

Curriculum Vitae

Dr. Leonel E. Lagos, Moss School of Construction

EDUCATION/TRAINING

Degree	Institution	Field	Year
Ph.D.	Florida International University	Civil Engineering	2007
M.S.	Florida International University	Mechanical Engineering	1996
B.S.	University of Florida	Aerospace Engineering	1991
PMP (#575547)	Project Management Institute	Project Mgmt. Professional	2006

FULL-TIME ACADEMIC EXPERIENCE

Dates

Institution	Rank	Department	Dates
Florida International University	Associate Professor	Moss School of Construction	2022 – Present

PART-TIME ACADEMIC EXPERIENCE

Institution	Rank	Department	Dates
Florida International University	Lecturer	Biomedical Engineering	2020 – Present
Florida International University	Adjunct Professor	Mechanical Engineering	2016-2020

NON-ACADEMIC EMPLOYMENT

Institution	Rank	Discipline	Dates
Florida Department of Transportation	Field Engineer	Civil Engineering	1991 – 1993

EMPLOYMENT RECORD AT FIU

Position	Department	Field	Year
Associate Professor	Moss School of Construction	Construction Management	2022 – Present
Director of Research	Applied Research Center	R&D and Nuclear Decommissioning Research	2012 – Present
Adjunct Professor	BME and MEE	Applied Mechanics	2016 – Present
Associate Director	Applied Research Center	Project Mgmt. Professional	2008 – 2012
Senior Research Scientist	Applied Research Center	R&D and Nuclear Decommissioning Research	2003 – 2008
Research Scientist	Applied Research Center	R&D and Nuclear Decommissioning Research	2001 – 2003
Field/Test Engineer	Applied Research Center	R&D and Nuclear Decommissioning Research	1996 – 2001
Graduate Research Assistant	Applied Research Center	R&D and Nuclear Decommissioning Research	1993 – 1996

PEER-REVIEWED JOURNAL PUBLICATIONS

Bold indicates Graduate Student Mentored as Chair/Co-chair or Project Manager/PI, IF – Impact Factor

1. **A. Duani Rojas**, T. Johnson, J. Soni, H. Upadhyay, L. Lagos, H. Gonzalez-Raymat, "AI-Driven Anomaly Detection for Water Seepage Monitoring Using Electrical Resistivity Tomography," *Neural Computing and Applications*, January 2026
2. **Ndolo, J.K., Oyege, I.**, Lagos, L., "Automated Hurricane Damage Classification Using 3D Point Cloud Analysis and Machine Learning: Post-Hurricane Michael Case Study," *Sustainability* (MDPI), December 2025, **IF: 4.32** <https://www.mdpi.com/2071-1050/18/1/90>
3. **M. Komninakis**, J. Sinicrope, L. Lagos, J. Nicholson, D. Radu, "Quantifying the Effectiveness of Fixative Coatings in Reducing Airborne Release Fractions Under Impact Stress," *Nuclear Engineering and Technology*, September 2025, **IF: 3.0** <https://www.sciencedirect.com/science/article/pii/S1738573325004796>
4. **E. Paula**, J. Soni, H. Upadhyay, L. Lagos, "Comparative analysis of model compression techniques for achieving carbon efficient AI," *Nature Scientific Reports*, (2025), **IF: 4.0, citations: 4** <https://www.nature.com/articles/s41598-025-07821-w>
5. **J. Adams, B. Cintas, A. Abrahao**, L. Lagos, D. McDaniel, "A Behavioral Robotics Approach to Radiation Mapping using Adaptive Sampling," *Applied Science*, MDPI (2025), <https://www.mdpi.com/2076-3417/15/4/2050> **IF: 2.7, citations: 1**
6. Hamrani, A., **Rayhan, Md Munim, Telusma, M.**, McDaniel, D., Lagos, L., "Smart Quadruped Robotics: A Systematic Review of Design, Control, and AI Innovations" *Advanced Robotics*, (2025), <https://doi.org/10.1080/01691864.2024.2411684>, **IF: 2.60, citations:**
7. **F. Rivera-Noriega, A. De La Noval**, H. Upadhyay, L. Lagos & J. Soni, "Generative AI Techniques for the Simulation of Groundwater Well Data at Hanford Site," 20th International Conference, ICDATA 2024, Held as Part of the World Congress in Computer Science, Computer Engineering and Applied Computing, CSCE 2024, Las Vegas, NV, USA, July 22–25, 2024, Conference Paper, 17 April 2025, pp 228–243, Springer.
8. Soni J., Upadhyay H., Lagos L., Siddiquee M., Song X. (2024), "Machine Learning Approach for Groundwater Contamination Spatiotemporal Relationship Exploration," *MDPI – Water* (2025), <https://www.mdpi.com/journal/water> **IF: 3.0**
9. M. ElZomor, **C. Calle-Muller**, L. Lagos, "Leveraging Disruptive Technologies for Faster and More Efficient Disaster Management," *Sustainability Journal*, (2024) <https://www.mdpi.com/2071-1050/16/23/10730/> **IF: 1.88, citations:**
10. **De La Noval, A.**, Upadhyay, H., Lagos, L., Soni, J., Prabakar, N., "Spatial-Temporal Analysis of Groundwater Well Features from Neural Network Prediction of Hexavalent Chromium Concentration," *Nature Technical Reports*, (2024), **IF: 4.00, citations:**
11. **Rojas, A. (PhD)**, Lagos, L., Upadhyay, H., Soni, J., "AI Based Detection and Identification of Low-Level Nuclear Waste: A Comparative Analysis," *Journal of Neural Computing and Applications*, <https://link.springer.com/article/10.1007/s00521-024-10238-7>, **IF: 4.5, citations:**
12. **C. Estrada**, J. Dickson, Y. Katsenovich, L. Lagos, A. Johs, E. Pierce, "Sorption Kinetics and Stability of Conventional Adsorbents for Mercury Remediation," *Journal of Environmental Chemical Engineering* (2024), <https://www.sciencedirect.com/science/article/abs/pii/S2213343724017949?via%3Dihub> **IF: 7.4, citations: 1**
13. Y. Katsenovich, V. Drozd, S. Kandel, **L. Lagos**, M. Asmussen, "The corrosion behavior of borosilicate glass in the presence of cementitious waste forms," *Dalton Transactions* (2024), 53, 12740-12754. DOI: 10.1039/D4DT00855C, <https://pubs.rsc.org/en/Content/ArticleLanding/2024/DT/D4DT00855C> **IF: 3.50, citations:**
14. **M. Komninakis**, J. Syncope, J. C. Nicholson, P. Moore, Y. Rodriguez, L. Lagos, D. Radu, "Determination of Airborne Release Fractions from Loose Powder Contamination Under Impact Stress," *Journal of Nuclear Technology* (2024), <https://www.tandfonline.com/doi/full/10.1080/00295450.2024.2345945> **IF: 2.93, citations: 1**

- Siddiquee, M., Meray, A.,** Xu, Z., Gonzalez-Raymat, H., Danielson, T., Upadhyay, H., Lagos, L., Eddy-Dilek, C., Wainwright, H., “*Machine Learning Approach for Spatiotemporal Multivariate Optimization of Environmental Monitoring Sensor Locations*,” *Artificial Intelligence for the Earth Systems* (2024), <https://journals.ametsoc.org/view/journals/aies/aop/AIES-D-23-0011.1/AIES-D-23-0011.1.xml> **IF: citations: 1**
15. J. Soni, H. Upadhyay, H. Wainwright, Z. Xu; L. Lagos, “*Advanced Deep Learning Models for Groundwater Contaminant Dynamics at the Savannah River Site*,” *IEEE Xplore*, 2024.
 16. **A. Awwad**, D. McDaniel, L. Lagos, J. Rivera, B. Tansel, “*Effect of ion penetration on the aging of EPDM components used in caustic liquid transfer lines by microscopic analysis*,” *International Journal of Pressure Vessels and Piping*, (2024), Vol 209, <https://doi.org/10.1016/j.ijpvp.2024.105173> , **IF 3.0, citations:**
 17. Wainwright, H. M., Powell, B. A., Hoover, M. E., Ayoub, A., Atz, M., Benson, C., Borrelli R., Djokic D., Eddy-Dilek C., Ermakova D., Hayes R., Higley K., Krahn S., Lagos L., Landsberger S., Leggett C., Regalbuto M., Roy W., Shuller-Nickles L., & Ewing, R. C., “*Nuclear Waste Educator’s Workshop: What and How Do We Teach About Nuclear Waste?*,” *Journal of Environmental Radioactivity*, (2023), 270, 107288, <https://www.sciencedirect.com/science/article/pii/S0265931X23001819>. **IF: 2.37, citations: 4**
 18. **K. Wu, P. Xiang, R. Ramon**, A. Aravelli, L. Lagos, O. Bai, “*Assessment of a Modular Upper-Limb Exoskeleton with Powered Assistance*,” *IEEE Xplore* (2023), *International Conference on Automation, Robotics and Computer Engineering (ICARCE)*, <https://ieeexplore.ieee.org/document/10492561>
 19. **Aldyaflah, I. M., Zhao, W.,** Upadhyay, H., & Lagos, L. “*The Design and Implementation of a Secure Datastore Based on Ethereum Smart Contract*,” *Applied Sciences*, (2023), 13(9), 5282. <https://www.mdpi.com/2076-3417/13/9/5282> **IF: 2.84, citations: 4**
 20. Zhao, W., **Aldyaflah, I. M., Gangwani, P.,** Joshi, S., Upadhyay, H., Lagos, L. “*A Blockchain-Facilitated Secure Sensing Data Processing and Logging System*,” *IEEE Access*, (2023), 11, 21712-21728, <https://ieeexplore.ieee.org/document/10058513>. **IF: 3.9, citations: 27**
 21. **Soni, J.,** Prabakar, N., Upadhyay, H., & Lagos, L. “*MLE-NET: A Multi-Layered Ensemble Approach for an Enhanced Anomaly Detection*,” *International Journal for Computers & Their Applications*, (2023), 30(1), 5-13, [Final March 2023 Journal Issue.pdf \(isca-hq.org\)](https://www.isca-hq.org/Final_March_2023_Journal_Issue.pdf), **IF: 0.15, citations:**
 22. **Awwad, A.,** McDaniel, D., Lagos, L., Rivera, J., & Tansel, B. “*Effect of Solution Concentration on Ethylene Propylene Diene Monomer (EPDM) Nonmetallic Components Used in Caustic Liquid Waste Transfer Lines*,” *Engineering Failure Analysis* (2023), 145, 107007, <https://www.sciencedirect.com/science/article/abs/pii/S1350630722009748> **IF:3.73, citations: 2**
 23. **Gangwani, P.,** Joshi, S., Upadhyay, H., & Lagos, L. (2023). “*IoT Device Identity Management and Blockchain for Security and Data Integrity*,” *International Journal of Computer Applications*, (2023), 184(42), 49-55, <https://www.ijcaonline.org/archives/volume184/number42/32593-2023922529> **IF: 3.17, citations: 10**
 24. **Aldyaflah, I.M.,** Zhao, W., 1, Upadhyay, H., Lagos, L. “*The Design and Implementation of a Secure Datastore Based on Ethereum Smart Contract*,” *Applied Science*, (2023), 13, 5282 (1-29). <https://www.mdpi.com/2076-3417/13/9/5282>. **IF: 2.84, citations: 15**
 25. **Meray, A (PhD). O., Sturla, S., Siddiquee, M. R.,** Serata, R., Uhlemann, S., Gonzalez-Raymat, H., Denham M., Upadhyay H., Lagos L., Eddy-Dilek C. & Wainwright, H. M., “*Pylenn: A machine learning framework for long-term groundwater contamination monitoring strategies*,” *Environmental Science & Technology*, (2022), 56(9), 5973-5983. <https://pubs.acs.org/doi/10.1021/acs.est.1c07440>. **IP: 11.4, citations: 25**
 26. **Bhardwaj, T,** Reyes, C., Upadhyay, H., Sharma, S., Lagos, L., “*Cloudlet-enabled wireless body area networks (WBANs): a systematic review, architecture, and research directions for*

QoS Improvement,” International Journal of System Assurance Engineering and Management (2022), 13(4):1531–1555, <https://link.springer.com/content/pdf/10.1007/s13198-021-01508-x.pdf> IP: 2.02, citations: 12

----- PRIOR TO JOINING MSC AT FIU -----

27. M.A. Abd, R Paul, A Aravelli, O Bai, L Lagos, M Lin, ED Engeberg. “Hierarchical tactile sensation integration from prosthetic fingertips enables multi-texture surface recognition,” Sensors, (2021), <https://pubmed.ncbi.nlm.nih.gov/34202796/> IF: 3.58, citations: 23
28. Awwad, A., McDaniel, D., Lagos, L., Rivera, J., & Tansel, B. “Effect of temperature and aging duration on ethylene propylene diene monomer (EPDM) nonmetallic components used in caustic liquid waste transfer lines,” Engineering Failure Analysis, (2021), 128, 105633. <https://doi.org/10.1016/j.engfailanal.2021.105633> IF: 3.73, citations: 2
29. Gangwani, P., Perez-Pons, A., Bhardwaj, T., Upadhyay, H., Joshi, S., Lagos, L. “Securing Environmental IoT Data Using Masked Authentication Messaging Protocol in a DAG-Based Blockchain: IOTA Tangle,” Future Internet, (2021),13 (12), 312, <https://www.osti.gov/biblio/1834423> IF: 4.33, citations: 62
30. Gohel, H., Upadhyay, H., Lagos, L., Cooper, K., Sanzetenea, A. “Predictive maintenance architecture development for nuclear infrastructure using machine learning,” Nuclear Engineering and Technology, (2021) 52,1436e1442, <https://koreascience.kr/article/JAKO202020941304637.pdf> IF: 2.70, citations: 163
31. Peddoju, S.K., Upadhyay, H., Lagos, L. (2020). “File integrity monitoring tools: Issues, challenges, and solutions,” Concurrency and Computation: Practice and Experience, (2020), 32, 22, e5825. <https://onlinelibrary.wiley.com/doi/10.1002/cpe.5825> IF: 2.57, citations: 17
32. Katsenovich, Y., Cardona, C., Szecsody, J., Lagos, L., Tang, W., “Assessment of calcium addition on the removal of U(VI) in the alkaline conditions created by NH₃ gas,” Applied Geochemistry, (2018), <https://www.sciencedirect.com/science/article/pii/S0883292718300544> IF: 3.4, Citations: 7
33. A. Aravelli, O. Bai, E. Engeberg, L. Lagos, R. Demmer, “Human fatigue quantification and assessment of robotic manipulators in glove box operations,” Transactions of the American Nuclear Society (2018), Vol 119, 1351-1353, <https://inl.elsevierpure.com/en/publications/human-fatigue-quantification-and-assessment-of-robotic-manipulato> IF: Citations:
34. P. Jiang, Y. Li, G. Liu, G. Yang, L. Lagos, Y. Yin, B. Gu, G. Jiang, Y. Cai, “Evaluating the role of re-adsorption of dissolved Hg₂⁺ during cinnabar dissolution using isotope tracer technique,” Journal of Hazardous Materials, (2016), 466-475, <https://www.sciencedirect.com/science/article/pii/S0304389416305295> IF: 14.2 Citations: 18
35. Yelena P Katsenovich, Claudia Cardona, Robert Lapierre, Jim Szecsody, Leonel E, “The effect of Si and Al concentrations on the removal of U (VI) in the alkaline conditions created by NH₃ gas,” Applied Geochemistry, (2016), (73), 109-117, <https://www.sciencedirect.com/science/article/pii/S0883292716301846?via%3Dihub>, IF: 3.09 Citations: 5
36. Paola M Sepulveda-Medina, Yelena P Katsenovich, Dawn M Wellman, Leonel E Lagos, “The effect of bicarbonate on the microbial dissolution of autunite mineral in the presence of gram-positive bacteria,” Journal of Environmental Radioactivity, (2015), vol. 144, 77-85, Elsevier, <https://www.sciencedirect.com/science/article/pii/S0265931X15000661> IF: 2.67 Citations: 5
37. Paola Sepulveda-Medina, Yelena Katsenovich, Vishal Musaramthota, Michelle Lee, Brady Lee, Rupak Dua, Leonel Lagos, “The effect of uranium on bacterial viability and cell surface morphology using atomic force microscopy in the presence of bicarbonate ions,” Research in Microbiology, (2015), vol. 166, 5, 419-427, IF: 2.60 Citations: 15
38. R. Gudavalli, Y. Katsenovich, D. Wellman, M. Idarraga, L. Lagos, B. Tansel, “Comparison of the kinetic rate law parameters for the dissolution of natural and synthetic autunite in the presence of aqueous bicarbonate ions,” Chemical Geology, (2013), vol.351, 299-309, Elsevier, IF: 4.07 Citations: 18

39. **R. Gudavalli**, Y. Katsenovich, D. Wellman, L. Lagos, B. Tansel, "Quantification of kinetic rate law parameters of uranium release from sodium autunite as a function of aqueous bicarbonate concentrations," *Environmental Chemistry* (2013), vol. 10, 6, 474-485, **IF: 4.30, citations: 11**
40. **S. Munavalli**, N. Pissinou, L. Lagos, X. Jin, "Structural damage detection of nuclear reactor sites using sensor networks," *Sensors, IEEE* (2013), (1-4), **IF: 4.30, citations: 3**
41. **D. Carvajal**, Y. Katsenovich, L. Lagos, "The effects of aqueous bicarbonate and calcium ions on uranium biosorption by *Arthrobacter G975* strain," *Chemical Geology* (2012), vol. 330, 51-59, <https://www.sciencedirect.com/science/article/abs/pii/S0009254112003774?via%3Dihub> **IF: 4.07 Citations: 36**
42. Y. Katsenovich, **D. Carvajal**, D. Wellman, L. Lagos, "Enhanced U (VI) release from autunite mineral by aerobic *Arthrobacter* sp. in the presence of aqueous Bicarbonate," *Chemical Geology*, (2012), vol. 308, 1-9, <https://www.sciencedirect.com/science/article/pii/S0009254112001350> **IF: 4.07 Citations: 24**
43. **R. Banerjee**, Y. Katsenovich, L. Lagos, M. Senn, M. Naja, V. Balsamo, K. Pannell, C-Z. Li, "Functional magnetic nanoshells integrated nanosensor for trace analysis of environmental uranium contamination," *Electrochimica Acta* (2010), vol. 55, issue 27, 7897-7902, <https://www.sciencedirect.com/science/article/pii/S0013468610007516> **IF: 6.90 Citations: 29**
44. **R Banerjee**, Y Katsenovich, L Lagos, M McIntosh, X Zhang, CZ Li, "Nanomedicine: magnetic nanoparticles and their biomedical applications," *Current Medicinal Chemistry* (2010), Vol. 17 number 27, 3120-3141, <https://www.ingentaconnect.com/content/ben/cmc/2010/00000017/00000027/art00012>, **IF: 4.10 Citations: 192**
45. L Lagos, J Varona, **A. Zidan**, R Gudavalli, Kuang-His Wu, "Preliminary experimental analysis of soil stabilizers for contamination control," *International Conference on Nuclear Engineering*, ASME Digital Collection (2006), 42460, 543-548, <https://asmedigitalcollection.asme.org/ICONE/proceedings-abstract/ICONE14/42460/543/315693>, **citations: 5**
46. L. Lagos, W Li, MA Ebadian, TL White, RG Grubb, D Foster, "Heat transfer within a concrete slab with a finite microwave heating source," *International journal of heat and mass transfer*, (1995), 38, 5, 887-897, <https://www.sciencedirect.com/science/article/pii/001793109400200F> **IF: 5.2 citations: 54**

CONFERENCE PROCEEDINGS/PANELS

Bold indicates Graduate Student Mentored as Chair/Co-chair or Program/Project Manager

1. **J. Saripalli**, P. Gangawani, H. Upadhyay, L. Lagos, A. Perez Pons, "Machine Learning Approach on Detection of DDoS and Malware Attacks in Drone Communication Networks," EAI ICDF2C Conference, November 17-19, 2025, Miami, Florida
2. **J. Saripalli**, A. Abrahao, M. Telusma, L. Lagos, "Multi-View Computer Vision for Autonomous Nuclear Waste Sorting," American Nuclear Society Winter Meeting, November 9-12, 2025, Washington, DC
3. **L. Lagos**, "Robotic Technologies for Nuclear Decommissioning," Nuclear Energy Agency (NEA) WPTES/EGRRS Workshop on the Role of Innovation in the Nuclear Back End, Harnessing Robotics and Advanced Technologies for Safer and More Efficient Activities," April 1 – 3, 2025, Workington, United Kingdom (UK)
4. **L. Lagos**, "Session 228 Panel: D&D – Use of Advanced Technologies for Radioactive Waste Management and Decommissioning," Waste Management Symposia 2025, Phoenix, AZ March 9 -13, 2025 [Panel Co-Chair]
5. **L. Lagos**, "Session 060: Panel: Graduating Students and New Engineers- Wants and Needs – Are Companies Even Listening?," Waste Management Symposia 2025, Phoenix, AZ March 9 - 13, 2025 [Panel Co-Chair]

6. **L. Lagos**, “*Session 208 Artificial Intelligence and Digital Twins for Decommissioning and Cleanup of Sites*,” Waste Management Symposia 2025, Phoenix, AZ March 9 -13, 2025 [Panel Co-Chair]
7. **L. Lagos**, “*Session 039 Student Poster Competition: Future Industry Leaders*,” Waste Management Symposia 2025, Phoenix, AZ March 9 -13, 2025 [Panel Co-Chair]
8. **M. Telusma, A. Abrahao, L. Lagos**, “*Development of an Advanced Aerial NDE System for Long-Term Monitoring of SRNL Concrete Structures - 25517*,” Proceedings of the Waste Management Symposia 2025, Phoenix, AZ, March 9 – March 13, 2025
9. **M. Telusma, A. Abrahao, L. Lagos**, “*Radiation Mapping and Wall Crawler Development for Advanced Inspection and Repair of Concrete Structures - 25553*,” Proceedings of the Waste Management Symposia 2025, Phoenix, AZ, March 9 – March 13, 2025
10. **C. Quintanilla, V. Korol, S. Betancourt Castillo, F. Silvestri, A. Abrahao, G. Govindarajan, L. Lagos**, “*Companion Robot Development to Assist Field Operators in Mercury Characterization Tasks at Oak Ridge Y12 Facility*,” Proceedings of the Waste Management Symposia 2025, Phoenix, AZ, March 9 – March 13, 2025
11. **A. Abrahao, L. Lagos, M. Telusma, P. Hazenberg, R. Ramon**, “*Ground Penetrating Radar Robot Development for Disposal Cells Autonomous Mapping and Long-Term Surveillance*,” Proceedings of the Waste Management Symposia 2025, Phoenix, AZ, March 9 – March 13, 2025
12. **S. Cuartas Palacio, A. Abrahao, L. Lagos, M. Telusma**, “*Semi-Autonomous Repair Using Mobile Manipulator and Plug-and-Play Tooling for Nuclear Facilities and Tank Farms*,” Proceedings of the Waste Management Symposia 2025, Phoenix, AZ, March 9 – March 13, 2025
13. **H. Upadhyay, W. Quintero, S. Joshi, L. Lagos**, “*Waste Information Management System with 2024-25 Waste Streams – 25309*,” Proceedings of the Waste Management Symposia 2025, Phoenix, AZ, March 9 – March 13, 2025
14. **H. Upadhyay, W. Quintero, S. Joshi, L. Lagos**, “*Large Language Model based D&D ChatBot on Knowledge Management Information Tool (KM-IT) Platform – 25316*,” Proceedings of the Waste Management Symposia 2025, Phoenix, AZ, March 9 – March 13, 2025
15. **H. Upadhyay, J. Soni, A. Duani Rojas, S. Joshi, W. Quintero, L. Lagos**, “*Optimizing k-Subset Selection to Improve Few-Shot Object Detection for Nuclear Waste Segregation – 25370*,” Proceedings of the Waste Management Symposia 2025, Phoenix, AZ, March 9 – March 13, 2025
16. **A. Duani Rojas, H. Upadhyay, L. Lagos, T. Johnson**, “*Optimizing Hexavalent Chromium Soil Flushing through Deep Learning of Function Norms*,” Proceedings of the Waste Management Symposia 2025, Phoenix, AZ, March 9 – March 13, 2025
17. **F. Rivera Noriega, H. Upadhyay, L. Lagos, T. Johnson**, “*Improving Radon Risk Mapping Using Advanced Data Analytics and AI/ML*,” Proceedings of the Waste Management Symposia 2025, Phoenix, AZ, March 9 – March 13, 2025
18. **A. Litzinger, P. Hazenberg, A. Lawrence, L. Lagos, R. Gudavalli, D. Moulton, A. Ward**, “*Simulating Hydrology and Climate Impacts for Basin 6 near the WIPP in New Mexico with the Advanced Terrestrial Simulator*,” Proceedings of the Waste Management Symposia 2025, Phoenix, AZ, March 9 – March 13, 2025
19. **J. Soni, H. Upadhyay, L. Lagos, H. Wainwright, Z. Xu, H. Gonzalez-Raymat, C. Eddy-Dilek**, “*Machine Learning Driven Tritium Prediction & Automation Supporting ALTEMIS at Savannah River Site*,” Proceedings of the Waste Management Symposia 2025, Phoenix, AZ, March 9 – March 13, 2025
20. **M. Dieguez, Y. Katsenovich, L. Lagos, V. Drozd, N. Qafoku, J. Szecsody, H. Emerson, R. Mackley**, “*Coupling of Strong Reductants with Ammonia Gas Treatment for Vadose Zone Remediation from Commingled Contaminants*,” Proceedings of the Waste Management Symposia 2025, Phoenix, AZ, March 9 – March 13, 2025

21. M. Boan, M. Asmussen, **L. Lagos**, D. McDaniel, “*Corrosion Behavior of Potential Container Materials Contacting Grout-Waste Forms for Hanford Integrated Disposal Facility*”, Proceedings of the Waste Management Symposia 2025, Phoenix, AZ, March 9 – March 13, 2025.
22. M. Boan, **L. Lagos**, D. McDaniel, “*Protective Polyurea Coatings for the Protection of DOE-EM Concrete Infrastructures*”, Proceedings of the Waste Management Symposia 2025, Phoenix, AZ, March 9 – March 13, 2025 [submitted]
23. **R. Valdes, A. Acosta, M. Cruz, A. Garcia**, D. McDaniel, L. Lagos, P. Shukla, K. Denslow, B. Wiersma, K. Chirino, “*Sensor Technologies for Degradation Assessment in Buried Pipe-in-Pipe Waste Transfer Lines*,” Proceedings of the Waste Management Symposia 2025, Phoenix, AZ, March 9 – March 13, 2025 [submitted]
24. **B. Cintas, D. Rojas, T. Pierre, P. Chaviano**, D. Reid, K. Boomer, L. Lagos, “*Advancing Environmental Management Through Innovative Internships and Technology Projects at Hanford*,” Proceedings American Nuclear Society Winter Meeting, Orlando Florida, November 17-20, 2024.
25. **B. Cintas**, L. Lagos, A. Abrahao, D. Reid, K. Boomer, “*Long Term Surveillance for Hanford Tank Farms Using Mobile Platforms*,” Proceedings American Nuclear Society Winter Meeting, Orlando Florida, November 17-20, 2024.
26. **R. Velasquez, T. Pierre**, A. Abrahao, M. Telusma, D. McDaniel, L. Lagos, “*Development of a Material Sampling Miniature Rover for Hanford Double Shell Tank Inspection*,” Short Abstract, Proceedings American Nuclear Society Winter Meeting, Orlando Florida, November 17-20, 2024.
27. **D. Rojas, R. Velasquez**, A. Abrahao, D. McDaniel, L. Lagos, “*Automation and Monitoring of a Peristaltic Pipe Crawler and Mechanized Reel System for the Inspection of Leaks Beneath Single Shell Tanks at the Hanford Site*,” Short Abstract, Proceedings American Nuclear Society Winter Meeting, Orlando Florida, November 17-20, 2024.
28. **D. Coelho**, A. Abrahao, M. Telusama, P. Hazenberg, L. Lagos, “*Disposal Cells Subsurface Erosion Mapping using Ground Penetrating Radar and Autonomous Robots*,” Short Abstract, Proceedings American Nuclear Society Winter Meeting, Orlando Florida, November 17-20, 2024.
29. **C. Rios, M. Escobar**, L. Lagos, “*Integration of Robotics and Sensors for Digital Decommissioning*,” Short Abstract, Proceedings American Nuclear Society Winter Meeting, Orlando Florida, November 17-20, 2024.
30. **N. Espinal, K. Yulkowski**, M. Telusma, A. Abrahao, D. McDaniel, L. Lagos, “*Wall Crawler Development for Concrete Structures Inspection and Repair*,” Short Abstract, Proceedings American Nuclear Society Winter Meeting, Orlando Florida, November 17-20, 2024.
31. **H. Saripalli**, M. Telusma, A. Abrahao, L. Lagos, “*Development of an Advanced NDE Aerial Inspection System for Long-Term Surveillance of SRNL's Concrete Structures*,” Short Abstract, Proceedings American Nuclear Society Winter Meeting, Orlando Florida, November 17-20, 2024.
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BOOK CHAPTERS

1. **Gangwani, P.** (Post-Doctoral Fellow), Joshi, S., Upadhyay, H., Lagos, L. “*AI-Based Anomaly Detection on IoT Data-Driven Thermal Power Plants for Condition Monitoring and Preventive Maintenance*,” Artificial Intelligence in Cyber Security: Theories and Applications,” Springer International Publishing (2023), pp. 83-97, https://link.springer.com/chapter/10.1007/978-3-031-28581-3_8 Citations: 1
2. **Gangwani, P.** (Post-Doctoral Fellow), **Bhardwaj, T.**, Perez-Pons, A., Upadhyay, H., Lagos, L. “*On the Convergence of Blockchain and IoT for Enhanced Security*,” Artificial Intelligence in Cyber-Physical Systems, CRC Press (2023), pp. 35-49, <https://www.taylorfrancis.com/chapters/edit/10.1201/9781003248750-3/> Citations: 10
3. **Gangwani, P.** (Post-Doctoral Fellow), Perez-Pons, A., Joshi, S., Upadhyay, H., and Lagos, L. “*Integration of Data Science and IoT with Blockchain for Industry 4.0*,” Blockchain and its Applications in Industry 4.0,” Singapore: Springer Nature (2023), (pp. 139-177). https://link.springer.com/chapter/10.1007/978-981-19-8730-4_6 . Citations: 14

----- PRIOR TO JOINING MDCM AT FIU -----

4. **Bhardwaj, T.** (Post-Doctoral Fellow), Upadhyay, H., Lagos, L. (2021). “*Deep learning-based cyber security solutions for smart-city: application and review*,” Artificial Intelligence in Industrial Applications: Approaches to Solve the Intrinsic Industrial Optimization Problems (2021), pp. 175-192. https://link.springer.com/chapter/10.1007/978-3-030-85383-9_12 Citations: 10
5. **Bhardwaj, T.** (Post-Doctoral Fellow), Mittal, R., Upadhyay, H., Lagos, L. “*Applications of swarm intelligent and deep learning algorithms for image-based cancer recognition*,” Artificial Intelligence in Healthcare, (2022), pp. 133-150, https://link.springer.com/chapter/10.1007/978-981-16-6265-2_9 Citations: 21
6. G. Liu, Y. Cai, G. Tachie, L. Lagos, “*Mercury mass budget estimates and cycling in the Florida everglades*,” Microbiology of the Everglades Ecosystem (2015), Vol.42, p.68, <https://www.routledge.com/Microbiology-of-the-Everglades-Ecosystem/Entry-Gottlieb-Jayachandran-Ogram/p/book/9780367738419>

SELECTED PRESENTATIONS AND REPORTS

Bold indicates Graduate Student Mentored as Chair/Co-chair or Program/Project Manager

1. **L. Lagos et al**, “Year End Report – Department of Energy – Florida International University Cooperative Agreement (Cooperative Agreement No. DE-EM0005213),” Projects 1-5, 06/12/2025 <https://doeresearch.fiu.edu/SitePages/2024.aspx>
2. **L. Lagos**, et al, “Deactivation and Decommissioning Technology Development Roadmap Report,” US Department of Energy’s Network of National Laboratories for Environmental Management and Stewardship, Savannah River National Laboratory, Aiken S. Carolina, May 2025.
3. **L. Lagos**, American Nuclear Society Webinar Series Robotics and Remote Systems Division (RRSD), “Development of Robotic Technologies for Nuclear Decommissioning,” April 29, 2025.
4. **L. Lagos**, OECD NEA Workshop on the Role of Innovation in the Nuclear Back-End, “*Harnessing Robotics and Advanced Technologies for Safer, More Efficient Activities*,” Workington, UK, April 1-3, 2025 [Presenter]

5. **L. Lagos**, International Panel on Robotics for Nuclear Decommissioning, American Nuclear Society Winter Meeting, Orlando, Florida November 17-20, 2024 [Session Chair and Presenter]
6. **L. Lagos**, “Robotics and AI Technologies for Decommissioning of Nuclear Sites,” CPR on Innovative Digital Technologies for Efficient Decommissioning of Nuclear Facilities (DEDICATE), International Atomic Energy Agency (IAEA) Webinar, Vienna, Austria, September 25, 2024 [virtual participation/presentation]
7. **L. Lagos**, et al “DOE-FIU Cooperative Agreement Year End Program Review,” US Department of Energy’s Office of Environmental Management, Washington, DC, September 17-19, 2024 [virtual presentation]
8. **L. Lagos**, “Advanced Technologies for Characterization, Decommissioning and Remediation of Contaminated Sites,” Workshop #5: AI Regulatory Framework – Nuclear Regulatory Commission (NRC), Rockville, MD, September 17, 2024 [virtual participation/presentation]
9. **L. Lagos**, “*Technology Development and Deployment Roadmap*,” 2024 EM Minority Serving Institutions Partnership Program (MSIPP) Achievement Workshop, August 6-7, 2024, Augusta, Georgia [presentation]
10. **L. Lagos**, “*Current Status of Decommissioning in USA*,” Summer School on Decommissioning Innovations, 22-26, July 2024, Ulsan, Republic of Korea [virtual participation/presentation]
11. **L. Lagos**, “*DOE EM Technology Development Tools for Tank Farm*,” Tank Waste Treatment Technology Exchange Workshop, July 9-10, 2024, PNNL Battelle, Richland, WA. [presentation]
12. **L. Lagos**, “*Robotic in Hazardous Environments Panel*,” American Nuclear Society Annual Meeting, June 16-20, 2024, Las Vegas, Nevada [presentation]
13. **L. Lagos**, “*Robotic and Sensor Technologies for Nuclear Decommissioning of Department of Energy Sites*,” International Conference on Decommissioning Challenges: Role and Importance of Innovations, French Nuclear Society, May 27-29, 2024, Avignon, France [presentation]
14. **L. Lagos**, “*Robotics, Digitalization in Decommissioning, and AI*,” Federal Remediation Technologies Roundtable (FRTR) Spring 2024 General Meeting, May 21, 2024, Washington, DC [virtual presentation]
15. **L. Lagos**, “*Robotics in Construction*,” 3rd Annual Construction Technology & Innovation Conference, [robotic technology demonstration & presentation], Associated Builders & Contractors Central Florida, May 07, 2024, Orlando, Florida.
16. **L. Lagos**, “*Applied Robotics Laboratory – Florida International University*,” Technical Conference (robotic technology presentation/demonstration), Associated Builders & Contractors Florida East-Coast, Margaritaville Hotel, February 22, 2024, Hollywood, Florida.
17. **L. Lagos**, H. Upadhyay, W. Zhao, S. Joshi, “*Final Technical Report – Secure Data Logging Processing with Blockchain and Machine Learning*,” Department of Energy (Contract # FE0031745), 04/30/2023, <https://www.osti.gov/biblio/1999758>
18. **L. Lagos et al**, “*Year End Report – Department of Energy – Florida International University Cooperative Agreement (Cooperative Agreement No. DE-EM0005213)*,” Projects 1-5, 12/08/2023 <https://doeresearch.fiu.edu/SitePages/2023.aspx>
19. **L. Lagos**, “*AI in Construction Industry*,” Industry Advisory Council, Moss Department of Construction Management, September 21, 2023, Miami, Florida.
20. **L. Lagos**, “*University Perspectives on US DOE Environmental Remediation Mission*,” DOE Congressional Caucus Meeting, Rayburn House Office Building, Washington, DC, May 23, 2024 [Panel participation and technology showcase]
21. **L. Lagos**, “*Robotics in Construction*,” Associated Builders & Contractors Florida East Coast, Technology Conference (robotic technology demonstration & presentation), February 9, 2023, Miami, Florida.
22. **L. Lagos et al**, “*Year End Report – Department of Energy – Florida International University Cooperative Agreement (Cooperative Agreement No. DE-EM0005213)*,” Projects 1-5, 12/22/2022 <https://doeresearch.fiu.edu/SitePages/2022.aspx>

23. **N. Espinal**, P. Folk, R. Gudavalli, L. Lagos, “*Development of automated material handling system with alternate gripper designs for the purpose of increased performance & worker safety*,” Savannah River National Lab, Aiken, SC.
24. **B. Cintas**, D. Lamber, R. Gudavalli, L. Lagos, “*Modeling of Chemical Slurry Rheology in DWPF Sludge Batch (SB) 10 Simulants*,” DOE Fellows Summer Internship Report, 2022.
25. L. Lagos, **M. Echeverria**, “1st International Meeting in Environmental and Material Engineering for Advanced Management in Nuclear Plants, presentation, University of Vigo, Vigo, Spain, September 2022.
26. **L. Lagos**, K. Cooper, J. Ault, International Meeting on Nuclear Education and Training, presentation, Nuclear Energy Agency, Paris, France, September 2022.

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27. Xerri, C., R. Weston, Michal V., R. Alamsyah, A. Gonzalez Espartero, A. Guskov, **L. Lagos**, V. Ljubenov, J. Ma, R. Robbins, Y. Masahiro, IAEA INTERNATIONAL PEER REVIEW OF MID AND-LONG-TERM ROADMAP TOWARDS THE DECOMMISSIONING OF TEPCO'S FUKUSHIMA DAIICHI NUCLEAR POWER STATION, Vienna, Austria and Tokyo/Fukushima Prefecture, Japan, June - August 2021.
28. **L. Lagos et al**, “Year End Report – Department of Energy – Florida International University Cooperative Agreement (Cooperative Agreement No. DE-EM0005213),” Projects 1-5, 12/03/2021 <https://doeresearch.fiu.edu/SitePages/2021.aspx>
29. Sinicrope, J., Komninakis, **M., Gabaldon, D., Moore, P.**, Lagos, L., Nicholson, J.C., Wohlwend, J.L., “Certifying Fixatives - Impact Technical Progress Report,” (FIU-ARC-2020-800013919-04c 006), September 2021.
30. **Lagos, L.** DigiDecom 2021, Online International Workshop Focusing Digital Transformation, Robotics and other Game Changing Trends in Nuclear Decommissioning, Institute of Energy Technology, Halden, Norway, April 2021.
31. D. McDaniel, G. Soon, L. Lagos, “Use of Robotics in Nuclear Applications”, DOE/FIU Tech Talks, April 20, 2021.
32. **L. Lagos et al**, “Year End Report – Department of Energy – Florida International University Cooperative Agreement (Cooperative Agreement No. DE-EM0005213),” Projects 1-5, 12/06/2020 <https://doeresearch.fiu.edu/SitePages/2020.aspx>
33. **Lagos, L.**, DigiDecom – ELINDER 2020, Innovative Online Course on Nuclear Decommissioning, Institute of Energy Technology, Halder, Norway, December 2020.
34. Technical Meeting on Advancing Collaboration on Competence Building and Knowledge Management for Decommissioning, International Atomic Energy Agency (IAEA), Vienna, Austria, December, 2020.
35. **Lagos, L.** 2020 International/Regional Workshop on Nuclear Decommissioning Using 4th Revolutionary Industrial Technologies, Seoul, South Korea, December 2020.
36. Lagos, L., R. Gudavalli, **R. Boza**, R. Berry, M. Bell, J. Aylor, A. Baranovsky, Panel Session 37: The Wants and Needs of Graduating Students and New Engineers: Are Companies Even Listening? (R8. 1), Waste Management Symposia, 2020, Phoenix, AZ.
37. **L. Lagos et al**, “Year End Report – Department of Energy – Florida International University Cooperative Agreement (Cooperative Agreement No. DE-EM0005213),” Projects 1-5, 01/17/2020 <https://doeresearch.fiu.edu/SitePages/2019.aspx>
38. L. Lagos and D. McDaniel, “Robotics R&D for legacy nuclear waste”, ANS Nuclear News, Volume 62, Number 13, December 2019.
39. **L. Lagos et al.**, An Overview of the Development of Remote and Robotic Systems in the Nuclear Back-End, International Workshop, Marcoule, France, January 2019.
40. D. McDaniel, L. Lagos “Robotics Technologies for Tanks, D&D and other Applications”, Interregional Workshop on Optimization of Technology Selection for Decommissioning of Large and Small Nuclear Installations, IAEA, September 12, 2019.
41. D. McDaniel, L. Lagos, “Inspection Tools for Hanford Tanks and Waste Transport Systems Tank Closure Forum, DOE-EM, September 10, 2019.

42. D. McDaniel, L. Lagos, Hanford and Savannah River Coordination Meeting, Hanford, WA, March 18, 2019.
43. **L. Lagos et al**, “Year End Report – Department of Energy – Florida International University Cooperative Agreement (Cooperative Agreement No. DE-EM0005213),” Projects 1-4, 12/07/2018 <https://doeresearch.fiu.edu/SitePages/2018.aspx>
44. D. McDaniel, **A. Abrahao, Y. Tan**, L. Lagos “Robotic Inspection Tool Development for Double Shell Tanks at Hanford”, RCNET Workshop & Professional Development, Indian River State College, July 13-14, 2017.
45. D. McDaniel, L. Lagos, “High-Level Waste Research Efforts at FIU in Support of DOE-EM and WRPS”, WRPS Technology Coordination Meeting, Richland, WA, May 16-17, 2017.
46. **L. Lagos et al**, “Year End Report – Department of Energy – Florida International University Cooperative Agreement (Cooperative Agreement No. DE-EM0005213),” Projects 1-4, 11/03/2017 <https://doeresearch.fiu.edu/SitePages/2017.aspx>
47. D. McDaniel, L. Lagos, “High-Level Waste Research Efforts at FIU in Support of DOE-EM and WRPS”, WRPS Technology Coordination Meeting, Richland, WA, June 14-15, 2016.
48. D. McDaniel and L. Lagos, “Development of Inspection Tools for the AY-102 Double-Shell Tank at the Hanford DOE Site”, Tank Closure Forum, DOE-EM HQ, March 16, 2016.
49. **L. Lagos et al**, “Year End Report – Department of Energy – Florida International University Cooperative Agreement (Cooperative Agreement No. DE-EM0005213),” Projects 1-4, 11/03/2016 <https://doeresearch.fiu.edu/SitePages/2016.aspx>
50. D. McDaniel, L. Lagos, H. Fekrmandi, **A. Abrahao, R. Sheffield**, and E. Gokce,” Robotic Technology Research at Florida International University for the Department of Energy - Environmental Management”, International Workshop on the Use of Robotic Technologies at Nuclear Facilities, February 2-4, 2016, Gaithersburg, MD.
51. **L. Lagos et al**, “Year End Report – Department of Energy – Florida International University Cooperative Agreement (Cooperative Agreement No. DE-EM0005213),” Projects 1-4, 08/28/2015 <https://doeresearch.fiu.edu/SitePages/2015.aspx>
52. **T. Pribanic**, D. McDaniel, and L. Lagos, “A Remote Pipeline Crawler for Unplugging and Inspection Operations”, 2nd Annual D&D Supply Chain Conference, November 2012.

WORKS IN PROGRESS

1. B. Cintas, L. Lagos, , “Mobile Low-dwell Time Robotic Radiation Mapping using Auto-regressive Multi-fidelity Gaussian Processes (ARGP) in Saturated Radiological Environments,” Discover Robotics, December 2025 [submitted]
2. **A. Duani Rojas, F. Rivera Noriega**, H. Upadhyay, J. Soni, L. Lagos, N. Prabakar, H. Gonzalez-Raymat, “XAI of Black-Box Models Through Inherently Explainable Decision Trees,” IEEE [in preparation]
3. **Soni J.**, Upadhyay H., Lagos L., Siddiquee M., Song X. (2024), “*A Machine Learning Approach for Groundwater Contamination Spatiotemporal Relationship Exploration*,” the 23rd IEEE International Conference on Machine Learning and Applications (IEEE ICMLA 2024) [Submission Date: August 24, 2024]
4. **Soni J.**, Upadhyay H., Wainwright H., Xu Z., Lagos L, “*Advanced Deep Learning Models for Groundwater Contaminant Dynamics at the Savannah River Site*,” the 2024 IEEE International Conference on Future Machine Learning and Data Science (IEEE FMLDS 2024) [Submission Date: August 24, 2024]

Google Scholar Page link:

A complete list of published material can be found at:

https://scholar.google.com/citations?hl=en&user=BWxG5LMAAAAJ&view_op=list_works&sortby=pubdate

FUNDED RESEARCH [2020-Present]

(Bold indicates PI of a sponsored research program/project)

Leonel Lagos (PI)

Florida International University's Continued Research Support for the Department of Energy's Office of Environmental Management

Department of Energy's Office of Environmental Management (No. DE-EM0005213)

9/29/2020 -9/28/2025 (5 years) (no cost extension until 01/30/26)

\$ 23,686,882.00

Leonel Lagos (PI)

Development and Field Deployment of a Robotic Remote System with Plug-and-play Interchangeable Tooling for Dry Retrieval Operations at Hanford's Single Shell Tanks
Battelle Savannah River Alliance

03/20/2025 – 03/20/2026 (1 year)

\$350,000.00

Leonel Lagos (PI)

Real-time Mercury Characterization for DOE Legacy Facilities Decommissioning Using Mobile Robotic Platforms

Battelle Savannah River Alliance

05/03/2024 – 11/02/2025 (no cost extension granted until 04/30/2026)

\$310,000.00

Leonel Lagos (PI)

Digitally Optimized Autonomous Robot System for Hanford Waste Tank Handling
Department of Energy

07/29/2024 – 05/31/2027 (3 years)

\$900,000.00 (awarded on 07/2024) – \$390K received as of 11/25

Leonel Lagos (PI)

TITLE III HSI STEM GRANT (ACCESS PROJECT) - Cyber Security Education and Training
Broward State College/US Department of Education

10/01/2021 – 09/30/2026 (5 years)

\$ 340,537.00

Leonel Lagos (PI)

Robotic Exoskeletons and EMG Sensing for Glovebox Operations
Sandia National Laboratory

07/2021 – 09/30/2025 (no cost extension granted until 08/31/2026)

\$650,000.00

Research Funding as Co-PI

Leonel Lagos (Co-PI)

Design and Development of Ground Penetrating Radar (GPR) Mobile Platforms for Geomechanical Inspections at The Waste Isolation Pilot Plant (WIPP)

Battelle Savannah River Alliance

05/03/2025 – 05/02/2026

\$310,000.00

Leonel Lagos (Co-PI)

Reactor Sharing Program

University of Florida (grant from DOE Office of Nuclear Energy)

10/2024 – 09/2026 (2 years - experimental educational opportunities for FIU students)

\$0.00

Leonel Lagos (Co-PI)

Consortium for Research and Education in Cyber Manufacturing Applications for Modular Nuclear Reactors (CMA-MNuR)
National Nuclear Security Administration (NNSA)
10/2022 – 09/2027 (5 years)
\$5,000,000.00

Leonel Lagos (Co-PI)
AI/ML development for TCAP to support Savannah River Site
Battelle Savannah River Alliance, LLC
12/2022 – 11/2024 (1 year)

\$150,000.00

Leonel Lagos (Co-PI)
Artificial Intelligence (AI) Center of Excellence - DOT&E
Edaptive Computing Inc./Department of Defense
06/2023 – 08/2024 (1 year)

\$1,000,000.00

Leonel Lagos (Co-PI)
Automation Tool for Hardware Virtualization & Validation (AHVV)
GTRI (Main Sponsor Test Resource Management Center/Dept. of Defense)
08/2023 – 08/2025 (2 years)

\$1,000,000.00

Leonel Lagos (Co-PI)
AI/ML Model Development to support Electrical Resistance Tomography (ERT) Data Analysis
Battelle Savannah River Alliance, LLC
05/03/2024 – 05/02/2025 (1 year)

\$350,000.00

Leonel Lagos (Co-PI)
Sensor technologies for Degradation Assessment in Buried Pipe-in-Pipe Waste Transfer Lines
Battelle Savannah River Alliance, LLC
05/03/2024 – 05/02/2025 (1 year)

\$350,000.00

Leonel Lagos (Co-PI)
Heterogeneous Robotics Systems for Mission Support
DoD Army Research Office (ARO)
08/2022 – 07/2023 (Equipment)

\$483,000.00

PROPOSALS SUBMITTED BUT NOT FUNDED

Leonel Lagos (PI)
Consortium for the Detection, Discovery, and Data (D3)
University of Notre Dame
03/01/25 – 03/01/30
\$1,000,000.00

Leonel Lagos (Co-PI)
MARC: Mechanics, AI, Robotics, and Computations for Workforce Advances in Nuclear Security
DOE NNSA
01/01/25 – 12/31/29
\$ 2,040,797

Leonel Lagos (PI)

Accelerate Hanford Tank Waste Treatment and Disposal
Battelle Savannah River Alliance, LLC
01/01/24 – 12/31/26
\$350,000.00

Leonel Lagos (PI)

Non-destructive Storage Tank Integrity Monitoring and Prediction: Autonomous Robot-Radar
Technology Approach
Los Alamos National Laboratory
01/01/24 – 12/31/26
\$900,000.00

Leonel Lagos (PI)

Heavy Contact Robotic Repair Platform for Tank Farm Maintenance
Argonne National Laboratory
01/01/24 – 12/31/26
\$1,700,200.00

Leonel Lagos (PI)

Development of a Robotic Remote System with Plug-and-play Interchangeable Components for
Inspection and Repairs of DOE Facilities and Repositories
Battelle Savannah River Alliance, LLC
10/2022 – 09/2023
\$320,000.00

Leonel Lagos (PI)

Heterogeneous Robotics Systems for Mission Support
Department of Defense
07/2023 – 06/2027
\$800,000.00

Leonel Lagos (PI)

Autonomy Center of Excellence for Research & STEM Development
US Air Force Research Laboratory
01/2015 – 12/2020
\$4,000,000.00

Leonel Lagos (PI)

FIU Nuclear Fellowships & Workforce Development Program (FIU-NFWDP)
Nuclear Regulatory Commission
05/2013 – 04/2017
\$5,000,000.00

Leonel Lagos (PI)

Development of a 21st Century Workforce for the Nuclear Industry
Nuclear Regulatory Commission
01/2013 – 05/2015
\$400,000.00

COMPLETED FUNDED RESEARCH (2008-2024)

(Bold indicates projects as PI)

Award number	Award Title	Award Begin Date	Award End Date	PI Name	Sponsor	Total Amount Funded (\$)
AWD000000 000036	Morena Resort Project.	08/21/2008	4/30/2009	Lagos	Randolph International Inc.	14,367

AWD000000 000398	SAIC Interns	05/04/2009	1/31/2014	Lagos	Science Applications International Corp.	526,108
AWD000000 001138	Florida International University's Research Support to the Department of Energy's Office of Environmental Management	05/07/2010	8/28/2020	Lagos	Dept. of Energy Office of Environmental Management	42,674,397
AWD000000 001673	Integrated Hydrological and water quality model using MIKE SHE and MIKE 11 Software	08/26/2011	8/26/2012	Lagos	National Park Service	205,000
AWD000000 001754	Development of a Meso-Scale Sensor Test bed for In-situ Decommissioning of Nuclear Facilities	09/12/2011	12/31/2011	Lagos	Savannah River Nuclear Solutions LLC	77,664
AWD000000 002103	Florida International University proposes the following services pertaining to the development of a program for Windamir Development & Construction.	10/15/2012	01/15/2013	Lagos	Jacobs Engineering Group	22,033
AWD000000 003423	Development of a Meso Scale Sensor Test bed for In-situ Decommissioning of Nuclear Facilities	06/27/2013	12/31/2013	Lagos	Savannah River Nuclear Solutions LLC	31,369
AWD000000 003627	Marketing, Communications, Knowledge Management, and Outreach Background Consulting	06/28/2013	06/27/2014	Triay Lagos (co-PI)	Waste Control Specialists LLC	45,052
AWD000000	Cyber Space	12/03/2013	12/02/2014	Lagos	Scientific	289,806

003759	Research and Development for Department of Defense's TRMC - Phases I and II				Research Corporation	
AWD000000005780	Cyber Space Technology Research and STEM Development for Department of Defense - Test Resource Management Center (TRMC) Phase III	05/01/2015	06/03/2016	Lagos	General Infomatics	200,000
AWD000000005984	Cyber Attack Orchestration Test Bed for Automation and Threat Monitoring in Virtual Environment	06/16/2016	08/31/2020	Lagos	U.S. Army	4,128,254
AWD000000012063	Cyber Attack Orchestration Test Bed for Automation and Threat Monitoring in Virtual Environment	10/30/2020	02/08/2023	Lagos	U.S. Department of Defense	2,200,000
AWD000000005994	FIU Support to RCNET's Renewal Proposal for a National Advanced Technical Education Center	10/01/2016	09/30/2022	Lagos	Indian River State College	200,000
AWD000000006318	Robust and Remote Radiation Hardened Robotic System for Tunnel Inspection	10/01/2016	09/30/2020	Lagos	University of Texas at Austin	175,000
AWD000000007934	Evaluation of a Dexterous Robotic Manipulator for Semi-Autonomous Glove box Tasks to	09/24/2017	01/31/2019	Lagos	Savannah River Nuclear Solutions LLC	400,000

	Reduce Human Fatigue and Injuries					
AWD000000009148	Dexterous Robotic Manipulator and Adaptation of Exoskeleton Devices for Assisted Glovebox Operations to Reduce Human Fatigue and Injuries	01/31/2019	10/31/2020	Lagos	Savannah River Nuclear Solutions LLC	275,000
AWD000000010014	Secure Data Logging and Processing with Blockchain and Machine Learning	09/01/2019	04/30/2023	Lagos	US Department of Energy	400,000
AWD000000013291	Research and Development support to Savannah River National Laboratory during their Network of National Lab Study on the potential acceleration of treatment of radioactive waste stored at DOE's Hanford site.	11/03/21	11/02/23	Lagos	Savannah River Nuclear Solutions LLC	38,830
AWD000000009947	WMS 2019 University Pavilion FIU Support	01/14/2019	03/30/2019	Lagos	WM Symposia	11,000
AWD000000011145	CUI Industry Challenge	02/01/2020	05/01/2020	McDaniel Lagos (co-PI)	Quasset	48,611
AWD000000013388	Heterogeneous Robotics Systems for Mission Support	08/01/2022	07/31/2023	McDaniel Lagos (co-PI)	U.S. Department of Defense	483,000
AWD000000014828	Development of Robotic Remote Systems with Plug-and-Play	02/03/2023	05/02/2024	Lagos	Battelle Savannah River Alliance	240,000

	Interchangeable Components for Inspection and Repairs of DOE Facilities and Repositories					
AWD000000 014828	Integration of Sensors and Robotic Platforms for Waste Isolation Pilot Plant (WIPP) Applications	05/03/2021	07/31/25	Lagos	Battelle Savannah River Alliance	800,000

STEM WORKFORCE DEVELOPMENT: STUDENT MENTORING AND TRAINING

Thesis/Dissertation Committees as Major Professor/Co-Major Professor or Committee member

Dr. Lagos supervises many master's and PhDs level students. Dr. Lagos directly supports and advice the students on their master's thesis and PhD dissertations. The students are fully supported as Graduate Research Assistants (RA) supporting the various sponsored research projects where Dr. Lagos is the main principal investigator (PI). The table below details Dr. Lagos participation in master's and PhD committees (2009-2024) as a major/co-major or committee member.

Name of Student	Level	Major Professor/Committee Member	Degree	Status	Year
Doctoral Students					
Jyothsna Saripalli*	Ph.D.	Major Professor	MME	Current	2025 - Present
Azizul Islam Arko*	Ph.D.	Major Professor	Civil Eng.	Current	2025 - Present
Hari Hara Saripalli*	Ph.D.	Major Professor	MME	Current	2025 - Present
Hamed Dashtey	Ph.D.	Co-Major Professor	Civil Eng.	Current	2025 - Present
Mackenson Telusma*	Ph.D.	Co-Major Professor	MME	Current	2020 – Present
Joel Adams*	Ph.D.	Major Professor	MME	Graduated Fall 2025	2020 – 2025
Brendon Cintas*	Ph.D.	Major Professor	MME	Current	2022 – Present
Gabriel Cerioni*	Ph.D.	Major Professor	MME	Current	2022 – Present
Manuel Escobar*	Ph.D.	Major Professor	MME	Current	2020 – Present
Anthony Abrahao*	Ph.D.	Co-Major Professor	MME	Defended Fall 2024	2004 – Present
Juan Morales*	Ph.D.	Committee Member	Occupational Health	Graduated	2019 – 2024
Maria Sotolongo*	Ph.D.	Committee member	MME	Graduated Fall 2025	2021 – 2025
Frank Silva	Ph.D.	Committee member	ECE	Current	2022 - Present
Mellissa Komninakis*	Ph.D.	Committee Member	MME	Graduated Fall 2025	2020 – 2025
Anzaman Hossen	Ph.D.	Committee Member	MME	Current	2024 – Present
Johnson Imumbhon	Ph.D.	Committee Member	MME	Graduated	2020 - 2022
Ann Blanchard	Ph.D.	Committee Member	MME	Withdrawn	2020 –
Muhammad Faheem Afzal	Ph.D.	Committee Member	Civil Eng.	Graduated	2021 – 2024

Ali Javed	Ph.D.	Committee Member	Civil Eng.	Graduated	2021 – 2023
Anirban Saha	Ph.D.	Committee Member	MME	Current	2021– Present
Amer Awwad*	Ph.D.	Committee Member	Civil Eng.	Graduated	2020 – 2023
Master's Students					
Juan Hernandez	M.S.	Major Professor	MME	Current	2025-Present
Carolina Arenas*	M.S.	Co-Major Professor	CEE	Current	2025 - Present
Ellie Risher*	M.S.	Co-Major Professor	CEE	Current	2025 - Present
Sebastian Vargas*	M.S.	Major Professor	MME	Current	2025 - Present
Benjamin Vargas*	M.S.	Major Professor	MME	Current	2025 - Present
Carlos Quintanilla*	M.S.	Major Professor	EE	Current	2024 - Present
Santiago Cuartas*	M.S.	Major Professor	MME	Graduated: non-thesis option	2024 - 2025
David Rojas	M.S.	Major Professor	MME	Withdrawn	2024 - Present
Theophile Pierre*	M.S.	Major Professor	MME	Graduated	2024 - 2025
Victor Gonzalez	M.S.	Major Professor	MME	Current	2024 - Present
Carlos Rios*	M.S.	Major Professor	MME	Current	2023 - Present
Pedro Chaviano*	M.S.	Major Professor	EE	Withdrawn	2024 -
Bryant Pineda*	M.S.	Major Professor	MME	Graduated	2023 - 2025
Bryan Torres*	M.S.	Major Professor	MME	Withdrawn	2023 -
Olivia Bustillo*	M.S.	Major Professor	Env. Eng.	Graduated	2022 – 2023
Josue Estrada*	M.S.	Major Professor	MME	Graduated	2022 – 2023
Sebastian Story*	M.S.	Major Professor	MME	Graduated	2022 – 2023
Philip Moore*	M.S.	Major Professor	MME	Graduated	2022 – 2024
Hiba Khalil*	M.S.	Major Professor	MME	Graduated	2023 – 2024
Shawn Cameron*	M.S.	Major Professor	MME	Graduated: non-thesis option	2022 – 2024
Gisselle Gutierrez*	M.S.	Committee Member	Env. Eng.	Graduated	2020 – 2022
Jeff Natividad*	M.S.	Committee Member	MME	Graduated: non-thesis option	2020 – 2021
Jason Soto	M.S.	Co-Major Professor	MME	Graduated	2018-2020
Tristan Simoes-Ponce*	M.S.	Committee Member	MME	Graduated	2018 – 2020
Michael Thompson*	M.S.	Committee Member	Electrical Eng.	Graduated	2018 – 2020
Edgard Espinosa*	M.S.	Committee Member	MME	Graduated	2009 – 2011
Steven Wood*	M.S.	Committee Member	MME	Graduated	2009 – 2011
Harini Kondamudi*	M.S.	Committee Member	Comp. Sci.	Graduated	2008 – 2010
Gowthami Thota*	M.S.	Committee Member	Comp. Sci.	Graduated	2008 – 2011
Maximiliano Edrei*	M.S.	Committee Member	MME	Graduated	2015 – 2017
Melina Idarraga*	M.S.	Committee Member	Env. Eng.	Graduated	2009 – 2011

*Indicates that the student is being (or has been) fully funded (stipend + tuition) from sponsored research projects where Dr. Lagos is the main Principal Investigator (PI)

Direct Support/Funding to Post-Doctoral Associates and Visiting Scholars:

2024 – 2024, Nakown Sung (Visiting Scholar), Seoul National University, South Korea sponsored by Korea Nuclear International Cooperation Foundation (KONICOF), Funding Source: KONICOF

2024 - Present, Dr. Ganesh Govindarajan (Post - Doctoral Associate), Applied Research Center, Funding Source: DOE EM MSIPP (PI: Lagos)

2020 – Present, Dr. Jayesh Soni (Post-Doctoral Associate), Applied Research Center, Funding Source: DOE EM Cooperative Agreement (PI: Lagos)

2023 – 2024, Dr. Rodrigo Ramon (Post – Doctoral Associate), Applied Research Center, Funding Source: Sandia National Laboratory (PI: Lagos)

2020 – 2021 Dr. Shervin Tashakori (Post-Doctoral Associate), Applied Research Center, Funding Source: DOE EM Cooperative Agreement (PI: Lagos)

2019 – 2022 Dr. Mayren Echeverria (Post-Doctoral Associate), Applied Research Center, Funding Source: DOE EM Cooperative Agreement (PI: Lagos)

2019 – 2020 Dr. Reza Abbasi Baharanchi, (Post-Doctoral Associate), Applied Research Center, Funding Source: DOE EM Cooperative Agreement (PI: Lagos)

2018- 2020, Dr. Hardik Gohel, (Post-Doctoral Associate), Research Center, Funding Source: DOE EM Cooperative Agreement (PI: Lagos)

Courses Taught at Florida International University

Student Perceptions of Teaching Survey (SPOT): Averages per category are based on a 5-point scale. Excellent = 5; Very Good = 4; Good = 3; Fair = 2; Poor = 1

Course Number	Course Title	Semester	SPOT Evaluation
BCN5336	Robotics in Construction	Spring 2026	Current Semester
EGM3503	Applied Mechanics**	Spring 2026	Current Semester
BCN6916	Development in Construction Techs	Fall 2025	4.72
EGM3503	Applied Mechanics**	Fall 2025	3.52
BCN6912	Project Construction Engineering Mgmt.	Spring 2025***	4.86***
EGM3503	Applied Mechanics**	Spring 2025	3.54
BCN6916	Development in Construction Tech	Fall 2024	4.50
EGM3503	Applied Mechanics**	Fall 2024	2.80
BCN6912	Project Construction Engineering Mgmt.	Spring 2024	n/a
EGM3503	Applied Mechanics**	Spring 2024	3.58
BCN6916	Development in Construction Tech	Fall 2023	4.20
EGM3503	Applied Mechanics**	Fall 2023	3.41
EGM3503	Applied Mechanics**	Spring 2023	3.86
BCN6916	Development in Construction Tech	Fall 2022	4.61
EGM3503	Applied Mechanics**	Fall 2022	3.34
EGM3503	Applied Mechanics**	Spring 2022	3.80
EGM3503	Applied Mechanics**	Fall 2021	3.44
EGM3503 (U01)	Applied Mechanics**	Spring 2021	4.13
EGM3503 (U02)	Applied Mechanics**	Spring 2021	3.92
EGM3503	Applied Mechanics**	Fall 2020	3.81
EGM3503	Applied Mechanics**	Spring 2020	4.07
EGM3503	Applied Mechanics**	Fall 2019	4.33
EGM3503	Applied Mechanics**	Spring 2019	4.16
EGM3503	Applied Mechanics**	Fall 2018	4.47
EGM3503	Applied Mechanics**	Fall 2017	4.04
EGM3503	Applied Mechanics**	Fall 2016	n/a

**INDICATES COURSE TAUGHT AS ADJUNCT PROFESSOR

***SUPERVISED RESEARCH COURSES, DO NOT APPEAR ON CANVAS, SO AN ANONYMOUS SURVEY WAS COLLECTED FROM THE STUDENTS

Other courses taught including independent studies, supervised research, Master's thesis and Ph.D. dissertation credits:

Course Number	Course Title	Semester	Number of Students	SPOT Evaluation
CGN7980	Ph.D. Dissertation	Fall 2025	1	n/a
EML7979	Ph.D. Dissertation	Fall 2025	4	n/a
EML6971	Master's Thesis	Fall 2025	4	n/a

EML6908	Independent Studies	Fall 2025	1	n/a
CGN7980	PhD Dissertation	Summer 2025	1	n/a
EML7979	Ph.D. Dissertation	Summer 2025	4	n/a
EML6971	Master's Thesis	Summer 2025	2	n/a
EML6910	Supervised Research	Summer 2025	2	n/a
EML6908	Independent Studies	Summer 2025	2	n/a
EML7979	Ph.D. Dissertation	Spring 2025	3	n/a
EML6971	Master's Thesis	Spring 2025	1	n/a
EML6910	Supervised Research	Spring 2025	1	n/a
EML6908	Independent Studies	Spring 2025	1	n/a
EML6971	Master's Thesis	Fall 2024	2	n/a
EML7979	Ph.D. Dissertation	Fall 2024	2	n/a
EML6910	Supervised Research	Fall 2024	2	n/a
EML6908	Independent Studies	Fall 2024	3	n/a
EML6971	Master's Thesis	Summer 2024	2	n/a
EML7979	Ph.D. Dissertation	Summer 2024	2	n/a
EML6908	Independent Studies	Spring 2024	2	n/a
EML6910	Supervised Research	Spring 2024	3	n/a
EML6971	Master's Thesis	Spring 2024	3	n/a
EML7979 U10	Ph.D. Dissertation	Spring 2024	1	n/a
EML7979 U20	Ph.D. Dissertation	Spring 2024	1	n/a
EML6908	Independent Studies	Fall 2023	4	n/a
EML6910	Supervised Research	Fall 2023	3	n/a
EML6971	Master's Thesis	Fall 2023	3	n/a
EML7979	Ph.D. Dissertation	Fall 2023	1	n/a
ENV6971	Master's Thesis	Summer 2023	1	n/a
ENV6971	Master's Thesis	Spring 2023	1	n/a
ENV6971	Master's Thesis	Fall 2022	1	n/a

In 2022, Dr. Lagos contributed to the development of a Robotics Track within the Master of Science Mechanical Engineering under the Mechanical and Materials Engineering Department (MME). Dr. Lagos collaborated with colleagues in FIU's Mechanical and Materials Engineering and Electrical and Computer Engineering departments to prepare the necessary documentation for submission to the College of Engineering and Computing's curriculum committee. The new track was approved by FIU and successfully implemented in 2022. Since joining MDCM, Dr. Lagos has developed and proposed the following courses:

Course Title	Semester	Status
Robotics in Construction (graduate)	Fall 2023	Approved
Robotics in Construction (undergraduate)	Fall 2023	Approved
Masters in Nuclear Decommissioning and Environmental Remediation (MINDER) – 5 courses	Fall 2023	In review by academic department

Dr. Lagos has mentored over 300 students (DOE Fellows, MSIPP Fellows, student research assistants, and Post-Doctoral Fellows) working on sponsored research projects and/or participating in FIU Flagship STEM DOE Fellows program (<http://fellows.fiu.edu>). Dr. Lagos personally engages in the identification and selection of summer internships at Department of Energy facilities. Since 2008, he has facilitated over 224 summer internships for FIU minority STEM students at Department of Energy facilities across the US. Dr. Lagos is committed to the professional development of FIU STEM students and he facilitated over 350 students' presentations national and international conferences. Dr. Lagos has also encouraged and supported students in their transition to the workforce. As part of his workforce development program, **42** FIU DOE Fellow students has joined DOE EM, DOE national labs, DOE contractors, federal agencies, state, or local government and **87** FIU students have joined local and national companies since 2008. The following tables detailed the students that have secured employment right after graduating FIU. Dr. Lagos has also guided and mentored over 10 Post-Doctoral Fellows working under his research portfolio.

Direct Support (funding and research) to Ph.Ds. STEM Graduate Students

DOE Fellow	Discipline	Degree	Research Topic	Year of Graduation
Carolyn Grace Cooke	Chemistry	Ph.D.	Interaction of iodine species with Organoclays and Granulated Activated Carbon	2028 (anticipated)
Gabriel Cerioni	Mechanical Engineering	Ph.D.	Evaluation of Object encapsulation of Low-level waste utilizing 3D printed Concrete	2027 (anticipated)
Brendon Cintas	Mechanical Engineering	Ph.D.	Experimental analysis of flushing criteria for waste transport operations	2026 (anticipated)
Aris Duani Rojas	Computer Science	Ph.D.	TBD	2026 (anticipated)
Mariah Doughman	Chemistry	Ph.D.	Evaluation of Competing Attenuation Processes for Mobile Contaminants in Hanford Sediments	Fall 2024
Joel Adams	Mechanical Engineering	Ph.D.	Long Term Surveillance of Nuclear Facilities and Repositories	Fall 2025
Maria Sotolongo	Mechanical Engineering	Ph.D.	Detecting Surface Variations in Geometric Data Points Using Applied Mathematics to Enhance Confidence Levels in Environmental Analysis	Fall 2025
Phuong Pham	Chemistry	Ph.D.	Interaction of iodine species with Organoclays and Granulated Activated Carbon	2023
Juan Morales	Public Health	Ph.D.	Accumulated Metalloestrogens Analysis for Health Risk Assessment and Watershed Toxicology Management in Tims Branch, SRS	2024
Silvina Di Pietro	Chemistry	Ph.D.	Ammonia Gas Treatment for Uranium Immobilization at DOE Hanford's Site	2021
Roger Boza	Computer Science	Ph.D.	Analysis of Image Data using Machine Learning/Deep Learning and Big Data Technologies	Spring 2025
Sebastian Zanlongo	Computer Science	Ph.D.	Multipurpose All-Terrain Robotic Platform for D&D	2018
Hansell Gonzalez-Raymat	Chemistry	Ph.D.	Unrefined humic substances as a potential low-cost remediation method for groundwater contaminated with uranium in acidic conditions	2018
Claudia Cardona	Environmental Engineering	Ph.D.	Remediation of the uranium-contaminated subsurface in the deep vadose zone via NH ₃ gas injection	2017
Charles Castello	Electrical Engineering	Ph.D.	Soil/Groundwater - Sensor Development for Field Measurement of Mercury	2011

Direct Support (Funding and Research) to Master's STEM Graduate Students

DOE Fellow	Discipline	Degree	Research Topic	Year of Graduation
Carolina Arenas	Env. Engineering	Masters	TBD	Fall 2026

DOE Fellow	Discipline	Degree	Research Topic	Year of Graduation
Ellie Risher	Env. Engineering	Masters	TBD	Fall 2026
Carlos Quintanilla	Electrical Engineering	Masters	VR and AR Used in the Inspection of WIPP Facility	Fall 2026
Rayhan Alcena	Comp. Science	Masters	TBD	Withdrawn
Santiago Cuartas	Mechanical Engineering	Masters	Waste Segregation Using Robotic System and AI	Fall 2025 Non-Thesis option
David Rojas	Mechanical Engineering	Masters	Development of a Sonar technology for Hanford's Tank Inspections	Withdrawn
Sebastian Vargas	Mechanical Engineering	Masters	Development of a Backpack System for Inspection of WIPP Site	Fall 2026
Benjamin Vargas	Mechanical Engineering	Masters	LiDAR and 3D Mapping of WIPP Facility	Fall 2026
Fabiola Rivera Noriega	Computer Science	Masters	TBD	Withdrawn
Theophile Pierre	Mechanical Engineering	Masters	Development of an Off-Riser Sampler for Hanford's Tanks	Fall 2025
Victor Gonzalez-Gomez	Mechanical Engineering	Masters	Functionalizing Foam Polymer Fixatives to Enhance Gamma Radiation Shielding in Support of Nuclear Deactivation and Decommissioning Activities	Fall 2025
Carlos Rios	Mechanical Engineering	Masters	Digitalization in Decommissioning of Nuclear Facilities	Spring 2026
Bryant Pineda	Mechanical Engineering	Masters	Knowledge and practices of monitoring the structural integrity of Nuclear Waste Transfer systems	Summer 2025
Brian Torres	Mechanical Engineering	Master	Pipeline Flushing Studies for Two-Phase High Level Waste at DOE Sites	Withdrawn
Pedro Chaviano	Electrical Engineering	Masters	Development of a Robotic Vacuum System for Hanford's HLW Tanks	Withdrawn
Aubrey Litzinger	Environmental Engineering	Masters	Model Development (for Basin 6 of the Nash Draw near the WIPP)	Fall 2024
Philp Moore	Mechanical Engineering	Masters	Development of an Off-Riser Sampler for Hanford's Waste Tanks	Fall 2024
Alejandro De La Noval	Electrical Engineering	Masters	Spatial-Temporal Analysis of Groundwater Well Features from Neural Network Prediction of Hexavalent Chromium Concentration	Summer 2024
Shawn Cameron	Mechanical Engineering	Masters	Development of a Mobile Robotic Platform with Integrated Ground Penetrating Radar for Subsurface Mapping	Spring 2023
Sebastian Story	Mechanical Engineering	Masters	Development of Inspection Tools for Primary Tanks	2023
Josue Estrada	Mechanical Engineering	Masters	Development of Inspection Tools for DST Tanks	2023
Olivia Bustillo	Environmental Engineering	Masters	Use of Apatite for Uranium Sequestration at Old Rifle Site	2023
Raymond Piloto	Electrical Engineering	Masters	Pipeline corrosion and erosion evaluation	2022

DOE Fellow	Discipline	Degree	Research Topic	Year of Graduation
Ryan Ocampo	Civil Engineering	Masters	Evaluation of Coatings for the H-Canyon Exhaust Tunnel at the Savannah River	2022
Gisselle Guterrez	Environmental Engineering	Masters	Digital Elevation Model and Hydrologic Network	2022
Michael Thompson	Electrical Engineering	Masters	Structural health monitoring of pipelines in radioactive environments through acoustic sensing and machine learning	2020
Edward Nina	Mechanical Engineering	Masters	Non-Thesis Option	2020
Jeff Natividad	Mechanical Engineering	Masters	Non-Thesis Option	2021
Alexis Vento	Environmental Engineering	Masters	Fate of Actinides in the Presence of Ligands in High Ionic Strength Systems	2021
Tristan Simoes-Ponce	Mechanical Engineering	Masters	D&D Technology Demonstration & Development and Technical Support to SRS's 235-F Facility Decommissioning	2020
Ron Hariprashad	GeoScience (Hydrogeology)	Masters	Modeling of Surface Water Flow and Contaminant Transport in the Tims Branch Ecosystem	2020
Jason Soto	Mechanical Engineering	Masters	Design of Robotic Inspection Platform for Structural Health Monitoring	2020
Amanda Yankcoskie	Environmental Engineering	Masters	Non-Thesis Option	2020
Ryan Cruz	Cyber Security	Masters	Non-Thesis Option	2019
Joshua Nunez	Mechanical Engineering	Masters	The applications of intumescent technologies in support of D&D activities across the DOE complex	2019
Joseph Coverston	Mechanical Engineering	Masters	Evaluation of Pipeline Flushing Requirements for HLW at Hanford and Savannah River	2019
Mohammed Albassam	Environmental Engineering	Masters	Effect of Frequent Atmospheric Events on Flow Characterization in Tims Branch and its Major Outfalls	2018
Alejandro Garcia	GeoScience	Masters	The influence of biofilm formation on the SIP response of Hanford vadose zone sediment	2018
Robert Lapierre	Chemistry	Masters	Mineral characterization after uranium sequestration by pH manipulation using NH ₃ gas	2017
Natalia Duque	Environmental Engineering	Masters	Non-Thesis Option	2017
Maximiliano Edrei	Mechanical Engineering	Masters	Investigation of Mixing Times of Sparged Bingham plastic type fluids as applied to the Pulse Jet Mixing Process	2017
Dayron Chigin	Electrical Engineering	Masters	Non-Thesis Option	2015
Andrew De La Rosa	Computer Science	Masters	Non-Thesis Option	2015

DOE Fellow	Discipline	Degree	Research Topic	Year of Graduation
Valentina Padilla	Environmental Engineering	Masters	Non-Thesis Option	2014
Revathy Venkataraman	Computer Science	Masters	Performance Evaluation of Mobile Applications with KMIT Technology Web Services	2014
Paola Sepulveda	Biomedical Engineering	Masters	Investigating the Role of a Less Uranium Tolerant Strain, Isolated from the Hanford Site Soil, on Uranium Interaction in Polyphosphate Remediation Technology	2014
Joel McGill	Environmental Engineering	Masters	Non-Thesis Option	2014
Mariela Sliva	Engineering Management	Masters	Non-Thesis Option	2013
Jose Matos	Mechanical Engineering	Masters	Development of improved Bodies for a Peristaltic Crawler for Radioactive Pipeline Unplugging	2013
Janty Ghazi	Electrical Engineering	Masters	Control, through Sensors and LabVIEW, of the Asynchronous Pulsing Unit	2013
Jaime Mudrich	Mechanical Engineering	Masters	Development of a Coupling Model for Fluid-Structure Interaction using the Mesh-free Finite Element Method and the Lattice Boltzmann Method	2013
Heidi Henderson	Environmental Engineering	Masters	Surface water and contaminant transport within the Oak Ridge National Laboratory	2013
Elicek Delgado-Cepero	Electrical Engineering	Masters	Structural Health Monitoring Inside Concrete and Grout Using the Wireless Identification Sensing Platform	2013
Yulyan Arias	Environmental Engineering	Masters	Non-thesis option	2012
Melissa Sanchez	Environmental Engineering	Masters	Non-thesis option	2012
Mario Vargas	Mechanical Engineering	Masters	Kinematic Control of Remote Stack Characterization System	2012
Lilian Marrero	Environmental Engineering	Masters	Soil/Groundwater - Modeling of Mercury Contamination at ORNL	2012
Lee Brady	Mechanical Engineering	Masters	Non-thesis option	2012
Kanchana Iyer	Biomedical Engineering	Masters	Non-Thesis Option	2012
Eric Inclan	Mechanical Engineering	Masters	Mesh adaptation for use in Lattice Boltzmann code	2012
William Mendez	Engineering Mngmt.	Masters	Development of Remote Stack Char. System	2011
Stephen Wood	Mechanical Engineering	Masters	Modeling of Pipeline Transients: Modified Method of Characteristics	2011
Merlin Ngachin	Environmental Sciences	Masters	Waste Processing - Baltman-Lattice Method to Model HLW	2011

DOE Fellow	Discipline	Degree	Research Topic	Year of Graduation
Melina Idarraga	Environmental Engineering	Masters	Dissolution rate of natural meta-autunite: effects of aqueous bicarbonate, pH and temperature	2011
Elsa Cabrejo	Environmental Engineering	Masters	Soil/Groundwater - Modeling of Mercury Contamination at ORNL	2011
Edgard Espinosa	Mechanical Engineering	Masters	Waste Processing - CFD Modeling of NuVison's Power Fluidic Technology/Process Remote Stack Characterization System	2011
Denny Carvajal	Biomedical Engineering	Masters	Soil/Groundwater – Bacteria Interaction due to Polyphosphate Injection at Hanford	2011
Amaury Betancourt	Environmental Engineering	Masters	Soil/Groundwater - Modeling of Mercury Contamination at ORNL	2011
Serkan Akar	Biomedical Engineering	Masters	Design and Development of an Enzyme-Linked Biosensor for Detection and Quantification of Phosphate Species	2010
Leydi Velez	Industrial Engineering	Masters	Decision Modeling Tools D&D Surveillance & Maintenance	2010
Duriem Calderin	Biomedical Engineering	Masters	Modeling of Loose Contamination Scenarios to Predict the Amount of Contamination Removed	2010
Amy Pahmer	Engineering Management	Masters	Non-Thesis Option	2010
Jose Vazquez	Environmental Engineering	Masters	Effects of temperature and pH on volatilization of mercury after chemical reduction	2009

STUDENTS' EMPLOYMENT AND TRANSITIONING TO THE WORKFORCE

STUDENTS HIRED BY DEPARTMENT OF ENERGY, NATIONAL LABS OR DOE CONTRACTORS

First Name	Last Name	Employer
Edgard	Espinosa	DOE EM Office of Nuclear Materials Disposition
Merlin	Ngachin	Argonne National Lab
Rubymir	Romero	Bechtel Power
Lee	Brady	DOE EM office of Deactivation and Decommissioning
Duriem	Calderin	Pacific Northwest National Lab (PNNL)
Charles	Castello	ORNL – Energy & Transportation Science Division
Rosa	Ramirez	DOE EM International Programs
Stephen	Wood	ORNL
Nicole	Anderson	National Energy Technology Laboratory (NETL)
Hansell	Gonzalez	Savannah River Nuclear Solutions
Adamandios	Manoussakis	Sandia National Laboratory
Silvina	Di Pietro	NNSA
Juan	Morales	Savannah River National Laboratory (SRNL)
Tristan	Simoës-Ponce	Savannah River Nuclear Solutions
Roger	Boza	INL

Jeff	Natividad	WRPS
Mariah	Doughman	PNNL
Josue	Estrada	WRPS
Phuong	Pham	Savannah River National Laboratory (SRNL)
Sebastian	Story	Los Alamos National Laboratory (LANL)
Olivia	Bustillo	Drummond Carpenter
Alejandro	De La Noval	Savannah River National Laboratory (SRNL)
Aubrey	Litzinger	Drummond Carpenter

STUDENTS HIRED BY FEDERAL, STATE OR LOCAL GOVERNMENT

First Name	Last Name	Employer
Serkan	Akar	Department of Commerce
Denisse	Aranda	NASA
Alex	Henao	Internal Revenue Services
Jose	Vazquez	Department of State
Amaury	Betancourt	Florida Department of Environmental Protection
Cindy	Cerna	Naval Sea Systems Command
Jennifer	Borges	Florida Department of Transportation
Elsa	Cabrejo	Dade County Environmental Department (Miami, Fla)
Alessandra	Monetti	Department of Defense – Office of the Secretary of Defense, Army Corp of Engineering
Kanchana	Iyer	Department of Health & Human Services
Alexander	Lopez	Florida Department of Transportation
Melissa	Sanchez	Florida Department of Environmental Protection
Frank	Silva	Department of State
Kiara	Pazan	U.S. Corps of Engineers
Jesse	Viera	U.S. Marine Corps
Christine	Wipfli	U.S. Dept of Defense
Sarah	Bird	U.S. Dept of Defense
Christopher	Strand	FAA
Mohammed	Albassam	City of Coconut Creek

STUDENTS HIRED BY PRIVATE STEM INDUSTRY

First Name	Last Name	Employer
Danny	Brenner	General Electric
Ramon	Colon	Bouygues Civil Works Florida
Henry	Diaz	Lockheed
Raul	Dominguez	Kimley-Horn and Associates, Inc.
Erica	McKinney	Boeing Company
William	Mendez	Boeing Company
Amy	Pahmer	Mount Sinai Medical Center
Giancarlos	Pena	Caribe Utilities of Florida, Inc
Jose	Rivera	FIU's Applied Research Center
Leydi	Velez	PriceSmart Inc

First Name	Last Name	Employer
Sandra	Zapata	Johnson & Johnson
Melina	Idarraga	Nova Consulting Inc.
Dasney	Joseph	General Electric
Victor	Uriarte	Intel Corporation
Denny	Carvajal	Mount Sinai Medical Center
Rinaldo	Gonzalez Galdamez	Crane Aerospace and Electronics
Nadia	Lima	HJ Foundation
Jose	Matos	Beckman Coulter
Mario	Vargas	Boeing Company
Yulyan	Arias	CH2M Hill
Maite	Barroso	Sikorsky Aircraft
Givens	Cherilus	Florida Power & Light
Elicek	Delgado	Motorola
Janty	Ghazi	Kiewit Power
Heidi	Henderson	CPH Inc.
Sheidyn	NG	Regeneron Pharmaceuticals
Shina	Rana	Florida Power & Light
Claudia	Cardona	STEM
Nel	Ciurdar	Burns & McDonnell
Lilian	Marrero	MWH Global
Joshua	Midence	Creativity, Value, Logic
Carol	Moreno-Pastor	Cummins
Jaime	Mudrich	Beckman Coulter
Ximena	Prugue	BRG Sports
Paola	Sepulveda	Stryker
Jennifer	Arniella	Permasteelisa North America
Francisco	Bolanos	Beckman Coulter
Dania	Castillo	HDR
Dayron	Chigin	Florida Power & Light
Joel	McGill	BND Engineers
Lucas	Nascimento	Raytheon
Raul	Ordonez	Texas Instruments
Valentina	Padilla	Brown & Caldwell
Mariela	Silva	Conoco Phillips
Gabriela	Vazquez	Florida Power & Light
Revathy	Venkataraman	TradeStation
Michael	Abbott	Magic Leap Inc
Michelle	Embon	Kimley-Horn and Associates, Inc.
Mariana	Evora	King Engineering Associates, Inc
Eduardo	Garcia	UTC Aerospace Systems
Steve	Noel	Goldman Sachs
Sasha	Philius	HaikuTech Europe B.V.
Brian	Castillo	Stryker
John	Conley	Florida Power & Light

First Name	Last Name	Employer
Andrew	De La Rosa	Lockheed
Jorge	Deshon	Lockheed
Maria	Diaz	Nova Consulting Inc.
Maximiliano	Edrei	Huntington Ingalls Newport News Shipbuilding Company
Janesler	Gonzalez	Velossa Tech
Meilyn	Planas	Florida Power & Light
Ryan	Sheffield	Applied Physics Laboratory
Aref	Shehadeh	Nova Consulting Inc.
Alexis	Smooth	Nexant
Sebastian	Zanlongo	Johns Hopkins University, Applied Physics Laboratory
Michael	DiBono	Microsoft
Ron	Hariprashad	RS&H
Ripley	Raubenolt	SCS Engineering
Sarah	Solomon	County of Los Angeles Department of Public Works
Joseph	Coverston	Pennsylvania State University Applied Research Laboratory
Ryan	Cruz	Lockheed
Katherine	Delarosa	Advanced Environmental Laboratories
Christopher	Excellent	Florida Power and Light
Ximena	Lugo	Kimley-Horn and Associates, Inc.
Joshua	Nuñez	Dayton-Granger, Inc.
Alex	Rivero	General Electric
Jason	Soto	SIA Solutions LLC
Patrick	Uriarte	iRobot
Alexis	Vento	SCS Engineering
Derek	Gabaldon	Rolls-Royce
Gisselle	Gutierrez	Kimley-Horn and Associates, Inc.
Daniel	Martin	FIU's Applied Research Center
Michael	Thompson	Raytheon
Rocio	Trimino Gort	A&P Consulting Transportation Engineers, Corp.
Adrian	Muino	Lockheed Martin
Eduardo	Rojas	Kinetic Engineering and Accident Reconstruction
Desmond	Sinnott	Florida Power and Light
Philip	Moore	Florida Power and Light

PATENT DISCLOSURES, APPLICATIONS, AND AWARDS

US Patent 11,630,025 “Robotic Inspection Device”, issued April 18, 2023.

FIU Patent Disclosure, #FIU496 “Mini-rover Inspection Tool,” submitted, 11/2022

US Patent 6447366, M Ali Ebadian, Joseph F Boudreaux, Leonel E Lagos, issued Sept., 10, 2002

PROFESSIONAL HONORS, PRIZES, FELLOWSHIPS

Honors

2025 [Fall] – Achieved Tenured Associate Professor Rank

2025 – Certificate of Achievement – Research Recognition – Office of the President, Office of the Provost (Spring 2025)

2025 – FIU Presidential Excellence Award – Certificate of Appreciation (Spring 2025)
2024 – **Fellow**, Waste Management Symposia <https://www.wmsym.org/awards/past-award-winners/>
2022 – Applied Research Center, Outstanding Group of the Year Award (Robotics Group)
2022 – American Nuclear Society’s Robotics and Remote Systems Division Service Award (Chair Award)
2022 – American Nuclear Society’ Robotics and Remote Systems Division Award - Special Recognition Award for Support of ANS Embedded Topical Winter Meeting 2021
2022 – Waste Management Symposia, ASME Best Paper/Oral Presentation Award
2020 – FIU Presidential Excellence Award finalist
2020 – Waste Management Symposia, ASME Best in Conference Poster Presentation/Paper Award
2019 – FIU Presidential Excellence Award finalist
2018 – American Nuclear Society’s Robotics and Remote Systems Division Service Award (Treasurer)
2017 – FIU Presidential Excellence Award finalist
2016 – FIU Presidential Excellence Award finalist
2013 – FIU Merit Award – Florida International University
2008 – FIU Spot Award – Florida International University
2007 – Dean’s Award – Florida International University’s College of Engineering
2002 – Excellent Performance Award – HCET
1999 – HCET’s Leadership Award – HCET
1993 – HBCU/MI Fellowship, HBCU/MI Clark Atlanta University Consortium
1993 – HBCU/MI Summer Internship at US Environmental Protection Agency (EPA)

OFFICES HELD IN PROFESSIONAL SOCIETIES

2020 – Present, Board of Trustees Member, Roy G. Post Foundation Fellowship
2010 – Present, Program Advisory Committee (PAC) member, Waste Management Symp.
2022 – Present, Exe. Committee American Nuclear Society, Robotics and Remote Systems Division.
2008 – 2010, Program Advisory Committee supporter, Waste Management Symposia
2020 – 2022, Ex-Officio, American Nuclear Society, Robotics and Remote Systems Division
2018 – 2020, Chair, American Nuclear Society, Robotics and Remote Systems Division
2017 – 2018, Vice Chair, American Nuclear Society, Robotics and Remote Systems Division
2016 – 2017, Treasurer, American Nuclear Society, Robotics and Remote Systems Division

SERVICE

2024 – 2025, College of Engineering and Computing Faculty Council Chair (2nd Year)
2024 – 2025, Search Committee, Moss Department of Construction Management - Open Rank - Tenured/Tenure-Track Faculty in Construction Management (Committee Chair: Dr. Pradhananga)
2024 – 2024, Participation and presentation at the 3rd Annual Construction Technology & Innovation Conference, (robotic technology demonstration), Orlando, Florida (May 7, 2024)
2024 – 2025, US Department of Energy’s Deactivation and Decommissioning Road Map Working Group, Network of National Laboratories for Environmental Management and Stewardship – Member of Subject Matter Experts group.
2024 – 2024, Associated Builders & Contractors Florida East-Coast Technical Conference (robotic technology presentation/demonstration), Margaritaville Hotel, Hollywood, Florida
2024 – 2024, Vertex Construction, presentation and Demonstration of SPOT and Trimble X7 technologies (04/25/2024)

2024 – 2024, FIU Robotics and Artificial Intelligence Workshop (April 22 -24, 2024), lead organizer
2022 – 2023, Search Committee, Moss Department of Construction Management - Open Rank - Tenured/Tenure-Track Faculty in Construction Management (Committee Chair: Dr. Orabi)
2022 – Present, Roy G. Post Scholarship Foundation, Board of Trustees Member
2022 – 2024, Volunteer She Builds Summer Camp (robotics lab tours)
2022 – 2024, Volunteer Trimble Camp (robotics lab tours and robotic technology demonstrations)
2023 – 2023, Associated Builders & Contractors National Meeting, Kissimmee, Florida
2022 – 2023, Associated Builders & Contractors Florida East Coast Chapter Technology Conference (robotic technology demonstration), Miami, Florida (February 9, 2023), Doubletree by Hilton Hotel Miami Airport & Convention Center
2014 – 2022, Applied Research Center, Mentorship Program, Post-Docs/Young Professionals mentor
2010 – Present, Volunteer FIU College of Engineer – Engineering Expo

Journal Reviewer

2026 – Present, Guest Editor, Applied Sciences – Special Issue Robotics and Autonomous Systems
https://www.mdpi.com/journal/applsci/special_issues/N4AHO4J9O8
2021 – 2025, Guest Editor, Applied Sciences – Special Issue Robotics Systems for Inspection and Surveillance of Industrial Infrastructure
https://www.mdpi.com/journal/applsci/special_issues/6WZKGGH7E6Z

INTERNATIONAL ACTIVITIES

2025 (Fall) – L. Lagos, Technical Meeting (CM) on R&D to Support Effective Implementation of Nuclear Decommissioning Projects (EVT2406503), International Atomic Energy Agency (IAEA), Vienna, Austria, November 24-28, 2025 [Presenter – virtual participation]
2025 (Summer) – L. Lagos, Consultancy Meeting (CM) on Curriculum Development for Nuclear Decommissioning School (EVT2502604), International Atomic Energy Agency (IAEA), Vienna, Austria, July 7-11, 2025 [Presenter and contributor]
2025 (Summer) – L. Lagos, Consultancy Meeting (CM) on Application of Semantic Information Technologies in Nuclear Decommissioning (EVT2502603), International Atomic Energy Agency (IAEA), Vienna, Austria, July 1-4, 2025 [Presenter and contributor]
2025 (Spring) - L. Lagos, Consultancy Meeting (CM) on R&D to Support Effective Implementation of Nuclear Decommissioning Projects (EVT2406503), International Atomic Energy Agency (IAEA), Vienna, Austria, March 19-21, 2025 [Presenter and CM group Chair]
2025 (Spring) - L. Lagos, Consultancy Meeting (CM) on Simple Knowledge Organization System (SKOS) on Decommissioning of Nuclear Facilities (EVT2406501), International Atomic Energy Agency (IAEA), Vienna, Austria, February 24 – 28, 2025 March [Presenter]
2024 (Fall) - L. Lagos, Consultancy Meeting (CM) on Application of AI Large Language Models for Safety in Decommissioning of Nuclear Fuel Cycle Facilities (EVT2404664), International Atomic Energy Agency (IAEA), Vienna, Austria, October 29 – November 1, 2024 [Presenter and CM Chair]
2024 (Fall) Consultancy Meeting (CM) on the Development of eLearning Modules for Decommissioning of Nuclear Facilities. Participated in meetings at IAEA's Headquarters in Vienna, Austria, October 7-10, 2024 [virtual participation]
2024 – 2024 International Advisory Board for the French Nuclear Society's DEM2024 conference "International Conference on Decommissioning Challenges: Role and importance of innovations" to be held in Avignon, France, May 27-29, 2024. <https://www.sfen.org/evenement/dem-2024/>
2024 (Spring) – L. Lagos, Consultancy Meeting (CM) on Consultancy Meeting on New and Emerging Technologies to Advance Decommissioning of Nuclear Facilities (NET4D) (ENV2306212),

International Atomic Energy Agency (IAEA), Vienna, Austria, February 5 – 9, 2024 [Presenter and contributor]

2023 – Present, Leading the efforts with the International Atomic Energy Agency (IAEA) to obtain FIU designation of International Collaborating Research Centre.

2022 – Present, Participating and contributing to IAEA Working Group, New and Emerging Technologies for Decommissioning. Participated in 3 meetings at IAEA Headquarters in Vienna, Austria.

2021 – 2023, Development of a Master's in Nuclear Decommissioning and Environmental Remediation (MINDER). The MINDER program is being proposed for funding from the European Commissioning under ERASMUS + program and is a collaboration between Portugal, Brazil, Norway, Belgium, and the US. The program aims to develop an international Master's program in nuclear decommissioning.

2020 – 2022, As part of the NSF funded Regional Center for Nuclear Education and Training (located at Indian River State College), I organized, participated and presented at University of Vigo, Vigo Spain (September 5-6, 2022) and Nuclear Energy Agency, Paris, France (September 7-8, 2022). The FIU Team included representatives from IRSC, Florida Power & Light/NexERA, Energy Northwest, and FIU.

2022 – Present Established Memorandum of Understanding (MOU) and collaborative efforts between Korea Nuclear International Cooperation Foundation (KONICOF) and FIU. MOU was fully executed on June, 2022.

2022 – 2022, Participated in Consultancy Meeting at the International Atomic Energy Agency, Vienna, Austria. The 1-week meeting was conducted in May, 2022 and had the purpose of establishing the frame of reference for larger meeting in August 2022 at the IAEA.

2021– 2021 Served as subject matter expert a technical review conducted by the International Atomic Energy Agency titled "IAEA INTERNATIONAL PEER REVIEW OF MIDAND-LONG-TERM ROADMAP TOWARDS THE DECOMMISSIONING OF TEPCO'S FUKUSHIMA DAIICHI NUCLEAR POWER STATION," Virtual weekly meetings were conducted during June – August 2021 and final report was submitted to the government of Japan on September 2021.

2019 – 2019 Conducted International Atomic Energy D&D Workshop at FIU (09/09/19 – 09/13/19).

2017 – Established Practical Arrangement MOU between International Atomic Energy Agency (IAEA) and FIU (2017).

PROFESSIONAL WEBSITES

<https://arc.fiu.edu/leonel-lagos/>

https://scholar.google.com/citations?hl=en&user=BWxG5LMAAAAJ&view_op=list_works&sortby=pubdate

<https://fellows.fiu.edu/>

<https://doeresearch.fiu.edu/SitePages/Welcome.aspx>

<https://linkedin.com/in/leonel-lagos-25457a56>