcoFLow: Sustainable and Smart Stormwater Solutions for Future Generations of South Florida." Poster presented in the Conference for Undergraduate Research at FIU (CURFIU), Miami, FL, April 08, 2019. †
94. **Leon, A. S.** and Goodell, C. (2017). "Automation of HEC-RAS using MATLAB." Poster presented in the *ASCE-EWRI World Environmental & Water Resource Congress*, Sacramento, CA, May 21-25, 2017. *
95. Chen, D., **Leon, A. S.**, Hosseini, P. (2016). "A warm-start Strategy to Improve the Performance of an Evolutionary Algorithm for Optimizing Operation of Multi-reservoirs." Poster presented in the ASCE-EWRI World Environmental & Water Resource Congress, West Palm Beach, FL, May 22-26, 2016. †
96. **Leon, A. S. and** Elayeb, I., (2016). "An Experimental Study on Geysers with Unsaturated Air and Near-saturation CO_2. Implications on the Design of Stormwater and Combined Sewer Systems." Poster presented in the ASCE-EWRI World Environmental & Water Resource Congress, West Palm Beach, FL, May 22-26, 2016. *
97. Elayeb, I., and **Leon, A. S.** (2016). "An experimental study on air- and CO_2 based geyser flows" Poster presented in the Water Research Symposium, Oregon State University, Corvallis, Oregon, April 18, 2016. †
98. Hosseini, P., Chen D., **Leon, A. S.** and Gibson N. (2016). "Optimization of reservoir operation considering uncertain decision variables." Poster presented in the Water Research Symposium, Oregon State University, Corvallis, Oregon, April 18, 2016. †
99. Choi, Y., **Leon, A. S.**, and Apte, S. (2016). "A one-dimensional numerical model for predicting pressure and velocity oscillations due to buoyancy of a compressed air-pocket in a vertical

shaft" Poster presented in the Water Research Symposium, Oregon State University, Corvallis, Oregon, April 18, 2016. †

100. Elayeb, I., and **Leon, A. S.** (2016). "An experimental study of geyser occurrence in combined sewer systems" Poster presented in the Oregon State COE Graduate Student Research Expo, Portland, March 01, 2016. †
101. Choi, Y., **Leon, A. S.**, and Apte, S. (2016). "A one-dimensional numerical model for predicting pressure and velocity oscillations due to buoyancy of a compressed air-pocket in a vertical shaft." Poster presented in the Oregon State COE Graduate Student Research Expo, Portland, March 01, 2016. †
102. Hosseini, P., Chen, D. **Leon, A. S.**, Gibson, N. (2016). "Robust Optimization of Reservoir Operation Considering Uncertainty of Inflows and Flexible Decision Variables." Poster presented in the Oregon State COE Graduate Student Research Expo, Portland, March 01, 2016. †
103. Alnahit, A. O., and **Leon, A. S.** (2015). "A Remotely Controlled Siphon System for Dynamic Water Storage Management." Poster presented in the American Geophysical Union Fall Meeting, San Francisco, California, December 14-18, 2015. †
104. Choi, Y., **Leon, A. S.**, and Apte, S. (2015). "A one-dimensional numerical model for predicting pressure and velocity oscillations of a compressed air-pocket in a vertical shaft." Poster presented in the American Geophysical Union Fall Meeting, San Francisco, California, December 14-18, 2015. †
105. Hosseini, P., Chen, D., **Leon, A. S.** and Gibson, N. (2015). "Flexible Decision Variables in Short-term Operation of Reservoirs Using Dimension Reduction Approach." Poster presented in the American Geophysical Union Fall Meeting, San Francisco, California, December 14-18, 2015. †
106. Elayeb, I. S., **Leon, A. S.**, Choi, Y., and Alnahit, A. O. (2015). "An experimental study of geyser-like flows induced by a pressurized air pocket." Poster presented in the American Geophysical Union Fall Meeting, San Francisco, California, December 14-18, 2015. †
107. Chen, D., **Leon, A. S.**, Hosseini, P., and Gibson, N. (2015). "Robust multi-objective optimization for short-term reservoir operation under inflow uncertainty." Poster presented in the American Geophysical Union Fall Meeting, San Francisco, California, December 14-18, 2015. †
108. Hosseini, P., and **Leon, A. S.** (2015). "Multi-Objective Optimization of Reservoir Operation Considering Flexibility in Decision Variables." Poster presented in the OSU College of Engineering Research Engineering Expo, Portland, March 04, 2015. **Parnian received the Runner-up Award** (School of Civil and Construction Engineering). †
109. Choi, Y., **Leon, A. S.**, and Apte, S. (2014). "Predicting Air-Water Geysers and their Implications on Reducing Combined Sewer Overflows." Poster presented in the American Geophysical Union Fall Meeting, San Francisco, California, December 15-19, 2014. †
110. Livingston, G. E., **Leon, A. S.** and Babbar-Sebens, M. (2014). "Oregon BEST Lab: OSU-Benton County, Green Stormwater Infrastructure Research Facility." Poster presented in the Oregon BEST FEST, Portland, Oregon, September 15th –16th, 2014. §
111. Livingston, G. E., Babbar-Sebens, M. and **Leon, A. S.** (2014). "Green Infrastructure for Stormwater Treatment." Poster presented in the Water Research Symposium, Oregon State University, Corvallis, Oregon, May 12, 2014. §
112. Choi, Y., **Leon, A. S.**, and Apte, S. (2014). "Three-Dimensional Numerical Study of the Turbulent Flow Structures Present in Air-Water Geyser Flows." Poster presented in the Water Research Symposium, Oregon State University, Corvallis, Oregon, May 12, 2014. †

113. Hosseini, P., and **Leon, A. S.** (2014). "A Multi-Objective Optimization for the Operation of Multi-Reservoir Systems under Uncertainty." Poster presented in the Water Research Symposium, Oregon State University, Corvallis, Oregon, May 12, 2014. †
114. Gomez, L., Lee, H. W, and **Leon, A. S.** (2014). "A Domain Decomposition strategy for Unsteady Flow Routing in River Systems." Poster presented in the Water Research Symposium, Oregon State University, Corvallis, Oregon, May 12, 2014. †
115. Hosseini, P., and **Leon, A. S.** (2014). "Effects of small tidal-type waves on average flow discharge in mild-sloped rivers and canals." Poster presented in the OSU College of Engineering Research Engineering Expo, Portland, OR, 2014. †
116. Hosseini, P., **Leon, A. S.** and Chen D. (2014). "A Framework for Optimizing Short-time Operation of Multiple Reservoirs with Multi-objectives Under Uncertainty." Poster presented in the OSU College of Engineering Research Engineering Expo, Portland, OR, 2014. †
117. **Leon, A. S.**, Gifford-Miears C. and Gomez L. (2013). "Unsteady flow routing using Performance Graphs based on two-dimensional hydrodynamic simulations" Poster presented in the ASCE-EWRI World Environmental & Water Resource Congress, *Cincinnati OH*, May 19-22, 2013. *
118. **Leon, A. S.** and Choi Y. (2013). "A new numerical model that preserves "lake at rest" conditions in open-channel and surcharged flows in steep-slope closed conduit systems" Poster presented in the ASCE-EWRI World Environmental & Water Resource Congress, *Cincinnati OH*, May 19-22, 2013. *
119. Gomez, L., Lee, H. W, and **Leon, A. S.** (2013). "A *real options*-based framework to evaluate investments in river flood control under uncertainty." Poster presented in the Water Research Symposium, Oregon State University, Corvallis, Oregon, May 13, 2013. †
120. Gomez, L., and **Leon, A. S.** (2013). "The OSU Rivers Model and its Comparison with the Unsteady HEC-RAS Model." Poster presented in the Water Research Symposium, Oregon State University, Corvallis, Oregon, May 13, 2013. †
121. **Leon, A. S.**, Gichamo, T. Z., Valverde, R., and Rask, J. (2012). "Hydraulic performance graph-based model for unsteady flow simulations in topologically complex river networks." Poster presented in the XIX International Conference on Computational Methods in Water Resources (CMWR), University of Illinois at Urbana-Champaign, Urbana, Illinois, June 17-21, 2012. *
122. Choi, Y., and **Leon, A. S.** (2012). "Design, Analysis and Implementation of Multipurpose River Research Facility at O.H. Hinsdale Wave Research Laboratory." Poster presented in the 2012 Water Research Symposium, Oregon State University, Corvallis, Oregon, May 18, 2012. †
123. Bernedo C., Salas, J. and **Leon, A. S.** (2012). "Considering climate uncertainties to determine hydrologic design criteria – Does traditional Rainfall-Frequency Analysis works?" Poster presented in the ASCE-EWRI World Environmental & Water Resource Congress, Albuquerque, NM, May 20-24, 2012. §

CHAPTERS IN BOOKS

1. **A. S. Leon**, N. Oberg, A. R. Schmidt and M. H. García (2011). "The Illinois Transient Model. A state-of-the-art model for simulating flow dynamics in combined storm-sewer systems". *Urban Water Systems*, Monograph 19.
2. **A. S. Leon**, M. S. Ghidaoui, A. R. Schmidt and M. H. García (2007). "An efficient finite-volume scheme for modeling water hammer flows." *Contemporary Modeling of Urban Water Systems*, Monograph 15.

GOVERNMENT REPORTS OR MONOGRAPHS

N/A

BOOK REVIEWS

1. Hydrologic Analysis and Design, 4th Edition, by Richard McCuen, November 2014
2. Sustainable Water Resources Planning and Management, by Larry W. Mays and Y.K. Tung, August 2013

G. OTHER PUBLICATIONS

Professional Reports

1. **Leon, A. S.**, and Rossman, L. A. (2025). User's manual for Illinois Transient Model v. 2.0", Florida International University, Miami (https://web.eng.fiu.edu/arleon/ITM.htm).
2. **Leon, A. S.**, and Rossman, L. A. (2025). User's manual for ITM-SWMM 1.0", Florida International University, Miami (https://web.eng.fiu.edu/arleon/ITM-SWMM.htm).
3. **Leon, A. S.** (2024). "Dynamics of Geysers in Stormsewer Systems and Novel Retrofitting Methods", **Final Report** prepared for the U.S. National Science Foundation.
4. **Leon, A. S.** (2023). "Dynamic Management of Water Storage in Watersheds for Reducing the Magnitude of Floods", **Final Report** prepared for the U.S. National Science Foundation.
5. **Leon, A. S.** (2023). "Wetland facility for the University of Houston Coastal Center", **Final Report** prepared for the U.S. National Science Foundation.
6. **Leon, A. S.**, and other nine co-authors (2018). "Framework for Quantification of Risk and Valuation of Flexibility in the FCRPS – **Final Report, Software and User's Manual**", Report, Software and User's Manual prepared for the Bonneville Power Administration, US Department of Energy.
7. **Leon, A. S.**, and other nine co-authors (2018). "Framework for Quantification of Risk and Valuation of Flexibility in the FCRPS – **Stage gate 5**", Report prepared for the Bonneville Power Administration, US Department of Energy.
8. **Leon, A. S.** (2017). "Prediction and quantification of CSOs in combined sewer systems under extreme storm events: Extreme events, Flow dynamics, Reduction of CSOs", **Final Report** prepared for the U.S. Environmental Protection Agency.
9. **Leon, A. S.**, and other nine co-authors (2017). "Framework for Quantification of Risk and Valuation of Flexibility in the FCRPS – **Stage gate 4**", Report prepared for the Bonneville Power Administration, US Department of Energy.
10. **Leon, A. S.**, and other nine co-authors (2017). "Framework for Quantification of Risk and Valuation of Flexibility in the FCRPS – **Stage gate 3**", Report prepared for the Bonneville Power Administration, US Department of Energy.
11. **Leon, A. S.**, and other eight co-authors (2016). "Framework for Quantification of Risk and Valuation of Flexibility in the FCRPS – **Stage gate 2**", Report prepared for the Bonneville Power Administration, US Department of Energy.
12. **Leon, A. S.** (2016). "Prediction and quantification of CSOs in combined sewer systems under extreme storm events: Extreme events, Flow dynamics, Reduction of CSOs", Progress Report **Year 4** prepared for the U.S. Environmental Protection Agency.
13. **Leon, A. S.**, and other eight co-authors (2016). "Framework for Quantification of Risk and Valuation of Flexibility in the FCRPS – **Stage gate 1**", Report prepared for the Bonneville Power Administration, US Department of Energy.
14. **Leon, A. S.**, and other nine co-authors (2015). "Development of a state-of-the-art computational framework and platform for the optimal control of multi-reservoir systems under uncertainty – **Final Report, Software and Other Deliverables**", Report prepared for the Bonneville Power Administration, US Department of Energy.

15. **Leon, A. S.**, and Choi Y. (2015). "Prediction and quantification of CSOs in combined sewer systems under extreme storm events: Extreme events, Flow dynamics, Reduction of CSOs", Progress Report **Year 3** prepared for the U.S. Environmental Protection Agency.
16. Babbar-Sebens M. and **Leon, A. S.** (2015). "Improving sustainability of urban streets via rain gardens – How effective are these practices in the Pacific Northwest?", Final Project Report prepared for the Pacific Northwest Transportation Consortium (PacTrans), USDOT University Transportation Center for Federal Region 10, University of Washington.
17. **Leon, A. S.**, and other nine co-authors (2015). "Development of a state-of-the-art computational framework and platform for the optimal control of multi-reservoir systems under uncertainty - **Stage gate 6**", Report prepared for the Bonneville Power Administration, US Department of Energy.
18. **Leon, A. S.**, and other nine co-authors (2014). "Development of a state-of-the-art computational framework and platform for the optimal control of multi-reservoir systems under uncertainty - **Stage gate 5**", Report prepared for the Bonneville Power Administration, US Department of Energy.
19. **Leon, A. S.**, and Choi Y. (2014). "Prediction and quantification of CSOs in combined sewer systems under extreme storm events: Extreme events, Flow dynamics, Reduction of CSOs", Progress Report **Year 2** prepared for the U.S. Environmental Protection Agency.
20. **Leon, A. S.**, and other nine co-authors (2014). "Development of a state-of-the-art computational framework and platform for the optimal control of multi-reservoir systems under uncertainty - **Stage gate 4**", Report prepared for the Bonneville Power Administration, US Department of Energy.
21. **Leon, A. S.**, and other nine co-authors (2013). "Development of a state-of-the-art computational framework and platform for the optimal control of multi-reservoir systems under uncertainty - **Stage gate 3**", Report prepared for the Bonneville Power Administration, US Department of Energy.
22. **Leon, A. S.**, and Choi Y. (2013). "Prediction and quantification of CSOs in combined sewer systems under extreme storm events: Extreme events, Flow dynamics, Reduction of CSOs", Progress Report **Year 1** prepared for the U.S. Environmental Protection Agency.
23. **Leon, A. S.**, and other nine co-authors (2013). "Development of a state-of-the-art computational framework and platform for the optimal control of multi-reservoir systems under uncertainty - **Stage gate 2**", Report prepared for the Bonneville Power Administration, US Department of Energy.
24. **Leon, A. S.**, and Oberg, N. (2013). "User's manual for Illinois Transient Model-two equation model v. 1.3. A Model for the Analysis of Transient Free surface, Pressurized and Mixed flows in Storm-sewer Systems", Oregon State University, Corvallis.
25. **Leon, A. S.**, and other nine co-authors (2012). "Development of a state-of-the-art computational framework and platform for the optimal control of multi-reservoir systems under uncertainty - **Stage gate 1**", Report prepared for the Bonneville Power Administration, US Department of Energy.
26. **Leon, A. S.**, and Oberg, N. (2010). "User's manual for Illinois Transient Model-two equation model. A Model for the Analysis of Transient Free surface, Pressurized and Mixed flows in Storm-sewer Systems. Version 1.2".
27. **Leon, A. S.**, and Oberg, N. (2009). "Illinois Transient Model Programmer's Manual", University of Illinois at Urbana-Champaign.
28. **Leon, A. S.**, Oberg, N., Choi, N.J., Schmidt, A., and García, M.H., 2009. "Transient Analysis of the Calumet TARP System" Report prepared for the Metropolitan Water Reclamation District of Greater Chicago. University of Illinois at Urbana-Champaign, Civil Engineering Studies, Hydraulic Engineering Series.

29. Cataño-Lopera Y. A., Oberg N., Choi N. J., Schmidt, A. R., **Leon, A. S.**, and Garcia, M. H. (2009). "Hydraulic Conveyance Analysis of the Tarp Calumet System." Report prepared for the Metropolitan Water Reclamation District of Greater Chicago. University of Illinois at Urbana-Champaign, Civil Engineering Studies, *Hydraulic Engineering Series*.
30. **Leon, A. S.**, and Oberg, N. (2009). "User's manual for Illinois Transient Model-two equation model v. 1.1. A Model for the Analysis of Transient Free surface, Pressurized and Mixed flows in Storm-sewer Systems", University of Illinois at Urbana-Champaign.
31. Oberg, N., Schmidt, A., **Leon, A. S.**, Waratuke, A., and García, M.H., 2008. "Illinois Hydraulic Conveyance Analysis Program: ICAP." Report prepared for the Metropolitan Water Reclamation District of Greater Chicago (MWRDGC). University of Illinois at Urbana-Champaign, Civil Engineering Studies, *Hydraulic Engineering Series* No. 81, ISSN: 0442-1744.
32. **Leon, A. S.**, Christensen, D. R., Schmidt, A. R., and García, M. H. (2007). "Illinois Transient Model (One-equation model) user's manual. A Model for the Analysis of Unsteady Free surface, Pressurized and Mixed flows in Storm-sewer Systems", University of Illinois at Urbana-Champaign.
33. García, M. H., **Leon, A. S.**, Ancalle, C. (2007) "Sedimentation analysis of Valenciano reservoir, Juncos, Puerto Rico", Prepared by CA Engineering for CSA Group, San Juan, Puerto Rico.
34. García, M. H., **Leon, A. S.**, Ancalle, C. (2007) "Safe yield Analysis of Valenciano reservoir, Juncos, Puerto Rico", Prepared by CA Engineering for CSA Group, San Juan, Puerto Rico.
35. **Leon, A. S.**, Schmidt, A. R., Ghidaoui, M. S. and García, M. H. (2006) "Review of sewer surcharging phenomena and models." University of Illinois at Urbana-Champaign. *Civil Engineering Studies, Hydraulic Engineering Series No. 78*.
36. García, M. H., Niño, Y., Abad, J. D., Cantero, M., **Leon, A. S.**, Manzini, S., Sequeiros, O. (2003) "Sedimentation management in combined sewer overflow storage reservoirs using water jets." University of Illinois at Urbana-Champaign. Report to Metropolitan Water Reclamation District of Greater Chicago.

H. PRESENTED PAPERS, AND LECTURES

INVITED-KEYNOTE

1. Keynote Talk, *X Seminario Internacional de Ingenieria Civil, Universidad Nacional San Cristobal de Huamanga, Ayacucho, Peru*, Virtual Conference, "Towards Minimizing Combined Sewer Overflows Using AI (In Spanish) (https://web.eng.fiu.edu/arleon/Awards/Arturo_X_Seminar_2024.pdf)," December 04, 2024.

2. Keynote Talk, International Association for Hydro-Environment Engineering and Research (IAHR) Online Short Course: Perspectives on Two-phase Flows in Urban Water Systems, "Mitigation strategies for air-water issues in gravity-based systems" (https://www.iahr.org/index/detail/832), May 10, 2023.

3. Keynote Talk, IX Seminario Internacional de Ingenieria Civil, Ayacucho, Peru, Virtual Conference, "Towards minimizing overflows in combined sewer systems (In Spanish)," November 30, 2022.
4. Keynote Talk, 2021 International Workshop on Sustainable Urban Drainage, Virtual Conference, "Geysers in Sewer Systems and Physics-based AI for CSO Mitigation," August 06, 2021.
5. Keynote Talk, *HGS Flood Conference: FLOODING IN SOUTHEAST TEXAS: THE SCIENCE BEHIND THE FLOODS* (https://www.hgs.org/civicrm/event/info?id=1958)*, Houston, Texas,* "Towards smart and green flood control," June 2018.
6. Keynote Talk, *XXIV Congreso Nacional de Estudiantes de Ingenieria Civil del Perú* (http://coneic2016.com/), *Ayacucho, Peru,* "State-of-the-art strategies on flood mitigation, reservoir operation and control of geyser eruptions in stormwater and combined sewer systems," August 2016.
7. Keynote Talk, *Pacific Northwest Waterways Association (PNWA) Summer Conference, Hood River, OR,* "Development of a Computational Framework for the Optimal Control of Multi-Reservoir Systems Under Uncertainty: Application to the Columbia River System", June 2015
8. Keynote Talk, *X Congreso Latinoamericano de Estudiantes de Ingenieria Civil - XXII Congreso Nacional de Estudiantes de Ingenieria Civil del Perú* (http://www.coleic-coneic2014.com/), *Arequipa, Peru,* "Recent advances on Flood Control, Reservoir Operation and Transient Flows," August 2014

INVITED-OTHER

9. Invited Talk, St. Louis Section of ASCE-EWRI, Monthly Speaker Series Event, "Towards minimizing sewer overflows," September 21, 2023
10. Invited Talk, FIU Department of Politics and International Relations, Miami, FL, Politics of Disaster seminar, "Simulation of natural Hazards," March 10, 2023.
11. Invited Talk, University of Miami, Miami, FL, "Towards minimizing overflows in combined sewer systems," September 16, 2022.
12. Invited Talk, FIU Department of Politics and International Relations, Miami, FL, Politics of Disaster seminar, "Simulation of natural Hazards," March 10, 2022.
13. Invited Talk, Vicksburg District, U. S. Army Corps of Engineers, Vicksburg, MS, "Potential Areas for Research Collaboration on Coastal and Hydraulic Engineering," August 04, 2021.
14. Invited Talk, Universidad Peruana de Ciencias Aplicadas, Lima, Peru, Virtual Seminar, "Geysers in Sewers and "Smart" and "Green" Flood Control," October 02, 2020.
15. Invited Talk, FIU Department of Mechanical and Materials Engineering Graduate Seminar, Miami, FL, "Violent Geysers in Stormsewer Systems and Towards "Smart" and "Green" Flood Control," January 24, 2020.

16. Invited Talk, South Florida Water Management District, West Palm Beach, FL, "Optimal Multi-objective Reservoir Operation and Decision Support System/Low-Cost Hardware for Automated and Remote Control of Hydraulic Systems," May 2, 2019.
17. Invited Talk, "Lunch n' Learn" at FIU Miami Beach Urban Studios, Miami Beach, FL, "Towards Smart and Green control of Stormwater Quantity and Quality. Coastal Communities in the not so near future," April 12, 2019.
18. Invited Talk, Department of Civil and Environmental Engineering, University of Missouri, Columbia, MO – "*Violent Geysers in Stormwater and Combined Sewer Systems: Experimental and Numerical Modeling,*" May 2018.
19. Invited Talk, Department of Civil and Environmental Engineering, Utah State University, Logan, UT – "*Violent Geysers in Stormwater and Combined Sewer Systems: Experimental and Numerical Modeling,*" March 2018.
20. Invited Talk, Department of Civil and Environmental Engineering, Florida International University, Miami, FL – "*Violent Geysers in Stormwater and Combined Sewer Systems: Experimental and Numerical Modeling,*" March 2018.
21. Invited Talk, Center for Thermo-Fluid Mechanics Seminar, University of Houston, Houston, TX, "Violent Geysers in Stormwater and Combined Sewer Systems: Experimental and Numerical Modeling," April 2017.
22. Invited Talk, Harris County Flood Control District, Houston, TX, "Flood Control Research and Applications," March 2017.
23. Invited Talk, Technology Innovation Summit, Bonneville Power Administration, Portland, OR, "Framework for Quantification of Risk and Valuation of Flexibility in the Federal Columbia River Power System (FCRPS)," January 2017.
24. Invited Talk, Department of Civil and Environmental Engineering, University of Houston, Houston, TX, "*Violent Geysers in Stormwater and Combined Sewer Systems: Experimental and Numerical Modeling*," March 2016.
25. Invited Talk, Department of Civil and Environmental Engineering, University of Texas at Arlington, Arlington, TX – "*Violent Geysers in Stormwater and Combined Sewer Systems: Experimental and Numerical Modeling,*" March 2016.
26. Invited Talk, Technology Innovation Summit, Bonneville Power Administration, Portland, OR, "Framework for Quantification of Risk and Valuation of Flexibility in the Federal Columbia River Power System (FCRPS)," January 2016.
27. Invited Talk, *Changjiang River Scientific Research Institute (CRSRI), Wuhan, Hubei, China*, "Recent Advances on Flood Control and Reservoir Operation", May 2015.
28. Invited Talk, *Winter Seminar Series, Water Resources Graduate Program, Oregon State University, Corvallis, OR,* "Development of Computer Models for the Optimal Control of Multi-Reservoir Systems Under Uncertainty: Application to the Columbia River System," March 2015
29. Invited Talk, Technology Innovation Summit, Bonneville Power Administration, Portland, OR, "Development of a computational framework and platform for the optimal control of multi-reservoir systems under uncertainty," January 2015.
30. Invited Talk, Geosyntec, Portland, OR, "Stormwater and Reservoir Operation Research and Potential Collaborations between OSU and Geosyntec," June 2014.
31. Invited Talk, Technology Innovation Summit, Bonneville Power Administration, Portland, OR, "Development of a computational framework and platform for the optimal control of multi-reservoir systems under uncertainty," January 2014.
32. Invited Talk, *EPA RESEARCH FORUM: Extreme Event Impacts on Air Quality and Water Quality with a Changing Global Climate, Arlington, VA,* "Prediction and quantification of CSOs under extreme storm events: Flow dynamics and Reduction of CSOs," February 2013.

33. Invited Talk, Technology Innovation Summit, Bonneville Power Administration, Portland OR "Development of a computational framework and platform for the optimal control of multi-reservoir systems under uncertainty," January 2013.
34. Invited Talk, *Reservoir System Modeling Technologies Conference, Bonneville Power Administration, Portland, OR,* "A Computationally Efficient and Robust Approach for Multi-objective Operation of Multi-reservoir systems Subjected to Multiple Constraints," February 2012.
35. Invited Talk, *Winter Seminar Series, Department of Mathematics, Oregon State University, Corvallis, OR,* "Towards the intelligent control of river flooding. Harmonizing long-term objectives with the flooding objective," February 2012
36. Invited Talk, Universidad Nacional San Cristobal de Huamanga, Ayacucho, Peru, "Real-time Control of Multi-Objective and Multi-Reservoir Systems," December 2011
37. Invited Talk, Universidad Nacional de Ingenieria, Lima, Peru, "Real-time Control of Multi-Objective and Multi-Reservoir Systems," December 2011
38. Invited Talk, Bonneville Power Administration (BPA), Portland, Oregon, "Towards Real-time Control of Multi-objective and Multi-Reservoir Systems," October 2011.
39. Invited Talk, Ecosystem Informatics at Oregon State University (IGERT), Corvallis, OR, "Towards Real-time Control of Multi-objective and Multi-Reservoir Systems," May 2011.
40. Invited Talk, Universidad Nacional de Ingenieria, Lima, Peru, "Modeling of Combined Sewer Systems," December 2010
41. Invited Talk, Montgomery Watson and Harza Engineering (MWH), Denver, CO, "Modeling of Unsteady Flows using HEC-RAS," July 2010
42. Invited Talk, Oregon State University, Corvallis, OR, "Towards Real-time Control of Reservoir Systems," May 2010
43. Invited Talk, University of Idaho, Boise, Idaho, "Application of Genetic Algorithms to the Operation of Reservoir Systems," May 2010
44. Invited Talk, Boise State University, Boise, ID, "Towards Real-time Control of Combined Sewer Systems," March 2009
45. Invited Talk, University of Illinois at Urbana-Champaign, Urbana, IL, "A mathematical and numerical model for the simultaneous occurrence of free surface and pressurized flows," May 2006
46. Invited Talk, Universidad Nacional de Ingenieria, Lima, Peru, "Transient flows in Combined Sewer Systems," December 2005
47. Invited Talk, *I Conference in Hydraulics of Rivers and Channels, Lima, Peru,* "Special Topics in Unsteady Flows and its Applications to Hydraulic Engineering," December 2004
48. Invited Talk, Universidad Nacional San Cristobal de Huamanga, Ayacucho, Peru, "Unsteady transition between free surface and pressurized flows (In Spanish)," December 2004.

NON-INVITED (CONTRIBUTED TALKS)

49. Contributed Talk, *ASCE-EWRI World Environmental & Water Resource Congress*, Anchorage, AK, "Heat Island Modeling and Field Measurements: A Case Study of three sites in Miami, Florida," May 2025.
50. Contributed Talk, *ASCE-EWRI World Environmental & Water Resource Congress*, Milwaukee, WI, "New Insights on Geyser Processes in Sewer Systems Through Laboratory Experimentation and Numerical Modeling," May 2024.
51. Contributed Talk, *ASCE-EWRI World Environmental & Water Resource Congress*, Milwaukee, WI, "Exploring Three-Dimensional Computational Fluid Dynamics Modeling for Microclimatic Wind and Urban Thermal Environment: A Case Study of the Miami Design District in Miami, Florida," May 2024.

52. Contributed Talk, ASCE-EWRI World Environmental & Water Resource Congress (virtual), "Laboratory Tests and OpenFOAM Simulations of Field-Scale Stormsewer Geysers and Retrofitting Methods for their Control," June 2021.
53. Contributed Talk (with Linlong Bian and Vivek Verma), ASCE-EWRI World Environmental & Water Resource Congress (virtual), "Operational Reliability Assessment of a Remotely-controlled Siphon System for Draining Shallow Storage Ponds," June 2021.
54. Contributed Talk (with Vivek Verma and Linlong Bian), ASCE-EWRI World Environmental & Water Resource Congress (virtual), "Internet-enabled remotely controlled architecture to release water from storage units," June 2021.
55. Contributed Talk (with Linlong Bian and Vivek Verma), ASCE-EWRI World Environmental & Water Resource Congress (virtual), "A Feasibility Study on Harvesting Rainwater from Large Solar Panel Canopies to Supplement Makeup Water for Cooling Towers by Using Remotely Controlled and Self-Cleaning Rain Cistern," June 2021.
56. Contributed Talk, *2020 Florida Stormwater Association (FSA) Winter Conference*, "DSS for Operation of a Network of Storage Ponds for Mitigating Floods," December 2020.
57. Contributed Talk, *38th IAHR World Congress*, Panama City, Panama, "Experiments and Numerical Modeling of Field-Scale Geysers in Stormsewer Systems", September 2019.
58. Contributed Talk, *ASCE-EWRI World Environmental & Water Resource Congress,* Pittsburgh, PA, "Decision Support System for the remote and optimal operation of control structures in a network of storage systems for mitigating floods," May 2019.
59. Contributed Talk, *ASCE-EWRI World Environmental & Water Resource Congress,* Pittsburgh, PA, "Towards Smart and Green Flood Control: Remote and optimal operation of control structures in a network of storage systems for mitigating floods," May 2019.
60. Contributed Talk, ASCE-EWRI World Environmental & Water Resource Congress, Pittsburgh, PA, "Upper Limit Velocity of Geyser Eruptions in Stormwater and Combined Sewer Systems," May 2019.
61. Contributed Talk, *ASCE-EWRI World Environmental & Water Resource Congress, Minneapolis MN,* "Chain mechanisms preceding and during violent geysers in sewer systems," June 2018.
62. Contributed Talk, *The 8th International Symposium on Environmental Hydraulics*, Notre Dame, IN*,* "Physical mechanisms preceding and during violent geysers in sewer systems," June 2018.
63. Contributed Talk, *37th IAHR World Congress*, Kuala Lumpur, Malaysia, "Mechanisms that lead to the occurrence of violent geysers in storm water and combined sewer systems", August 2017.
64. Contributed Talk, *37th IAHR World Congress*, Kuala Lumpur, Malaysia, "Dynamic management of water storage of wetlands and shallow ponds for flood control", August 2017.
65. Contributed Talk, *ASCE-EWRI World Environmental & Water Resource Congress, Sacramento CA,* "Why Violent Geysers Occur in Stormwater and Combined Sewer Systems," May 2017.
66. Contributed Talk, *6th International Symposium on Hydraulic Structures, Portland OR,* "Determining Optimal Discharge and Optimal Penstock Diameter in Water Turbines," June 2016.
67. Contributed Talk, *6th International Symposium on Hydraulic Structures, Portland OR,* "A Remotely Controlled Siphon System for Dynamic Water Storage Management," June 2016.
68. Contributed Talk, *ASCE-EWRI World Environmental & Water Resource Congress,* West Palm Beach, FL, "New Evidences on the Causes of Explosives Geysers in Stormwater and Combined Sewer Systems: A Simplified Model for Prediction of These Geysers," May 2016.
69. Contributed Talk, *International Conference on Water Management Modeling, Toronto Canada,* "New insights on the causes of explosives geysers in stormwater and combined sewer systems: A model for their prediction.," February 2016
70. Contributed Talk, *American Geophysical Union Fall Meeting, San Francisco CA,* "Minimizing water consumption when producing hydropower," December 2015.

71. Contributed Talk, *ASCE-EWRI World Environmental & Water Resource Congress, Portland OR,* "Effects of Small Tidal-type Waves on Rating Curves in Rivers," June 2014.
72. Contributed Talk, *ASCE-EWRI World Environmental & Water Resource Congress, Portland, OR,* "A Dimensional Analysis for Determining Optimal Discharge and Optimal Penstock Diameter in Impulse and Reaction Water Turbines," June 2014.
73. Contributed Talk, *AWRA Annual Water Resources Conference, Portland, OR,* "Development of a State-of-the-Art Computational Framework for the Optimal Control of Multi-Reservoir Systems Under Uncertainty," November 2013.
74. Contributed Talk, City of Portland, Environmental Services, Portland OR, "Flow Dynamics in Combined Storm-sewer Systems. Modeling needs and Application of the Illinois Transient Model (ITM)," October 2013.
75. Contributed Talk, ASCE-EWRI World Environmental & Water Resource Congress, Cincinnati, OH, "A Framework for Propagation of Uncertainty in River Systems," May 2013
76. Contributed Talk, *XIX International Conference on Computational Methods in Water Resources (CMWR), Urbana, IL,* "Toward Reduction of Uncertainty in Complex Multi-reservoir River Systems," June 2012.
77. Contributed Talk, *XIX International Conference on Computational Methods in Water Resources (CMWR), Urbana, IL,* "Towards the Intelligent Control of River Flooding. Harmonizing Long-term Objectives (e.g., irrigation, hydropower) with the Flooding Objective," June 2012
78. Contributed Talk, *ASCE-EWRI World Environmental & Water Resource Congress, Albuquerque, NM,* "A Robust, Numerically Efficient Model for Unsteady Flow Routing in Topologically Complex River Networks," May 2012
79. Contributed Talk, *ASCE-EWRI World Environmental & Water Resource Congress, Albuquerque, NM,* "Towards the Intelligent Control of River Flooding," May 2012
80. Contributed Talk, *Oregon Water Conference, Corvallis, OR,* "A Novel Physically-based Framework for the Intelligent Control of River Flooding," May 2011
81. Contributed Talk, *Watershed Management Conference, Theme: "Innovations in Watershed Management Under Land Use and Climate Change", Madison, WI,* "A New Coupled Optimization-hydraulic Routing Model for Real-time Operation of Highly Complex Regulated River Systems," August 2010
82. Contributed Talk, *ASCE-EWRI World Environmental & Water Resource Congress, Providence, RI,* "Flow Dynamics in Combined Storm-Sewer Systems: Application of the Illinois Transient Model (ITM) to the Calumet TARP System in Chicago, Illinois," May 2010
83. Contributed Talk, *ASCE-EWRI World Environmental & Water Resource Congress, Kansas City, MO,* "A Robust and Fast Model for Simulating Street Flooding," May 2009
84. Contributed Talk, *ASCE-EWRI World Environmental & Water Resource Congress, Kansas City, MO,* "Boundary Conditions for Simulating Complex Storm-sewer Systems in Free Surface, Pressurized, and Mixed Flow Conditions," May 2009
85. Contributed Talk, *10th International Conference on Pressure Surges, BHR Group, Edinburgh, United Kingdom* "A Shock-capturing Approach for Simulating Gravity Flows, Pressurized Flows and the Simultaneous Occurrence of Gravity and Pressurized Flows," May 2008
86. Contributed Talk, *World Water and Environmental Resources Congress, Honolulu HI,* "A Finite Volume Model for Mixed Free Surface-pressurized Flows in Drainage Systems," May 2008
87. Contributed Talk, *World Water and Environmental Resources Congress, Honolulu HI,* "Experimental and CFD Modeling of a Vortex Flow Restrictor," May 2008
88. Contributed Talk, *5th International Symposium on Environmental Hydraulics, Tempe AZ* "Godunov-type Solutions for Two-phase Water Hammer Flows," December 2007
89. Contributed Talk, *Contemporary Modeling of Urban Water Systems, Toronto Canada,* "An efficient finite-volume scheme for modeling water hammer flows.," February 2007

90. Contributed Talk, *Annual Illinois Water Conference, Urbana IL,* "Towards Modeling for Real-time Control of Combined Sewer Overflow Systems: Application to the Calumet TARP System in Chicago, Illinois," October 2006
91. Contributed Talk, *I International Congress of Hydraulics, Hydrology and Environment, Lima, Peru* "Efficient Numerical Modeling of One and Two-phase Transient Flows (In Spanish)," June 2006
92. Contributed Talk, *I International Congress of Hydraulics, Hydrology and Environment, Lima, Peru,* "New Numerical Model for the Simultaneous Simulation of Unsteady Free Surface and Pressurized Flows (In Spanish)," June 2006.
93. Contributed Talk, *World Environmental & Water Resources Congress, Omaha NE,* "An Efficient Numerical Scheme for the Modeling of Two-phase Bubbly Homogeneous Air-water Mixtures," May 2006
94. Contributed Talk, *XXXI IAHR Congress, Seoul, Korea,* "Importance of Numerical Efficiency for Real-Time Control of Transient Gravity Flows in Sewers," September 2005
95. Contributed Talk, *XIV National congress of Civil Engineering, Iquitos, Peru,* "One-dimensional Modeling of the Intrusion of Contaminants for Conservative Substances in Non-permanent and Non-uniform Flows (In Spanish)," September 2003.
96. Contributed Talk, Instituto de la Construcción y Gerencia, Lima, Peru, "Alternative of Hydraulic Design for Intakes in Steep Rivers and Large Transport of Boulders (In Spanish)," August 2002
97. Contributed Talk, *XII National congress of Civil Engineering, Huánuco, Peru,* "Local Scour around Cylindrical Piers in Non-cohesive Beds (In Spanish)," September 1999.

NON-CREDIT COURSES AND WORKSHOPS

98. Short course on "Mitigation strategies for air-water issues in gravity-based systems", 1 hour, held as part of the International Association for Hydro-Environment Engineering and Research (IAHR) Online Short Course: Perspectives on Two-phase Flows in Urban Water Systems, May 10, 2023.
99. One-week long course on Steady and Unsteady River Flows in the Winter School Program at the Universidad Peruana de Ciencias Aplicadas (UPC) in Lima, Peru, July 15-19, 2019.
100. Workshop on "Overview of the OSU-OUU model and its Application to the Columbia River System", 2 hours, held at Bonneville Power Administration Headquarters, Portland, OR, July 22, 2015.
101. Short course on "Flow Dynamics in Combined Storm-sewer Systems. Modeling needs and Application of the Illinois Transient Model (ITM)", 8 hours, held at City of Portland, Environmental Services, Portland, OR, October 25, 2013.
102. Short course on "Modeling of flows in Combined Storm-sewer Systems", 4 hours, held at the ASCE-EWRI World Environmental & Water Resource Congress, Providence, Rhode Island, May 16, 2010.
103. Short course on "Unsteady flow modeling using HEC-RAS", 16 hours, held at Montgomery Watson and Harza Engineering (MWH), Denver, Colorado, August 21 and 23, 2010.

I. CREATIVE WORK

INNOVATION IN CAMPUS STORMWATER DESIGN

- **April 18, 2022** – Dr. Leon served as the lead faculty advisor for the FIU team that won **first place** in the **2021 EPA Campus RainWorks Challenge** (Demonstration Project Category) (https://www.epa.gov/green-infrastructure/2021-campus-rainworks-challenge-results). Additionally, several members of Dr. Leon's research group—**Sumit Zanje, William Campbell, and Pratik Mahyawansi**—were part of the winning team. The FIU team was led by graduate student **Sumit Zanje**.

- **April 19, 2021** – Dr. Leon served as the lead faculty advisor for the FIU team that won **second place** in the **2020 EPA Campus RainWorks Challenge** (Demonstration Project Category) (https://www.epa.gov/newsreleases/epa-announces-winners-9th-annual-campus-rainworks-challenge). Several members of Dr. Leon's research group—**Linlong Bian, Zeda Yin, Vivek Verma, Sumit Zanje, and Dogukan Ozecik**—were part of the winning team, which was led by graduate student **Linlong Bian**.
- **April 29, 2020** – Dr. Leon, alongside Prof. Ebru Ozer (Architecture), served as the lead faculty advisor for the FIU team that won **first place** in the **2019 EPA Campus RainWorks Challenge** (Master Plan Category) (https://www.epa.gov/green-infrastructure/2019-campus-rainworks-challenge-results). Research group members **Vivek Verma, Linlong Bian, Sumit Zanje, and Dogukan Ozecik** were part of the winning team, led by graduate student **Vivek Verma**.
- **April 23, 2019** – Dr. Leon, alongside Prof. Hector Fuentes (CEE), served as the lead faculty advisor for the FIU team that secured **second place** in the **2018 EPA Campus RainWorks Challenge** (Master Plan Category). The winning team included research group members **Angela Hogan, Vivek Verma, and Salome Montoya**.

TECHNOLOGY TRANSFER SUCCESS

(January 2016) Our project was featured as a success PacTrans story: "PacTrans Technology Transfer Success Story 2015 #4: How Green is your Green Infrastructure? A Field-Scale Testing Facility to Investigate Efficiency of Roadside Stormwater Technologies". **Investigators:** Meghna Babbar-Sebens and Arturo S. Leon. The complete article can be found at http://depts.washington.edu/pactrans/pactrans-technology-transfer-success-story-2015-4-how-green-is-your-green-infrastructure-a-field-scale-testing-facility-to-investigate-efficiency-of-roadside-stormwater-technologies/#

DEVELOPED NEW GRADUATE COURSES

Optimization in Water Resources Engineering (500 level)

Dr. Leon proposed a new graduate course, *Optimization in Water Resources Engineering*, which was reviewed and approved by the University Curriculum Committee. While optimization is widely taught in Mathematics, Statistics, and Industrial Engineering departments, its application to water resources engineering remains largely unaddressed.

This course is especially relevant to Florida, a state with an extensive coastline, abundant freshwater systems, and high vulnerability to climate-related water challenges. As demands on water supply, flood control, and environmental sustainability grow, the need for systematic, data-driven, and physics-based decision-making in water management becomes increasingly critical. Optimization techniques can significantly improve efficiency in water distribution, reservoir operations, stormwater management, and ecosystem conservation.

By integrating mathematical modeling, computational algorithms, and real-world case studies, the course equips students with essential tools for effective water resource planning, management, and operations. The curriculum covers fundamental optimization principles while applying them to practical water-related challenges, preparing students to address pressing issues in Florida and beyond. The course materials I developed are available at:
https://web.eng.fiu.edu/arleon/Teaching_optimization.html

Unsteady Flows in Rivers and Pipe Networks (500 level)

Nationally, only two universities—the University of South Carolina and the University of Minnesota—offer a course similar to this graduate elective. Given the limited availability of such specialized coursework, this class provides a unique opportunity for students to develop expertise in the modeling and analysis of unsteady open-channel flows (e.g., rivers) and pressurized flows (e.g., full-pipe systems).

The course emphasizes the application of efficient numerical techniques and computational procedures for flow routing, ensuring students gain both theoretical knowledge and practical skills. While the primary focus is on one-dimensional unsteady flows, a brief introduction to two-dimensional flow analysis is also included to provide a broader perspective on real-world hydrodynamic challenges.

To reinforce learning, the course incorporates hands-on computer labs where students work with industry-standard software, including HEC-RAS (developed by the U.S. Army Corps of Engineers), ITM (developed by Arturo S. Leon), and TELEMAC-2D (developed by EDF-LNHE, Paris). These tools allow students to apply numerical methods to real-world scenarios, enhancing their ability to solve complex hydraulic problems effectively. The course materials I developed are available at: https://web.eng.fiu.edu/arleon/Teaching_unsteady_rivers.html

DEVELOPED SOFTWARE AND CODES

I have developed over 10 computational models, which are available at https://web.eng.fiu.edu/arleon/Codes.html. The main models that I have developed include:

1. **ITM-SWMM (2023-Present):** ITM-SWMM is a fork of the public domain U.S. EPA Storm Water Management Model (SWMM) that includes the Illinois Transient Model (ITM) as an optional flow routing method. SWMM is a distributed rainfall-runoff-routing simulation model designed for both single-event and long-term (continuous) simulations of runoff quantity and quality, primarily in urban areas. For more details on SWMM, visit https://www.epa.gov/water-research/storm-water-management-model-swmm. ITM is a finite-volume, shock-capturing model used to simulate the dynamics of rapidly filling and draining sewer systems. For more information on ITM, visit https://web.eng.fiu.edu/arleon/ITM.htm.
   Link: https://web.eng.fiu.edu/arleon/ITM-SWMM.htm

2. **DSS for Optimal Flood Control Through Wetland and Water Storage Management (2018-Present):** This framework can be used in near-real time to guide optimal water releases from a network of wetlands, detention ponds, and other storage systems to mitigate flooding. By enabling adaptive releases hours or days before rainfall events, it maximizes storage capacity and reduces flood risks. The decision support system integrates hydrological modeling (HEC-HMS), inundation modeling (HEC-RAS), and optimization methods (genetic algorithm and pattern search). Data exchange between these models is automated via HEC-DSS files.
   Link: https://web.eng.fiu.edu/arleon/Code_Flood_Control_DSS.html

3. **PrecForecDSS: Acquiring and Converting Precipitation Forecasts to DSS Format (2019-Present)**
   PrecForecDSS acquires bias-corrected Global Forecast System (GFS) precipitation data for a specified lead time and converts it into DSS format. The model uses data from the Cypress Creek Watershed in Texas by default. A precipitation map is generated and saved as

"precip_plot.pdf" in the "Forecast_GFS" folder, while the corresponding DSS file is saved as "GFS.dss" in the same folder. The Forecast_GFS.py script resamples the precipitation data to a 1000 m × 1000 m grid with a 1-hour time step.
Link: https://web.eng.fiu.edu/arleon/Code_Precip_Forecast_DSS.html

4. **Illinois Transient Model** (2004-Present): The Illinois Transient Model (ITM) is an **open source** multipurpose Finite Volume (FV) model to analyze transient flows in closed-conduit systems ranging from dry-bed flows to gravity flows, to partly gravity-partly surcharged flows (mixed flows) to fully pressurized flows (waterhammer flows). In the ITM model, the free surface region is modeled using the 1D Saint-Venant equations and the pressurized region is modeled using the 1D compressible waterhammer equations. The current version of the ITM model (V. 2.0 April, 2025) has features that make this model superior with respect to other models for analyzing transient flows in complex closed-conduit systems. The ITM model was used for the analysis of combined sewer systems in the United States in cities like Chicago, Cleveland, San Francisco, and Dallas and has been used in countries such as Switzerland, China, New Zealand and Mexico.
Link: https://web.eng.fiu.edu/arleon/ITM.htm

5. **Controlling HEC-RAS using MATLAB** (2016-Present): This code contains a set of MATLAB scripts to write input files, read output files, make plots, execute parallel computations, and perform fully-automated functions of HEC-RAS. The Examples of procedures are illustrated using a river-reservoir network that involves ten inline structures (e.g., dams) with operation of gates at each of these dams.
Link: https://web.eng.fiu.edu/arleon/Codes.html

6. **Steady-Pipe Networks** (2014-Present): Code for analyzing steady flows in pipe networks. This Matlab code is intended for analyzing steady flows in complex pipe networks. This code can handle reservoirs, pumps and user-defined flows at nodes. The input data is entered in Excel and the equations are solved in MATLAB.
Link: https://web.eng.fiu.edu/arleon/Pipe_Network.html

7. **OSU-Hydro turbines** (2013-Present): MATLAB code for determining optimal flow discharge and optimal penstock diameter when designing impulse and reaction turbines for hydropower systems. This code is based on the paper "A dimensionless analysis for determining optimal discharge and penstock diameter in impulse and reaction water turbines" by Leon A. (2013).
Link: https://web.eng.fiu.edu/arleon/hydropower_calc.html

8. **Annel2** (2002-Present): MATLAB code for computing water surface profiles in circular and trapezoidal channels in series.
Link: https://web.eng.fiu.edu/arleon/Annel2.html

9. **Illinois Conveyance Analysis Program** (ICAP) (2012-Present). ICAP uses hydraulic performance graphs to describe the conveyance of a system, identify bottlenecks for varying conditions, conserve mass by tracking outflow and overflows under stepwise steady flow conditions.
Authors: Oberg, Nils; Schmidt, Arthur R.; Landry, Blake J.; **Leon, Arturo S.**; Mier, Jose M.; Garcia, Marcelo H.
Link: https://www.ideals.illinois.edu/handle/2142/89288

10. **Dual Drainage Model** (DDM) (2008-Present): Code for modeling overland flows, street flows, Curb-and-grate inlet flows and pipe flows For the street and pipe flows a finite volume-shock-capturing scheme was used. Collaborator: Prof. Leonardo Nania (University of Granada, Spain).

11. **OSU-OUU** (2012-Present): Code for real-time operation of multi-objective and multi-reservoir systems that accounts for uncertainty and flexibility. This model couples hybrid optimization algorithms with a robust and numerically efficient hydraulic routing approach (OSU-Rivers). This model allows for scalable parallelization and has an integrated platform with a user-friendly graphical interface.

12. **OSU-Rivers** (2011-Present): Code for unsteady flow routing of complex rivers systems based on the performance graphs approach. This model is named OSU-Rivers. This model is robust and numerically efficient and is recommended for simulation of regulated river systems in real-time conditions.

J. WORKS IN PROGRESS

PAPERS SUBMITTED TO JOURNALS

As of April 15, 2025, Dr. Leon has six journal manuscripts under review.

OTHER COMPLETED PAPERS

N/A

RESEARCH IN PROGRESS (REFEREED JOURNAL PUBLICATIONS UNDER DEVELOPMENT)

As of **March 15, 2025,** my research group is developing **six journal papers.**

GRANT PROPOSALS (Under review)

Title of Project	Funding Agency	Date of submission	Requested Amount	Status (*)
Towards minimizing Combined Sewer Overflows: Transforming Air-Water Dynamics Modeling in Combined Sewer Systems through AI, 3D Simulations, and Reduced-Order Modeling Integration	National Science Foundation	04/15/2025	$420,000	Pending
A Nature-Based Approach for Sand Stablization to Mitigate Coastal Erosion from Sea Level Rise	Florida Sea Grant	02/25/2025	$200,000	Pending
FIU/SFWMD Collaboration on FIU Coastal Environmental Data, Innovation, and Modeling Initiative (CEDIMI) – Leveraging AI to optimize real-time operations of active control structures in the SFWMD canal systems.	South Florida Water Management District (SFWMD)	03/04/2025	$400,000	Pending
Quantifying the Benefits of IoT-AI Optimization Frameworks for Reducing Combined Sewer Overflows: A Study of Two Real-World Sewer Systems	National Science Foundation	12/11/2024	$420,000	Pending

K. FUNDED RESEARCH

AT FIU

Investigators	Title of Project	Funding Agency	Project Dates	Amount of Funding
A. S. Leon (PI), Z. Yin (Co-PI, Post-doc)	Quantifying the Benefits of IoT-AI Optimization Frameworks for Reducing Combined Sewer Overflows: A Study of Two Real-World Sewer Systems	National Science Foundation	06/01/25-05/31/28	$420,000 ($420,000, my share)
J. Obeysekera (PI), **A. S. Leon** (Co-PI), M. Sukop (Co-PI), D. Luo (Co-PI), Q. Chen (Co-PI)	FIU/SFWMD Collaboration on FIU Coastal Environmental Data, Innovation, and Modeling Initiative (CEDIMI)	South Florida Water Management District (SFWMD)	03/05/25-03/04/26	$224,999 ($60,000, my share)
A. S. Leon (PI)	Improved Modeling of Mixed Flows in the ITM Model	Wade Trim (Pittsburgh)	01/25-12/26	$70,000
Ali Ebrahimian (PI), **A. S. Leon** (Co-PI), L. Scinto (Co-PI)	Evaluating the Climate Resiliency and Long-term Performance of Various Types of Green Infrastructure to Reduce Land-Based Pollution in Biscayne Bay and Mitigate Floods and Urban Heat Island	Environmental Protection Agency (EPA)	01/23-12/25	$736,832 (~$100,000, my share)
A. S. Leon (PI), M. Amini (Co-PI)	A Physics-Based Artificial Intelligence General Framework for Optimal Control of Sewer Systems to Minimize Sewer Overflows	National Science Foundation	10/22-09/25	$400,000 ($298,208, my share)
Joseph Sinicrope (PI), **A. S. Leon** (Co-PI)	ERDC-FIU Strategic Initiatives to Enhance Critical Engineering Research and Workforce Development	USACE-ERDC-CT	04/22-03/27	$1,993,143 ($200,000, check intranet, my share)
B. S. Levitt (PI), R. S. Olson (Co-PI), **A. S. Leon** (Key personnel)	Collaborative Research: Hazard Events, Risk Perception, and Public Support for Disaster Risk Reduction in the Americas: a 17-Country Study	National Science Foundation	09/20-08/23	$152,500 ($3,859, my share)
A. S. Leon (PI), Cheng-Xian Lin (Co-PI)	Dynamics of Violent Geysers in Stormsewer Systems and Novel Retrofitting Methods	National Science Foundation	01/20-12/24	$329,733 ($199,526, my share)
A. S. Leon (PI)	Supplement to "Dynamic Management of Water Storage in Watersheds for Reducing the Magnitude of Floods"	National Science Foundation	10/19-07/22	$4,000
A. S. Leon (PI), S. Pennings (Co-PI), Craig Glennie (Co-PI)	Dynamic Management of Water Storage in Watersheds for Reducing the Magnitude of Floods	National Science Foundation	08/18-07/22	$307,756 ($201,357, my share)

J. Obeysekera (PI), S. Malone (Co-PI), M. Sukop (Co-PI), T. Troxler (Co-PI), **A. S. Leon** (Key personnel)	CoPe Conference: Interoperability and data needs of models for understanding vulnerability of coastal systems to stresses and shocks associated with climate change and sea level rise	National Science Foundation	01/20-12/20	$100,000 ($0, my share)
Steven Pennings (PI), **A. S. Leon** (Co-PI), Stacey Louie (Co-PI)	Wetland facility for the University of Houston Coastal Center	Subcontract from University of Houston (Funded by NSF)	09/18-08/20	$344,938 (Total project) ($105,624, my share)
A. S. Leon (PI*)	Practical Experience of Environmental Engineering Students of the Florida International University at the Miami-Dade Water and Sewer Department	Miami-Dade Water and Sewer Department	Fall 2019-09/23	$89,147 ($0, my share *)
A. S. Leon (PI)	Demonstration of modeling and intelligent operation of stormwater systems for flood control	Dankook University, South Korea	08/18-07/19	$5,500

* I am serving as the Project PI since December of 2019

AT PREVIOUS INSTITUTIONS

Investigators	Title of Project	Funding Agency	Project Dates	Amount of Funding
Stacey Louie (PI) **A. S. Leon** (Co-PI)	Sustainable wetland management for flood and water quality control	Grants to Enhance and Advance Research (GEAR), University of Houston	04/1/18 – 03/31/19	$30,000 ($15,000, my share)
A. S. Leon (PI), N. Gibson (CoPI), C. Hoyle (CoPI), Y. Chen (CoPI), C. Fuentes (CoPI)	Framework for Quantification of Risk and Valuation of Flexibility in the Federal Columbia River Power System (FCRPS)	US Department of Energy (BPA)	11/15-10/18	$1,189,492 ($511,280, my share)
Meghna Babbar-Sebens (PI) **A. S. Leon** (CoPI)	PacTrans Technology Transfer Success Story 2015: How green is your green infrastructure? A field-scale testing facility to investigate efficiency of road-side storm water technologies.	Pac-Trans UTC	12/15-1/16	$4,000 ($2,000, my share)
Meghna Babbar-Sebens (PI) **A. S. Leon** (CoPI)	Improving sustainability of urban streets via rain gardens – How effective are these practices in the Pacific Northwest? This project was featured as a success PacTrans story.	Pac-Trans UTC	7/13-6/14	$25,000 ($12,500, my share)

A. S. Leon (PI), Nathan Gibson (CoPI), Christopher Hoyle (CoPI)	Development of a state-of-the-art computational framework and platform for the optimal control of multi-reservoir systems under uncertainty	US Department of Energy (BPA)	10/12-11/15	$665,993 ($410,390, my share)
A. S. Leon (PI)	Prediction and quantification of CSOs in combined sewer systems under extreme storm events: Extreme events, Flow dynamics, Reduction of CSOs	U.S. Environmental Protection Agency	6/12-5/17	$265,528
A. S. Leon (PI)	Construction of first phase of River Hydraulics Research Facility	RERF - OSU	3/12-12/13	$59,950
Hans Tritico (PI) **A. S. Leon** (Co-PI) Jose Vasconcelos (Co-PI)	Development and Demonstration of an Improved Ranking Algorithm for Fish Passage through Culverts	Federal Highway Administration /CTME	3/12-12/12	$49,531 ($4,250, my share)

L. PROPOSALS SUBMITTED BUT NOT FUNDED (AT FIU)

Title of Project	Funding Agency	Date of submission	Requested Amount	Status (*)
Quantifying the Benefits of IoT-AI Optimization Frameworks for Reducing Combined Sewer Overflows: A Study of Two Real-World Sewer Systems	National Science Foundation (NSF)	09/13/2024	$420,000	Not funded
AI-based Framework for Real-time Management of Gravity Water Systems	National Science Foundation (NSF)	04/23/2024	$450,000	Not funded
SCC-CIVIC-PG Track A: Integrating temporal and spatial patterns of heat in real-time pedestrian routes to minimize heat exposure and heat-related impacts.	National Science Foundation (NSF)	05/01/2024	$75,000	Not funded
Connecting Regional Climate to Hyper-Resolution Urban Heat Islands: Advancing Our Understanding of Heat Island Mitigation	National Science Foundation (NSF)	11/21/2023	$449,495	Not funded
NSF Convergence Accelerator Track K: Equitable Water Solutions: Accessible Real-time AI-based Flood Tracking (A-RAFT) Phase I	National Science Foundation (NSF)	08/21/2023	$750,000	Not funded
W912HZ2D0003 FIU Task Order 2 for Strategic ERDC Initiatives	U.S. Army Corps of Engineers, U.S. Army Engineer Research and Development Center	06/19/2023	$149,113	Not funded
Risk Assessment and Adaptation Strategies for Roadway Networks in Florida Coastal Areas under Extreme Rainfall Events	Florida Department of Transportation (FDOT)	02/24/2023	$300,000	Not funded

Strategies to Foster the Implementation of Knowledge Management	Transportation Research Board	02/14/2023	$249,790	Not funded
ML-based Framework for Real-time Flood Control of Multi-reservoir systems	National Science Foundation (NSF)	02/08/2023	$450,000	Not funded
EFRI ELiS Preliminary Proposal: Quantifying the integral benefits of green infrastructure for water quality, floods, GHGs, and UHI to develop multifunctional urban living systems	National Science Foundation (NSF)	10/13/2022	$2,000,000	Not funded
Integrated observation, modeling, and prediction of wetland-urban-ocean dynamics and city-scale hazards in the humid subtropics for equitable, resilient adaptation	U.S. Department of Energy	06/16/2022	$24,932,812	Not funded
LEAP-HI: Engineering Soft Bubbles for Hard Problems in Coastal Protection	National Science Foundation (NSF)	09/15/2021	$2,000,000	Not funded
EFRI ELiS Preliminary Proposal: Quantifying the Integral Benefits of GSI for Improving Water Quality and Reducing Runoff Volume, GHG Emissions, and UHI Effects	National Science Foundation (NSF)	12/16/2021	$1,998,732	Not funded
Collaborative Research: Frameworks: AI-driven Cyberinfrastructure for Cross-Domain Knowledge Engineering: A New Data Analytic Paradigm for Urban and Infrastructure Systems	National Science Foundation (NSF)	12/07/2021	$220,365	Not funded
A Physics-based Artificial Intelligence Framework for Optimal Flood Control of Multi-reservoir systems in Real-time	National Science Foundation (NSF)	09/10/2021	$329,991	Not funded
An HDR Institute for Data-Intensive Research on SunBelt Water Challenges	National Science Foundation (NSF)	02/11/2021	$10,00,000	Not funded
A Physics-Based Artificial Intelligence General Framework for Improving Overflow Prediction in Combined Sewer Systems	National Science Foundation (NSF)	04/02/2021	$330,000	Not funded
Quantifying Storm Surge and Hurricane Wind Mitigation Provided by Various Green Infrastructure Types	National Science Foundation (NSF)	11/25/2020	$450,000	Not funded
Collaborative Research: Frameworks: AI-driven Cyberinfrastructure for Cross-Domain Knowledge Engineering: A New Data Analytic Paradigm for Urban and Infrastructure Systems	National Science Foundation (NSF)	10/27/2020	$199,929	Not funded
SCC-CIVIC-PG Track B: An adaptive, multi-modal energy management system for the sustainability and resilience to natural disasters	National Science Foundation (NSF)	08/03/2020	$50,000	Not funded
SCC-CIVIC-PG Track B: CIVIC Data Platform for Resilient Futures: Accelerating Data-Driven Science, Policy Making and Community Solutions	National Science Foundation (NSF)	08/03/2020	$50,000	Not funded
Identifying Sewer Operational Problems and Improving Overflow Prediction in Combined and Sanitary Sewer Systems	National Science Foundation (NSF)	08/28/2020	$330,000	Not funded
Collaborative Research: Quantifying Mangrove Mortality from Hurricane Wind Speed and Storm Surge Sedimentation and Forecasting Decline	National Science Foundation (NSF)	02/04/2020	$915,788	Not funded

in Energy Dissipation in Coastal Ecosystems				
Approaches to Reduce Nutrient Loadings for Harmful Algal Blooms Management	University of Florida (through the Environmental Protection Agency)	12/05/2019	$211,441	Not funded
SCC-IRG Track 1: Smart and Connected Coastal Urban Systems in the Face of Sea Level Rise, Hurricanes and Flooding: Identifying Optimal Trends for Infrastructure Development	National Science Foundation	09/06/2019	$3,841,379	Not funded
Hurricane Heterogeneity & Drivers of Mangrove Mortality	NSF	03/01/2019	732,481	Not funded
Inter-comparison of land surface models to improve the NOAA National Water Model by using remote sensing observations in a cold-region watershed	NOAA	02/01/2019	240,338	Not funded

(*) The table below indicates proposals under review or not funded. Proposals that were funded are not included in this table.

M. PATENT DISCLOSURES, APPLICATIONS, AND AWARDS

N/A

N. PROFESSIONAL HONORS, PRIZES, FELLOWSHIPS

HONORS, PRIZES AND FELLOWSHIPS OF CANDIDATE (SELECTED)

1. **Fellow, NSF Convergence Research (CORE) Institute,** Spring 2023 – Summer 2023. This fellowship involved (1) attending bootcamp webinars and actively participating in workshops; (2) working with a team to prepare a pitch presentation on AI for user-inspired problems (heat island and flooding prediction); and (3) attending the incubator at UC San Diego from July 10, 2023 - July 14, 2023 (in-person participation).
2. **Best Paper Award**, Environmental and Water Resources Institute (EWRI), American Society of Civil Engineers (ASCE), for "Physics-Informed Neural Network Approach for Solving the One-Dimensional Unsteady Shallow-Water Equations in Riverine Systems," May 2023.
3. **Lead Faculty Advisor** for the FIU team, **1st place winner** in the **2021 EPA Campus RainWorks Challenge** (Demonstration Project Category), awarded by the **U.S. Environmental Protection Agency (EPA)**, Office of Wastewater Management **in** April 2022**.** "The Campus RainWorks Challenge is a green infrastructure design competition for American colleges and universities that seeks to engage with the next generation of environmental professionals, foster a dialogue about effective stormwater management, and showcase the environmental, economic, and social benefits of green infrastructure practices".
4. **Best Paper Award**, Environmental and Water Resources Institute (EWRI), American Society of Civil Engineers (ASCE), for "A Feasibility Study on Harvesting Rainwater from Large Solar Panel Canopies to Supplement Makeup Water for Cooling Towers by Using Remotely Controlled and Self-Cleaning Rain Cistern," June 2021.
5. **Lead Faculty Advisor** for the FIU team, **2nd place winner** in the **2020 EPA Campus RainWorks Challenge** (Demonstration Project Category), awarded by the **U.S. Environmental Protection Agency (EPA)**, Office of Wastewater Management in April 2021**.**
6. **Fellow, FIU Extreme Events Institute** (FIU Preeminent Program), July 2019-June 2020. This distinction was awarded in recognition of expertise and research in hazards, disasters, and risk reduction.

7. **Lead Faculty Advisor** (with Prof. Ebru Ozer as co-advisor) for the FIU team, **1st place winner** in the **2019 EPA Campus RainWorks Challenge** (Master Plan Category), awarded by the **U.S. Environmental Protection Agency (EPA)**, Office of Wastewater Management in April 2020.
8. **Lead Faculty Advisor** (with Dr. Hector Fuentes, CEE) for the FIU team, **2nd place winner** in the **2018 EPA Campus RainWorks Challenge** (Master Plan Category), awarded by the **U.S. Environmental Protection Agency (EPA**), Office of Wastewater Management in April 2019.
9. **Diplomate, Water Resources Engineer (D.WRE)**, **American Academy of Water Resources Engineers** (ASCE), 2014. This award is presented by the **American Academy of Water Resources Engineers (AAWRE)**, a subsidiary of the **American Society of Civil Engineers (ASCE)**. The D.WRE certification is the highest post-license credential in water resources engineering, symbolizing strong professional ethics, a commitment to lifelong learning, and continuing professional development.
10. **Environmental Protection Agency (EPA) Early CAREER Award**, 2012. The **EPA CAREER award** supports "research performed by PIs with outstanding promise at the Assistant Professor or equivalent level".
11. **ASCE ExCEEd Teaching Fellow**, 2012. Awarded the prestigious **ASCE ExCEEd Teaching Fellowship** to attend an intensive six-day workshop aimed at enhancing teaching effectiveness for engineering educators. The program featured high-quality demonstration classes led by **ExCEEd faculty mentors**, followed by hands-on experience where participants prepared and taught three classes in a small-group setting. Recognized for exceptional growth, I received the **"Chalk Award"** from the lead teaching mentor for the most significant improvement in teaching.
12. **Society of Peruvian Engineers Outstanding Contributions Award**, 2011. Honored by the Society of Peruvian Engineers (Colegio de Ingenieros del Perú) for **outstanding contributions to the engineering field**. This prestigious award is granted annually to only one or two engineers who demonstrate excellence and impact in their profession.
13. **Chancellor Medal and Diploma – Outstanding Graduate, Universidad Nacional San Cristóbal de Huamanga**, 2008. Recognized as one of the two most outstanding graduates in the history of the Civil Engineering Department at Universidad Nacional San Cristóbal de Huamanga. The Chancellor's Medal and Diploma were awarded in acknowledgment of exceptional academic and professional achievements.
14. **Peruvian National Council of Science and Technology Fellow**, 1997–1998. Awarded a prestigious fellowship by the Peruvian National Council of Science and Technology (CONCYTEC) to support my Master's studies at the National University of Engineering in Lima, Peru. This fellowship recognized academic excellence and research potential in advancing science and engineering.
15. **Research Fellowship, Hong Kong University of Science and Technology**, China, 2004. Selected for a Research Fellowship at the Hong Kong University of Science and Technology, sponsored by the University of Illinois at Urbana-Champaign. This six-week program offered specialized training in cutting-edge research on transient flows and finite-volume Godunov methods.
16. **First Place – M.S. Entrance Examination, National University of Engineering**, Peru, 1997. Achieved first place in the Master's program entrance examination at the National University of Engineering in Lima, Peru.
17. **Fellowship – Peruvian National Annual Conference of Executives**, 1996. Selected as the **top student** from the College of Engineering of Mining, Geology, and Civil at Universidad Nacional San Cristóbal de Huamanga to attend Peru's National Annual Conference of Executives (Conferencia Anual de Ejecutivos). This prestigious one-week event brought together the nation's most exceptional students and top CEOs from Peru's leading companies, offering a unique platform for high-level networking and professional engagement.

18. **Best Undergraduate Student Award – Civil Engineering, Universidad Nacional San Cristóbal de Huamanga, Peru,** 1992–1996. Recognized as the **top Civil Engineering student** for **five consecutive years.** Awarded annually to the student with the highest GPA, this honor reflects sustained academic excellence throughout the university's five-year undergraduate program.
19. **First Place – B.S. Entrance Examination** (Out of 26,000 Applicants), 1992. Ranked **first** among **26,000 applicants** in the university entrance examination for the Bachelor of Science program.

HONORS, PRIZES AND FELLOWSHIPS OF CANDIDATE's STUDENTS/POST-DOCS

1. **Dissertation Year Fellowship – FIU University Graduate School** (June 2024). Ph.D. student **Abbas Sharifi** was awarded the Dissertation Year Fellowship (DYF) from the FIU University Graduate School, recognizing his excellence in doctoral research. This prestigious fellowship supports outstanding FIU Ph.D. candidates during the final phase of their dissertation.
2. **First Place – ASCE-EWRI Graduate Student Paper Competition,** May 2023. Ph.D. student Zeda Yin won first place in the Graduate Student Paper Competition of the Environmental and Water Resources Institute (EWRI) of the American Society of Civil Engineers (ASCE). The awarded paper, titled "Physics-Informed Neural Network Approach Coupled with Boundary Conditions for Solving 1D Steady Shallow Water Equations for Riverine Systems," showcased innovative applications of machine learning in water resources.
3. **Third Place – Oral Presentation, FIU-MME Graduate Symposium** (2023). Ph.D. student Pratik Mahyawansi won third place in the Oral Presentation category at the 2023 FIU-MME Graduate Symposium. His presentation, "Investigation of Velocity Profile in Stratified Flows Using Experimental and Analytical Methods," highlighted advancements in fluid dynamics research.
4. **Roy Likins Scholarship – FSAWWA** (2022). M.S. student Hector Mayorga was awarded the 2022 Florida Section of the American Water Works Association (FSAWWA) Roy Likins Scholarship (https://www.fsawwa.org/page/ScholarshipLikins) for academic excellence, determination, and contributions to drinking water industry-related research.
5. **First Place – 2021 EPA Campus RainWorks Challenge,** April 2022. Ph.D. student **Sumit Zanje** led the **FIU team** to **first place** in the **EPA Campus RainWorks Challenge (Demonstration Project Category)**. Other research group members on the winning team included **Pratik Mahyawansi** and **William Campbell**.
6. **Dissertation Year Fellowship – FIU University Graduate School,** April 2022. Ph.D. student **Sumit Zanje** was awarded the Dissertation Year Fellowship (DYF) from the FIU University Graduate School, recognizing his excellence in doctoral research. This prestigious fellowship supports outstanding FIU Ph.D. candidates during the final phase of their dissertation.
7. **EPIC/Chittaluru Family Scholarship – ASCE Florida Section,** July 2021. Ph.D. student **Sumit Zanje** received the 2021 EPIC/Chittaluru Family Scholarship from the **ASCE Florida Section Past President Scholarship Endowment** in recognition of his research in civil engineering. This scholarship supports undergraduate and graduate ASCE student members in Florida who are dedicated to applying innovative technologies to advance the civil engineering profession.
8. **First Place – ASCE-EWRI Graduate Student Paper Competition,** June 2021. A team from our research group, led by Ph.D. student Linlong Bian, won first place in the Graduate Student Paper Competition of the ASCE Environmental and Water Resources Institute (EWRI). Their paper, "A Feasibility Study on Harvesting Rainwater from Large Solar Panel Canopies to Supplement Makeup Water for Cooling Towers Using Remotely Controlled and Self-Cleaning Rain Cisterns," demonstrated sustainable water management solutions.
9. **Second Place – 2020 EPA Campus RainWorks Challenge, Demonstration Project Category,** April 2021. Ph.D. student **Linlong Bian** led the **FIU team** to **second place** in the **EPA Campus RainWorks Challenge (Demonstration Project Category)**. Other team members from our research group included **Vivek Verma, Zeda Yin, Sumit Zanje,** and **Dogukan Ozecik**.

10. **2020 Design Award – Florida Chapter of ASLA**, November 2020. **Vivek Verma, Linlong Bian, Sumit Zanje,** and **Dogukan Ozecik,** all members of our research group, won the **2020 Design Award** from the **Florida Chapter of the American Society of Landscape Architects (FLASLA).** The award was presented on November 6th at the Grand Bohemian Orlando Resort in Orlando, Florida.
11. **Preeminent/Emerging Preeminent Doctoral Assistantship – InteRaCt, April 2020** Ph.D. student **Zeda Yin** was awarded the Preeminent/Emerging Preeminent Doctoral Assistantship from the Preeminent Institute for Resilient and Sustainable Coastal Infrastructure (InteRaCt), recognizing his potential for impactful research in water resources engineering.
12. **First Place – 2019 EPA Campus RainWorks Challenge, Master Plan Category, April 2020.** Ph.D. student **Vivek Verma** led the **FIU team** to **first place** in the **EPA Campus RainWorks Challenge (Master Plan Category).** Other team members from our research group included **Linlong Bian, Sumit Zanje,** and **Dogukan Ozecik.**
13. **Highly Cited Researcher – Web of Science, 2019. Dr. Mohammad Reza Safaei,** my postdoctoral researcher, was recognized as one of the two most highly cited researchers at **FIU** by **Web of Science** (https://recognition.webofsciencegroup.com/awards/highly-cited/2019/). This distinction highlights scientists whose publications rank in the **top 1% by citations** in their field and year, underscoring their significant influence in the research community.
14. **JTACC-V4 Young Scientist Award, June 2019. Dr.** Mohammad Reza Safaei, my postdoctoral researcher, was selected as the winner of the **JTACC-V4 Young Scientist Award.** This prestigious honor recognizes young researchers under the age of 35 for exceptional contributions to **thermal analysis** and **calorimetry**. Dr. Reza will receive the award in Budapest on June 18-21, 2019, where he will present his lecture at a plenary session.
15. **Second Place – 2018 EPA Campus RainWorks Challenge, Master Plan Category, April 2019.** Several students from our research group, including **Angela Hogan, Vivek Verma,** and **Salome Montoya,** were awarded **second place** in the **2018 EPA Campus RainWorks Challenge (Master Plan Category).**
16. **Third Place – Graduate Student Technical Paper Competition, June 2018. Taher Chegini,** Ph.D. student, won **third place** in the **Graduate Student Technical Paper Competition** of the **Environmental and Water Resources Institute (EWRI)** of the **American Society of Civil Engineers (ASCE).** His awarded paper was titled "**Comparison of Various Turbulence Models for Violent Geysers in Vertical Pipes.**"
17. Taher Chegini, Ph.D. student – University of Houston CACDS Fellowship, September 2017 (https://www.cacds.uh.edu/about/cacds-fellows/)
18. Erfaneh Sharifi, Ph.D. student – University of Houston CACDS Fellowship, September 2017 (https://www.cacds.uh.edu/about/cacds-fellows/)
19. Parnian Hosseini, Ph.D. student, 2nd Place – CCE-OSU College of Engineering Research Engineering Expo, 2015
20. Parnian Hosseini, Ph.D. student, NW Energy Prize scholarship, 2014
21. Yunji Choi, Ph.D. student, Arthur N. L. Chiu Endowed Scholarship, 2013
22. Christopher Gifford-Miears, M.S. student, ASCE's Arthur S. Tuttle Memorial Scholarship, 2012

O. OFFICES HELD IN PROFESSIONAL SOCIETIES

- American Society of Civil Engineers, Environmental & Water Resources Institute (EWRI), Task Committee on Two-Phase Flow In Urban Water Systems, ***Vice-Chair***, 2017-Present.

P. OTHER PROFESSIONAL ACTIVITIES AND PUBLIC SERVICE

SELECT TRAINING RECEIVED

- Participated in the 2025 Simple Syllabus Open House (7-hours) offered by the FIU Office of Faculty Leadership & Success, May 01.
- Participated in the 2024 Teaching with AI three-part workshop (8-hours) offered by the FIU Center for the Advancement of Teaching.
- Participated in the 2022 Diversity Advocate workshop offered by the FIU Office to Advance Women, Equity & Diversity.
- Participated in the 2022 Strategies and Tactics for Recruitment to Increase Diversity and Excellence (STRIDE) workshop offered by the FIU Office to Advance Women, Equity & Diversity.
- Participated in the 2018-2019 FIU Faculty Mentor Program as mentee. This program was offered by the FIU Office to Advance Women, Equity & Diversity.
- Participated in the 2015 mentorship training workshop offered by the Oregon State University Graduate School.

UNIVERSITY SERVICE

Standing Committees

- CEE Information Technology (IT) representative for CEC, Fall 2024-Present
- CEE Information Technology (IT) Committee Chair, Fall 2024-Present
- CEE Lab and Facilities Enhancement Committee Chair, Spring 2024-Present
- CEE Information Technology (IT) Committee Member, Spring 2022 – Spring 2024
- Moss School Research Committee Member, Fall 2020-Present
- Graduate Program Advisory Committee (GPAC) Member, Fall 2019-Present
- GPAC, Non-CEE Faculty Evaluation Committee Chair, Fall 2019-Present
- GPAC, Awards and Fellowships Committee Member, Fall 2019-Present
- CEE DAS Department Evaluation Committee Member, Fall 2019-Present
- FIU Faculty Senate, Alternate Senator, Fall 2018-Summer 2019
- CIVE 6111 Graduate Seminar Coordinator, Fall 2017
- Graduate Committee, Member, AY12/13, 13/14
  - Sub-Committee on Graduate Admissions & Recruiting, Chair, AY 12/13
- Institute for Water and Watersheds (IWW) Executive Committee, Member, AY11 – 2016

Ad-Hoc Committees

- Committee to assess vulnerabilities and recommend solutions for all third-floor CEE water and environmental engineering labs following repeated flooding incidents, including the April 2025 event in EC 3625, Chair, Spring 2025 - Present.
- Leading efforts to identify lab space for the installation of a wave-wind flume for Dr. Navid Tahvildari (CEE faculty), Fall 2024 – Present.
- 2030 Environment and Environmental Resilience initiatives, alternate or designee in the *FIU Environment* meetings, Spring 2025-Present.
- CEC web redesign campaign, CEE "project ambassador", Spring 2025-Present.
- Structural Engineering (Bridge Engineering) Tenure-Track Faculty Search Committee, Member, Fall 2024 - Spring 2025
- Committee for the development of a proposal for the creation of a research center dedicated to providing water engineering solutions tailored for coastal urban systems, Chair, Spring 2024.
- CEE Department Chair Search Committee, Member, AY 22-23

- Environmental Engineering Tenure-Track Faculty Search Committee, Chair, AY 22 (Two searches)
- Transportation Engineering Tenure-Track Faculty Search Committee, Member, AY 22
- Environmental Engineering Tenure-Track Faculty Search Committee, Member, AY 17
- Construction Engineering Tenure-Track Faculty Search Committee, Member, AY 11/12
- Interim School Head of Civil & Construction Engineering Search Committee, Member, AY 11/12

Development of Research Laboratories

At FIU

- Designed and implemented a new hydraulics research laboratory at the FIU Engineering Center, completed in Fall 2022. The FIU Hydraulics Research Laboratory is a state-of-the-art facility spanning 4,800 ft² (446 m²). It features a recirculating system capable of conducting experiments with flows of up to 10.6 cfs (300 L/s). The facility includes constant head water and air tanks, variable and constant-speed pumps, and both impulsion and return pipelines.

  For more details, visit: FIU Hydraulics Research Laboratory (https://web.eng.fiu.edu/arleon/Lab_hydraulics.html).

At Previous institutions

- Dr. Leon designed and secured funding for the construction of the River Hydraulics Research Facility (http://web.eng.fiu.edu/arleon/River_Facility.html) at the O.H. Hinsdale Wave Research Laboratory. This state-of-the-art facility features a recirculating system capable of supporting up to two simultaneous, independent experiments with flows of up to 35 cfs (1,000 L/s). The facility includes a 20 m (66 ft) × 10 m (33 ft) concrete platform for hydraulic experiments, two independent (extendable) head tanks, a sediment catchment, a clean water sump, multiple pumps (variable and constant speed), and both impulsion and return pipelines. The facility has been used for several sponsored research projects on geysers and flood control. Dr. Leon served as the founding director.
- Dr. Leon led the design and played a key role in securing funding for the OSU-Benton County Green Stormwater Infrastructure Research (OGSIR) Facility (http://research.engr.oregonstate.edu/hydroinformatics/Avery), a state-of-the-art, three-celled stormwater research site dedicated to field-scale experiments on green infrastructure, such as raingardens and bioswales. The facility enables rigorous testing of various stormwater treatment technologies and contaminants, with advanced sensor instrumentation to enhance data collection and modeling. Strategically located at the northwest corner of the Benton County Development Department property on SW Avery Avenue in Corvallis, Oregon, the facility captures runoff from approximately 100,000 square feet of county land. It plays a critical role in mitigating pollutants such as tractor leaks, fuel spills, raw asphalt, road fill sediment, parking lot chemicals, and road paint spills. Each research cell measures 93 feet 4 inches long, 10.5 feet wide, and 3 feet deep, with an underdrain installed in an 18-inch trench positioned 4 feet below the top of the cell walls. Designed for adaptability, the soils and plants in each cell can be replaced for experimental purposes, allowing for innovative stormwater management research. Beyond research, the facility serves as a hub for education and public outreach, empowering communities to take action in improving water quality. The facility was initially co-directed by Dr. Meghna Babbar-Sebens (OSU) and Dr. Arturo Leon (formerly OSU).

- Dr. Leon designed and funded the construction of a state-of-the-art, 10-meter-long semi-circular (D = 18") re-circulatory flume (http://web.eng.fiu.edu/arleon/Projects_Flume_Graf.html). Located in the Hinsdale Wave Lab, this facility enhances hands-on learning and research, providing students with a valuable tool for studying fluid mechanics. With a maximum flow discharge of 10 liters per second, the flume offers precise control for experimentation, making it an essential asset for teaching and advancing hydrodynamics education.

SERVICE TO THE PROFESSION

Journal editorships

- Associate Editor, ***Environmental Modelling & Software***, Elsevier, November 2023-Present.
- Associate Editor, ***International Journal of River Basin Management***, International Association for Hydro-Environment Engineering and Research (IAHR), November 2023-Present.
- Editorial Board Member, ***Environmental Modelling & Software***, Elsevier, August 2021-October 2023.
- Editorial Board Member, ***Modelling***, MDPI international peer-reviewed Journal, Spring 2021-August 2024.

Conference and Workshop Organization

- International Scientific Committee, 8th International Symposium on Environmental Hydraulics, University of Notre Dame, Indiana, United States, June 2018.
- Session organizer [with Jose Vasconcelos, Auburn University], Session on Two-phase flows (Gas-liquid) in Hydraulic Structures, World Environmental & Water Resources Congress 2018 (organized annually), Minneapolis, Minnesota, June 2018.
- Mini-Symposium organizer [with Moez Louati, Hong Kong University of Science and Technology (Hong Kong)], Session on Transients and Geysers in Urban Systems, 8th International Symposium on Environmental Hydraulics (https://ceees.nd.edu/iseh2018), University of Notre Dame, Indiana, United States, June 2018.
- Session organizer [with Silvia Meniconi, University of Perugia (Italy), Pedro Lee, University of Canterbury (New Zealand); Sang Hyun Kim, Pusan National University (South Korea), and Moez Louati, Hong Kong University of Science and Technology (Hong Kong)] on Transients Flows in Pipes, 37th IAHR World Congress (organized biennially), Kuala Lumpur, Malaysia, August 2017.
- Session organizer, Session on Short-term Operation of Reservoir Systems Under Uncertainty, World Environmental & Water Resources Congress 2016 (organized annually), West Palm Beach, Florida, May 2016.
- Session organizer, Session on Reservoir Operation, AWRA Annual Water Resources Conference, Portland, OR, November 2013.
- Steering Committee and Advisory Board Member, International Conference on Engineering & Ecohydrology for Fish Passage, Corvallis, OR, June 2013
- Chair, Spring Hydrology Seminar Series of the Institute of Water and Watersheds (IWW). Theme: "Innovations in International Waters", Corvallis, OR, April-June 2012.

Conference Program Committees

- Member of International Scientific Committee, 41st IAHR World Congress, Singapore, June 22nd to 27th, 2025.

- Member of International Scientific Committee, 5th IAHR Young Professionals Congress, online, 27-29 November 2024.
- Session Chair (with Prof. David Ferras, Co-Chair), Special Session: Transients in Pipes, 38th IAHR World Congress, Panama City, Panama, September 2019.
- Session Chair (with Prof. Huang-Feng Duan, Co-Chair), Special Session: Transients in Pipes, 37th IAHR World Congress, Kuala Lumpur, Malaysia, August 2017.
- Member of International Scientific Committee, XXVII Latin-American Congress of Hydraulics, Lima, Peru, September 2016.
- Session Chair (Energy Dissipation Basins), 6th International Symposium on Hydraulic Structures, Portland OR, June 2016.
- Session Moderator (Short-term Operation of Reservoirs Systems Under Uncertainty), World Environmental & Water Resources Congress 2016, West Palm Beach, FL, May 2016.
- Session Chair, AWRA Annual Water Resources Conference, Portland, OR, November 2013.
- Session Moderator, International Conference on Engineering & Ecohydrology for Fish Passage, Corvallis, OR, June 2013.
    - Modeling and Design
    - Columbia River Passage

Reviewing

Research Proposals

- National Science Foundation (NSF) CBET- Environmental Sustainability, Sustainable Buildings/Cities & Water, Agriculture, Food (WAF), Review Panel 1 & 3, May 2025.
- Texas One Gulf's "ONEGULF PRIORITY NEEDS: Establishing Baselines: Community Resilience, Estuarine & Coastal Environments", Reviewer, 2023
- National Science Foundation (NSF) Strengthening American Infrastructure (SAI) Research Proposals - Water Resources, Review Panel, July 2022
- National Science Foundation (NSF) SBIR Phase II, Review Panel, May 2021
- National Science Foundation (NSF) SBIR Phase I, Reviewer, April 2020
- National Science Foundation (NSF) CBET, CAREER Review Panel, 2019
- National Science Foundation (NSF) CMMI, Review Panel, 2014
- Natural Sciences and Engineering Research Council of Canada (NSERC), Reviewer, 2013]
- National Science Foundation (NSF) CMMI, Reviewer, 2013, 2014

Archival Journals [88]

- AGU: Water Resources Research, 2014 – present [6]
- MDPI: Water, 2016 - present [6]
- IWA: Journal of Hydroinformatics, 2015 – present [5]
- ASCE: Journal of Water Resources Planning and Management, 2013 – present [6]
- ASCE: Journal of Engineering Mechanics, 2013 – present [4]
- ASCE: Journal of Computing in Civil Engineering, 2013 – present [2]
- IWA: Water Science and Technology, 2013 – present [4]
- ASCE: Journal of Hydrologic Engineering, 2011 – present [6]
- Springer: Journal of Water Resources Management, 2011 – present [5]
- IAHR, International Journal of Hydraulic Research, 2009 – present [18]
- ASCE: Journal of Hydraulic Engineering, 2007 – present [26]

Refereed Conferences [113]

- 8th IAHR Europe Division Congress: Water - Across Boundaries, Lisbon, Portugal, June 2024 [8].
- IAHR World Congress (organized biennially), Kuala Lumpur, Malaysia, August 2017 [6].
- Latin-American Congress of Hydraulics, 2015-present [10]
- ASCE-EWRI World Environmental & Water Resource Congress, 2013 – present [58]
- International Conference on Engineering & Ecohydrology for Fish Passage, 2014 – present [16]
- AWRA Annual Water Resources Conference, 2013 – present [12]
- Computational Hydraulics International (CHI) Annual Conference, 2011 – present [3]

REVIEW PANELS AND TASK COMMITTEES

- World Happiness Fest 2023, Panelist in the Session *How can the latest inventions and technologies evolve "Smart Cities" into "Cities of Happiness*, March 23, 2023 (https://worldhappinessfest2023miami.sched.com/event/126pa/how-can-the-latest-inventions-and-technologies-evolve-smart-cities-into-cities-of-happiness).
- The International Association for Hydro-Environment Engineering and Research (IAHR), Transient Flows Working Group, Co-opted Member, 2023 – Present.
- American Society of Civil Engineers, Environmental & Water Resources Institute (EWRI), Wetland Hydrology Technical Committee, *Member*, 2022 – Present
- MITRE Miami Innovation Hub (iHub), Water Roundtable, *Participant*, 2022.
- American Society of Civil Engineers, Environmental & Water Resources Institute (EWRI), Task Committee on Two-Phase Flow In Urban Water Systems, ***Vice-Chair***, 2017-Present
- American Society of Civil Engineers, Environmental & Water Resources Institute (EWRI), Task Committee on Sustainable Stormwater Infrastructure, *Member*, 2016 – Present
- American Society of Civil Engineers, Environmental & Water Resources Institute (EWRI), Task Committee on Eco-Hydraulics, *Member*, 2013 – Present
- American Society of Civil Engineers, Environmental & Water Resources Institute (EWRI), Task Committee on Low Impact Development - Combined Sewer (LID-CS) Areas, *Member*, 2012 – Present
- Delta Science Program (State of California), Review panel member of the Fall Low Salinity Habitat (FLaSH) Studies and Adaptive Management Plan, 2012
- Oregon Seismic Resiliency, Committee member of Water and Waste Water System task group, 2012-2015

PROFESSIONAL CERTIFICATION AND MEMBERSHIP OF PROFESSIONAL ASSOCIATIONS

- American Academy of Water Resources Engineers (AAWRE), *Diplomate*, 2014 – Present
- Engineers Without Borders (EWB), *Member*, 2012 – Present
- American Geophysical Union (AGU), *Member*, 2012 – Present
- Professional Certification, **Professional Engineer** (PE 14251, Idaho), 2010
- American Water Resources Association (AWRA), *Member*, 2009 – Present
- American Society of Civil Engineers, *Member*, 2009 – Present
- International Association for Hydraulic Research (IAHR), *Member*, 2009 – Present
- Professional Certification, Professional Engineer (Peru, CIP 58619), 2001

ADVISING

Graduate Advisees – Current

Student	Degree	Expected Graduation	Thesis Title (Tentative)
Rizwan Haider (Joining on Fall 2025)	Ph.D.	Spring 2029	Physics-Based Machine Learning for Hyper-Resolution Prediction of Heat Extremes
Shiva Sai Reddy	Ph.D.	Fall 2028	Finite Volume Methods for Simulating the South Florida Water Management System and AI-Physics-Based Models for Optimizing Its Operation
Zain Syed (Passed Qual exam on Spring 2025)	Ph.D.	Fall 2027	Physics-based Machine Learning Approaches to Optimize Sewer System Operations and Reduce CSOs
Harshin Kamal Asok (Passed Qual exam on Spring 2025)	Ph.D.	Fall 2026	Heat Island CFD simulations and AI-based Prediction at the Hyper-resolution Scale
Abbas Sharifi (To Graduate on Spring 2025)	Ph.D.	Spring 2025	Experimental and Numerical Analysis of Geyser Dynamics in Urban Storm Sewer Systems: Retrofitting Strategies for Infrastructure Resilience
Jesus Hernandez	M.S.	Spring 2026	Course-based MS

Graduate Advisees – Completed

Student	Degree	Thesis	Graduated
Marlon Martinez	M.S.	Course-based MS	Summer 2024
Zeda Yin	Ph.D.	*Physics-based machine learning approaches for forecasting and optimal control of riverine and urban water systems*	Spring 2024
Pratik Mahyawansi Co-Major Professor: Dwayne McDaniel, **Co-Major Professor**: Arturo Leon	Ph.D.	*Experimental and numerical study of a storm sewer violent geyser*	Spring 2024
Abbas Sharifi	M.S.	*MS en-route to PhD*	Spring 2024
William Campbell	M.S.	*Modeling complex tidal flow dynamics in the US Army Corps of Engineers Hydrologic Engineering Center's River Analysis System (HEC-RAS): Assessing HEC-RAS as a suitable model in terms of accuracy and speed in bay and estuarine systems.*	Summer 2023
Hector Mayorga	M.S.	*Hydrologic response of the Mayales watershed using the SWAT model*	Summer 2023

		considering climate and land use change scenarios	
Abbas Sharifi	M.S.	*MS en-route to PhD*	Summer 2023
Yliana Serra	M.S.	*Course-based MS*	Spring 2023
Sumit Zanje	Ph.D.	*Sewer geyser mechanism and mitigation strategies*	Spring 2023
Linlong Bian	Ph.D.	*Dynamic flood management at the watershed scale*	Fall 2021
Dogukan Ozecik	M.S.	*An integrated software and hardware architecture for gravity-driven and remotely-operated water release*	Summer 2021
Sumit Zanje	M.S.	MS en-route to PhD	Summer 2021
Vivek Verma	Ph.D.	*Real-time, low-cost, and reliable integrated hardware and software framework for remotely operated water release*	Summer 2021
Li Qin	Ph.D.	*Advances in photoelectric detection (Visiting student of Dalian Maritime University, Dalian, China, August 2017-August 2018)*	Fall 2018
Ahmet Emirhan Yolcu	M.S.	*An Automated and Remotely Operated Siphon System for Flood Control*	Spring 2018
Julia Rask	M.S.	*Free surface flow-groundwater interaction: The Calapooia case study*	Winter 2018
Yunji Choi	Ph.D.	*Numerical Investigations on Sewer Geysers*	Winter 2018
Parnian Hosseini	Ph.D.	*Multi-objective Optimization of Reservoir Operation Under Uncertainty with Robust and Flexible Decision Variables*	Fall 2016
Ibrahem Elayeb	M.S.	*An experimental study on violent geysers in vertical shafts and a retrofitting method to reduce geyser intensity*	Spring 2016
Ali Alnahit	M.S.	*A remotely controlled siphon system for dynamic water storage management*	Summer 2015
Christopher Gifford-Miears	M.S.	*A Novel Framework for Uncertainty Propagation in River Systems based on Performance Graphs using Two-dimensional Hydrodynamic Modeling*	Winter 2014
Akemi E. Kanashiro	M.S.	*A new framework for flooding control in regulated river systems*	Winter 2013

Graduate Thesis or Project Committees

Minor Professor or Committee Member:

Current

1. Prince Mahmood, PhD Student (FIU, Civil Engineering)
2. Somnath Somadder, PhD Student (FIU, Mechanical and Materials Engineering)
3. Anthony Duarte, PhD Student (FIU, Earth Systems Science)

4. Aida Yahyavi Rahimi, PhD Student (FIU, Civil Engineering)
5. Monica Cardona, PhD Student (FIU, Earth Systems Science)

Graduated

At FIU

1. Nasim Mohamadiazar, PhD, 2025 (FIU, Civil Engineering)
2. Jimeng Shi, PhD, 2025 (FIU, School of Computing and Information Sciences)
3. Miguel E. Valencia, PhD, 2024 (FIU, Earth & Environment)
4. Aubrey Litzinger, MS, 2024 (FIU, Environmental Engineering)
5. Oscar Guzman Rey, PhD, 2022 (FIU, Earth & Environment)
6. Anupama John, PhD, 2020 (FIU, Civil Engineering)
7. Li Fei (External examiner), PhD, 2018, *The Hong Kong Polytechnic University (HKPU), Hong Kong,* Civil Engineering

At Previous institutions

8. Fong-Shu Jao, PhD, 2018 (UH, Civil Engineering)
9. Yan Miao, PhD, 2017 (UH, Civil Engineering)
10. Parameswaran Ariram, MS, 2017 (UH, Civil Engineering)
11. Amir Javaheri, PhD, 2017 (OSU, Civil Engineering)
12. Yun Tang, MEng, 2016 (OSU, Civil Engineering)
13. Eben M. Babb, MEng, 2016 (OSU, Civil Engineering)
14. Luis Gomes, MEng, 2016 (OSU, Civil Engineering)
15. Christopher Ryan Hockert, MEng, 2015 (OSU, Civil Engineering)
16. Grant Livingston, MS, 2015 (OSU Water Resources Graduate Program)
17. Lauren Dove, MEng, 2015 (OSU, Civil Engineering)
18. Joshua Sexton, MEng, 2015 (OSU, Civil Engineering)
19. Benjamin Church, MEng, 2014 (OSU, Civil Engineering)
20. Cao Chang, MEng, 2014 (OSU, Civil Engineering)
21. Kelli Walters, MS, 2014 (OSU, Civil Engineering)
22. Nathan Germann, MEng, 2013 (OSU, Civil Engineering)
23. Perry Morrow, MS, 2013 (OSU Water Resources Graduate Program)
24. Jeff Knowles, MEng, 2013 (OSU, Civil Engineering)
25. Jake Taylor, MEng, 2012 (OSU, Civil Engineering)
26. Kevin Heath, MEng, 2012 (OSU, Civil Engineering)
27. Owen Haskell, MEng, 2012 (OSU, Civil Engineering)

<u>Undergraduate Research Assistants/Research Interns and MS Research Interns</u>

At FIU

1. Hazem Aboukorin (Spring 2024 – Present), MS
2. Fabio Di Persio (Fall 2024), BS (Hons)
3. Dhruv Anand (Spring 2024 – Summer 2024), MS
4. Kalev Lemus (Fall 2022 – Fall 2023), MS
5. Matias Rodas (Summer 2023), BS
6. Lucas Hurley (Miami-Dade College, Summer 2023), BS
7. Jesus Galarza (Miami-Dade College, Summer 2023), BS
8. Antonio Herreros De Tejada (Miami-Dade College, Summer 2022), BS
9. Kianna Desilva (Miami-Dade College, Summer 2022), BS
10. Roberto Zotti (Spring 2022 – Fall 2022), BS
11. Carlos Amezquita (Summer 2021), BS

12. Carla Barrionuevo (Summer 2020), BS
13. Nicole Romanach (Spring 2020 – Spring 2021), BS
14. Francisca Olmos de Aguilera (Spring 2020), BS
15. Sabrina Hochberg (Spring 2020 – Spring 2021), BS
16. Angeluz Kobrosly (Spring 2020 – Fall 2020), BS
17. Daniel Viciana (Fall 2019 – Fall 2020), BS
18. Salome Montoya (Fall 2018 – Fall 2020), BS
19. Angela Hogan (Fall 2018 – Spring 2019), BS

At Previous institutions

20. Davis Isaias Hernandez-Alvarez (Winter 2016), BS
21. Tyler Oathes (Winter-Spring 2016), BS
22. Megan Conley (Winter-Spring 2016), BS
23. Alyssa Saito (Winter-Spring 2016), BS
24. Emily Napualani Luke (Winter-Spring 2016), BS
25. Devin Robert Sene (Winter-Spring 2016), BS
26. Parker Wood Murphy (Winter-Spring 2016), BS
27. Lee Brian Bissinger (Summer 2011, Fall 2012, Summer 2012, Spring 2014), BS
28. Tim Lloyd (Winter 2014, Spring 2014), BS
29. Emiko Fukuchi (Fall 2013 - Spring 2014) [Environmental Engineering], BS
30. YunJi Choi (Summer 2011, Winter 2012 - Summer 2012), BS
31. Jeffrey Knowles (Summer 2011), BS
32. Hadi Mirsadeghi (Summer 2010 - Fall 2010), BS
33. Esther Contreras (Summer 2010), BS

Postdoctoral Trainees

1. Zeda Yin, PhD, Fall 2024 – Present, Courtesy position.
2. Pratik Mahyawansi, PhD, Fall 2024, Paid position.
3. Sumit Zanje, PhD, Summer 2023-Present, Courtesy position.
4. Linlong Bian, PhD, Spring 2022-Present, Courtesy position.
5. Vivek Verma, PhD, Fall 2021-Fall 2023, Courtesy position.
6. Mohammad R. Safaei, PhD, August 2018 – Summer 2020, Paid position.
7. Hamid Bashiri, PhD, March 2017 – May 2018, Paid position.
8. Duan Chen, PhD, May 2013 – December 2016, Paid position.

STUDENT ORGANIZATIONS AND COMPETITIONS

At FIU

1. **Lead Faculty Advisor,** Campus RainWorks Challenge, USEPA, August 2018 – Present.
2. **Judge for student presentations and posters,** Conference for Undergraduate Research at FIU (CURFIU), April 8, 2019.
3. **Faculty Advisor, Engineers Without Borders (EWB) Florida International University Chapter,** Fall 2018 – Present.

At Previous institutions

4. **Faculty Advisor, Engineers Without Borders (EWB), University of Houston Chapter,** Spring 2017 – Spring 2018.
5. **Faculty Advisor, Engineers Without Borders (EWB), Oregon State University Chapter,** Winter 2011 – Spring 2016. During this period, I reviewed technical reports for two international EWB projects and assisted in designing hydraulic structures for them. In 2013, the

EWB-OSU Chapter received the **Premier Project National Award for successfully implementing a well and rainwater catchment system in Lela, Kenya**. This award recognizes excellence in EWB-USA projects.

6. **Judge for student presentations and posters,** OSU Water Resources Research Symposium, 2013, 2014.

SERVICE TO THE PUBLIC (SELECTED)

1. **International Visitor Leadership Program, 2013.** I participated as panelist in the International Visitor Leadership Program, a greening of America with a focus on renewable energy: A Project for Germany, Corvallis, OR, June 26, 2013.
2. **Laboratory Demonstration, Intel Engineering Summer Scholars (IESS) program, 2013.** IESS is a bridge program designed for high-achieving, underrepresented minority freshmen in engineering. As part of the program, a group of 30 students spends 45 minutes in the Hydraulics Teaching Laboratory (recirculation flume) learning about the dangers of submerged hydraulic jumps—hazardous phenomena that occur downstream of dams and pose risks to kayakers and boaters in rivers.
3. **Reviewer of Technical Reports, Engineers Without Borders (EWB), Oregon State University Chapter, 2011-2016.** I reviewed technical reports and design documents for two international water-related projects.
4. **Hosted Advocates for Women in Science, Engineering, and Math (AWSEM), 2012:** Two groups—25 female high school students and 25 female middle school students—each spend 30 minutes in the Hydraulics Teaching Laboratory (recirculation flume) learning about the dangers of submerged hydraulic jumps, which occur downstream of dams and pose risks to kayakers and boaters.
5. **Designer, Engineers Without Borders, University of Illinois at Urbana-Champaign Chapter (2005-2006).** Provided guidance in designing water infrastructure for the Enugu State Water Development Project in Nigeria.

SERVICE TO MEDIA AND NEWS OUTLETS (SELECTED)

1. (March 23, 2023). Dr. Leon participated as a panelist at the World Happiness Fest 2023 in Miami, FL. The session was titled *"How Can the Latest Inventions and Technologies Evolve 'Smart Cities' into 'Cities of Happiness'?"* (https://worldhappinessfest2023miami.sched.com/event/126pa/how-can-the-latest-inventions-and-technologies-evolve-smart-cities-into-cities-of-happiness).
2. (August 11, 2022). Dr. Leon participated in the Water Roundtable at the MITRE Miami Innovation Hub (iHub) in Miami, FL.
3. (May 25, 2020). Dr. Leon was interviewed by Voz de America about winning first place in the 2019 EPA Campus RainWorks Challenge. The interview can be viewed here.
4. (March 26, 2020). Dr. Leon was interviewed by the Sun Sentinel on why sewer line breaks have stopped during Corona Virus in Fort Lauderdale, Florida. See more at this link.
5. (January 30, 2018). Dr. Leon was interviewed on solutions for Houston's flooding problems. See more at https://www.houstoniamag.com/articles/2018/1/30/houston-flooding-problems-solution , or https://rare.us/local/houston/a-u-of-h-professor-says-he-knows-the-solution-to-houstons-flood-troubles-but-its-nothing-new/
6. (October 25, 2017). Dr. Leon was interviewed on the releases of the Barker and Addicks reservoirs. See more at https://communityimpact.com/houston/katy/development-construction/2017/10/25/barker-addicks-releases-still-frustrating-residents-but-officials-say-flooding-was-inevitable/

7. (October 3, 2017). Dr. Leon was interviewed by HoustonPress on the controlled release of the Addicks and Barker Dams by the U.S. Army Corps of Engineers. See more at http://www.houstonpress.com/news/how-houston-is-recovering-from-hurricane-harvey-one-month-later-9842561
8. (September 21 and 22, 2017). Dr. Leon was interviewed on the replacement of Addicks and Barker Dams in Houston. See more at http://www.houstonpress.com/news/sheila-jackson-lee-calls-for-addicks-and-barker-to-be-redone-post-harvey-9813174 and http://www.houstonpublicmedia.org/articles/news/politics/2017/09/20/238162/jackson-lee-replace-addicks-and-barker-dams/
9. (August 31, 2017). Dr. Leon was interviewed by over ten national and international magazines, radio stations, and TV networks regarding the Hurricane Harvey flooding in Houston. Some of the articles can be viewed at https://www.scientificamerican.com/article/hurricane-harvey-houston-has-no-quick-way-to-get-rid-of-floodwater1/, http://plus.lapresse.ca/screens/054d6c99-e395-4274-ba07-950c42e7a4f1%7C_0.html, https://iowaenvironmentalfocus.org/2017/09/, https://www.carbonbrief.org/daily-brief/harvey-makes-another-landfall-port-arthur-now-underwater, https://www.egr.uh.edu/news/201709/uh-civil-engineer-provides-science-behind-hurricane-harvey-floods-national-media
10. (September 2016). Dr. Leon discussed the world's largest indoor waterfall with *WIRED* magazine (September 2016 issue). The waterfall, known as the Rain Vortex, was scheduled to open inside Singapore's Changi Airport in 2018. See more at https://www.wired.com/2016/09/fit-worlds-biggest-indoor-waterfall-airport/
11. (Nov 2014). Dr. Leon was interviewed by the American Society of Mechanical Engineers (ASME) about top careers in hydraulic engineering in November 2014. See the interview at https://www.asme.org/engineering-topics/articles/workforce-development/4-leading-job-areas-hydraulics