

FRAY FRANCISCO POZO-LORA, PH.D.

FIU College of Engineering & Computing ◊ Miami, FL 33174
fpozolor@fiu.edu ◊ fraypozo.github.io ◊ orcid: 0000-0002-8212-2380

RESEARCH INTERESTS

Precast/prestressed concrete. FRP-reinforced concrete. Structural mechanics. Reliability analysis and code development. Sustainable construction. Digital fabrication with concrete.

EDUCATION

University of Nebraska – Lincoln

2019-2021

Ph.D. in Engineering: Construction Engineering & Management

Dissertation: “Flexural & Bond Performance of Pre-Tensioned Beams Reinforced with 1.125-inch Diameter Prestressing Strands.”

Overall GPA: 4.00/4.00

Utah State University

2018-2019

Ph.D. in Civil and Environmental Engineering: Structures Emphasis (**Incomplete**)

Did one year of Ph.D. program and then transferred to UNL

Institution GPA: 3.88/4.00

Utah State University

2016-2018

M.S. in Civil and Environmental Engineering: Structures Emphasis

Thesis: “On Thermal Bowing of Concrete Sandwich Wall Panels with Flexible Shear Connectors.”

Master’s GPA: 3.83/4.00; Overall GPA: 3.88

Universidad Autonoma de Santo Domingo

2009-2014

Civil Engineer Diploma – Cum Laude (5-year cycle without thesis)

Overall GPA: 86.8/100

ACADEMIC EXPERIENCE

Florida International University (FIU)

September 2024 - Present

Research Assistant Professor – Civil & Environmental Eng. (90% Res. + 10% Serv.)

Miami, FL

- Proposal writing following DOT, Transportation Center, among other sponsors.
- Review current project reports for the sponsored project of IBT/ABC-UTC, FDOT, NCHRP and US Army Corp.
- Follow up deliverables of research projects.
- Service to the college of engineering and the department in the form of governance and community service.

Universidad Autonoma de Santo Domingo (UASD)

Jan 2023 - Present

Graduate Thesis Advisor – Structural Engineering M.S. Program (Honorary)

Santo Domingo, Dom. Rep.

- Represented the university during the Dominican Republic Building Code update (summer 2024).
- Mentored graduate students in preparing research proposal, writing thesis and defending their work.

University of Nebraska – Lincoln (UNL)

March 2023 - August 2024

Postdoctoral Research Associate – Durham School of AE and Const. (100% Research)

Omaha, NE

- Wrote research proposals for industry, government, and non-profit agencies.
- Mentored graduate students in the preparation of journal articles, research proposals, and dissertation defenses.
- Co-authored ten (10) research articles and seven (7) research reports.

Universidad Iberoamericana (UNIBE)

May 2021 - December 2022

Civil Engineering Adjunct

Santo Domingo de Guzman, Dominican Republic

- Taught structural analysis, mechanics of deformable solids, reinforced concrete, and formwork design over the course of 5 terms.
- Was in the undergraduate thesis panel for 1 project.
- Was the capstone advisor for 2 projects.
- Mentored student to prepare for the EERI seismic design competition.

- Taught structural analysis, structural dynamics, reinforced concrete and bridge design over the course of 5 terms.
- Was in the undergraduate thesis panel for 2 projects.

PUBLICATIONS

Publications in refereed journals and magazines

7. **Pozo-Lora, F.F.**, Maguire, M., Sorensen, A.D., Halling, M.W., & Barr, P.J. (2024) Benchmarking the Bond of 19-Wire–28.6-mm-Diameter Prestressing Strands to Normal-Weight Concrete. *J. Mater. Civ. Eng.*, 36(11). <https://doi.org/10.1061/JMCEE7.MTENG-18044>.
6. Luebke, J., **Pozo-Lora, F. F.**, Al-Rubaye, S., & Maguire, M. (2023). Out-of-Plane Flexural Behavior of Insulated Wall Panels Constructed with Large Insulation Thicknesses. *Materials*, 16(11), 4160. <https://doi.org/10.3390/ma16114160>.
5. McRory, J. W., **Pozo-Lora, F. F.**, Benson, Z., Tawadrous, R., & Maguire, M. (2022). Behavior of Hybrid Reinforced Concrete Bridge Decks Under Static and Fatigue Loading. *Polymers* 14, no. 23: 5153. <https://doi.org/10.3390/polym14235153>.
4. **Pozo-Lora, F. F.**, & Maguire, M. (2022). Determination of the Mechanical Properties of Flexible Connectors for Use in Insulated Concrete Wall Panels. *JoVE (Journal of Visualized Experiments)*, (188), e64292, <https://doi.org/10.3791/64292>.
3. Maguire, M., & **Pozo-Lora, F. F.** (2020). Partially Composite Concrete Sandwich Wall Panels: What is “percent composite”? *Concrete International*, 42(10), 47–52. <https://www.concrete.org/publications/internationalconcreteabstractsportal.aspx?m=details&ID=51728201>.
2. **Pozo-Lora, F.**, & Maguire, M. (2020). Thermal bowing of concrete sandwich panels with flexible shear connectors. *Journal of Building Engineering*, 29, 101124. <https://doi.org/10.1016/j.jobe.2019.101124>.
1. Cox, B., Syndergaard, P., Al-Rubaye, S., **Pozo-Lora, F. F.**, Tawadrous, R., & Maguire, M. (2019). Lumped GFRP star connector system for partial composite action in insulated precast concrete sandwich panels. *Composite Structures*, 229, 111465. <https://doi.org/10.1016/j.compstruct.2019.111465>.

Publications in preparation or under review

2. **Pozo-Lora, F.F.**, Maguire, M., Sorensen, A.D., Halling, M.W., & Barr, P.J. Transfer and Development Length of 28.6-mm Diameter Grade 1780 Strands. *Journal of Bridge Engineering*. Under review.
1. **Pozo-Lora, F.F.**, Maguire, M., Halling, M.W., & Barr, P.J. Flexural Performance of Bridge Girders Constructed with Multiple 19-Wire, 28.6 mm. Diameter, Grade 1780, Strands and Self-Consolidating Concrete. *Practice Periodical on Structural Design and Construction*. Under review.

Publications in refereed conference proceedings

5. Al-Maabreh, A., **Pozo-Lora, F. F.**, & Maguire, M. (2023). Design of wythe connectors for out-of-plane loading of insulated walls. 2023 PCI Convention at The Precast Show. Columbus, OH. 1-14. <https://digitalcommons.unl.edu/archengfapub/205/>
4. Awawdeh, A., **Pozo-Lora, F. F.**, & Maguire, M. (2023). Inter-wythe slip design criteria for non-composite insulated walls. 2023 PCI Convention at The Precast Show. Columbus, OH. 1-23. <https://digitalcommons.unl.edu/archengfapub/204/>
3. **Pozo-Lora, F. F.**, Al-Rubaye, S., & Maguire, M. (2021). Parametric Study of Pre-Tensioned Girders Reinforced with 19-Wire 1-1/8” Diameter Prestressing Strands. 2021 PCI/NBC, 1–15. https://www.pci.org/PCI_Docs/Papers/2021/Paper_Pozo-Lora.pdf
2. **Pozo-Lora, F. F.**, & Maguire, M. (2019). Flexural Behavior of Continuous Non-Loadbearing Insulated Wall Panels. 2019 PCI/NBC, 1-15. https://www.pci.org/PCI_Docs/Papers/2019/22_Final_Paper%20Pozo-Lora%20Maguire.pdf
1. Tavakoli, R., Echols, A., Pratik, U., Pantic, Z., **Pozo, F.**, Malakooti, A., & Maguire, M. (2017). Magnetizable concrete composite materials for road-embedded wireless power transfer pads. 2017 IEEE Energy Conversion Congress and Exposition, ECCE 2017, 2017/1. <https://doi.org/10.1109/ECCE.2017.8096705>

Conference and congress presentations

3. **Pozo-Lora, F. F.** & Taveras-Montero, M.A. (2022). Development of the Resistance Factors for the Dominican Republic Code of Concrete Structures. UASD International Research Congress (In Spanish).
2. **Pozo-Lora, F. F.** (2021). Parametric Study of Pre-Tensioned Girders Reinforced with 19-Wire 1-1/8" Diameter Prestressing Strands. 2021 PCI Convention - Innovations in Precast Concrete Components.
1. **Pozo-Lora, F. F.** (2019). Flexural Behavior of Continuous Non-Loadbearing Insulated Wall Panels. 2019 PCI/NBC, 15.

Technical Reports

11. Hatchett, B., Heggli, A., Bean, B., Anderson, E., Maguire, M., **Pozo-Lora, F.** Meyer, J. (2024) *Developing Quality-Controlled Datasets and Methods to Assess the Impact of Rain on Snow Events on Nevada Highways*. Reno. Nevada Department of Transportation.
11. Ebrahim, Z., **Pozo-Lora, F. F.**, Benson, Z., Mastali, M., Maguire, M., & Hu, J. (2023). *Performance of High Early-Strength Materials Used in Concrete Bridge Repair* (No. SPR FY21 (006)). Nebraska. Nebraska Department of Transportation. <https://rosap.nrl.bts.gov/view/dot/72660>
10. Ebrahim, Z., **Pozo-Lora, F. F.**, & Maguire, M. (2023). *Hemp-based Material for Sustainable Concrete Masonry Units*. Nebraska. Nebraska Department of Economic Development.
9. **Pozo-Lora, F. F.**, Maguire, M., Lucier, G., Gombeda, M. (2023). *Evaluating beam-spring analyses in lecwall and eriksson wall for use with the c-grid system*. Private research report to the Altus Group.
8. Poudel, U., Allerheiligen, C., **Pozo-Lora, F. F.**, & Maguire, M. (2023). *Testing of Recycled Plastic Lumber*. University of Nebraska – Lincoln. (Research Report – FIRSTSTAR Recycling)
7. **Pozo-Lora, F. F.**, Tahat, M., Awawdeh, A., Al-Rubaye, S., & Maguire, M. (2023). *Development of a PCI Standard Test Method for Determination of Performance of Insulated Wall Panel Wythe Connectors*. University of Nebraska – Lincoln. (Research Report – PCI.)
6. **Pozo-Lora, F. F.**, Al-Rubaye, S., & Maguire, M. (2022). *Long-Term Monitoring of Cast-in-place Reinforced Concrete Slab Deformations*. University of Nebraska – Lincoln. (Research Report – Owens Corning Co.)
5. Taveras-Montero, M.A., **Pozo-Lora, F. F.**, & Maguire, M. (2022). Safety factors for concrete structures in the Dominican Republic. Ministry of Higher Education, Science and Tecnology. Santo Domingo de Guzman, Dominican Republic.
4. **Pozo-Lora, F. F.**, Benson, Z., & Maguire, M. (2020). *Insulated Wall Panel Connection Testing and Analysis*. University of Nebraska – Lincoln. (Research Report – ATMI Precast.)
3. McRory, J. W., **Pozo-Lora, F. F.**, Benson, Z., & Maguire, M. (2020). *Structural Fiber Reinforcement to Reduce Deck Reinforcement and Improve Long-Term Performance* (MPC-20-413). <https://www.ugpti.org/resources/reports/details.php?id=989&program=mpc>.
2. **Pozo-Lora, F. F.**, Benson, Z., Maguire, M., Sorensen, A. D., Haling, M., & Barr, P. J. (2020). *Bond Performance of 1.125 Inch Diameter Prestressing Strands*. <https://cait.rutgers.edu/wp-content/uploads/2018/05/cait-utc-nc51-final.pdf>
1. **Pozo-Lora, F.** & Maguire, M. (2019). *Thermal Bowing Testing of Precast Concrete Sandwich Wall Panels*. Civil and Environmental Engineering Faculty Publications. Paper 3621. https://digitalcommons.usu.edu/cee_facpub/3621.

AWARDS

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- 2022 **Outstanding Teacher:** Civil Engineering School, Universidad Iberoamericana, Dominican Republic.
 - 2016 **Ministry of Higher Education, Science & Technology Master's Scholarship:** Awarded US\$65,905 of merit-based funding to study a master's degree at Utah State University..

TEACHING RECORD

Universidad Autonoma de Santo Domingo (UASD): Graduate Level

Role	Code	Name	Term
Instructor	CIV-8810	Numerical Methods Workshop	Spring 23

Pontificia Universidad Catolica Madre y Maestra (PUCMM): Undergraduate Level

Role	Code	Name	Term
Instructor	ICV-425	Structural Design IV	Sum 21
Instructor	ICV-421	Reinforced Concrete Structures II	Sp 2022
Instructor	ICV-322	Structural Analysis I	Sum 21, Sp 21 (x2), Fall 22
Instructor	ICV-323	Structural Analysis II	Fall 21, Sum 22
Instructor	ICV-325	Structural Dynamics	Fall 22

Universidad Iberoamericana (UNIBE): Undergraduate Level

Role	Code	Name	Term
Instructor	IC4-703	Formwork Systems	Sum 2022
Instructor	IGI-212	Mechanics of Deformable Solids I	Sum 2021 (x2), Sum 2022
Instructor	IGI-310	Mechanics of Deformable Solids II	Fall 2021
Instructor	IC4-315	Reinforced Concrete I	Sum 2021
Instructor	IC4-313	Structural Analysis I	Sp 2022
Instructor	IC4-314	Structural Analysis II	Sum 2022

SERVICE

Journal Peer Reviewer

January 2023 - Present

- Taylor & Francis: Journal of Natural Fibers (once).
- MDPI: Applied Sciences (3 times), Buildings (3 times), and Sustainability (twice).
- Elsevier: Engineering Structures (twice).

ACI Dominican Republic Chapter

Vicepresident

January 2023 - July 2024

Santo Domingo, Dominican Republic

- Organize continuing education activities to spread concrete knowledge.
- Translate papers for ACI Concrete International.
- Participate in the ACI Convention representing the chapter.

Ministry of Higher Education, Science and Technology of Dominican Republic

Research Proposals Reviewer

2022 - 2023

Santo Domingo, Dominican Republic

- Reviewed and rated 3 proposals in 2023.
- Reviewed and rated 5 proposals in 2022.

INDUSTRY EXPERIENCE

Freelance

Structural Engineering Consultant

January 2021 - March 2023

Santo Domingo, Dominican Republic

- Offered structural design consultancy to engineering firms on general structural design.
- Trained engineers and students in the use of commercial finite element software.

Taveras Ingenieria & Servicios

Structural Design Engineer

August 2015 - July 2016

Santo Domingo, Dominican Republic

- Designed more than 30 masonry, concrete, and steel structures for high seismic loads ($S_s = 1.55g$ and $S_1 = 0.75g$) and high wind loads ($v = 160-190$ mph), implementing ACI 530-13, ACI 318-14, and ANSI/ASIC 360-10 and 358-10.
- Evaluated structures following Dominican and American regulations.
- Indicated details for draftspersons for proper detailing of structures.

PROFESSIONAL/ACADEMIC MEMBERSHIPS

- 2022 Faculty Member of The Masonry Society.
- 2021 Member of the American Concrete Institute: Faculty Network; Former vice-president of the Dominican Republic Chapter.
- 2019 Member of the National Career of Researchers of the Ministry of Education, Science & Technology of the Dominican Republic. Career Number: 0724
- 2016 Member of the Precast Concrete Institute.
- 2015 Professional Engineer (License #33939), Dominican College of Engineers, Architects, and Land Surveyors (CODIA, acronym in Spanish.)

TECHNICAL STRENGTHS

Software	AutoCAD, REVIT, ETABS, SAFE, SAP2000, Eriksson Wall, Adobe Illustrator, L ^A T _E X
Programming	Python, R, Excel VBA
Web design	HTML 5, CSS 3, Bootstrap 5, Javascript ES6
Computation	MATLAB, MathCAD, Smath Studio

REFERENCES

References will be provided upon reasonable request.