FRAY FRANCISCO POZO-LORA, PH.D.

Engineering Center ⋄ EC3685 ⋄ 10555 W Flagler St, Miami, FL 33174
fpozolor@fiu.edu / fpozolora@gmail.com ⋄ orcid: 0000-0002-8212-2380

EDUCATION

Ph.D. in Construction Engineering & Management 8/2019 - 8/2021
Durham School of Architectural Engineering and Construction
University of Nebraska – Lincoln (UNL), Lincoln, NE
Dissertation: "Flexural & Bond Performance of Pre-Tensioned Beams Reinforced with 1.125-inch Diameter Prestressing Strands."
Advisor: Prof. Marc Maguire

[Incomplete] Ph.D. in Civil and Environmental Engineering* 8/2018 - 8/2019
Utah State University (USU), Logan, UT
* Did one year of Ph.D. program and then transferred to UNL

M.S. in Civil and Environmental Engineering (Structures Emphasis) 8/2016 - 8/2018
Civil & Environmental Engineering Department
Utah State University (USU), Logan, UT
Thesis: "On Thermal Bowing of Concrete Sandwich Wall Panels with Flexible Shear Connectors."
Advisor: Prof. Marc Maguire

Civil Engineer's Degree – Cum Laude (5-year program with thesis) 1/2009 - 8/2014
Civil Engineering School
Universidad Autonoma de Santo Domingo (UASD), Dominican Republic

EXPERIENCE

Visiting Research Assistant Professor 9/2024 - Present
Department of Civil & Environmental Engineering
Florida International University, Miami, FL

Postdoctoral Associate 3/2023 - 9/2024
Durham School of Architectural Engineering and Construction
University of Nebraska – Lincoln, Omaha, NE

Graduate Professor 1/2023 - 3/2023
General Directorate of Postgraduate and Continuing Education
Autonomous University of Santo Domingo, Dominican Republic

Freelance Professional Engineer (PE License #33939 Dominican Republic) 1/2021 - 12/2022
Santo Domingo, Dominican Republic

Professor by Course 5/2021 - 12/2022
Civil and Environmental Engineering Department
Pontificia Universidad Catolica Madre y Maestra (PUCMM), Dominican Republic

Adjunct Docent 5/2021 - 12/2022
Civil Engineering School
Universidad Iberoamericana (UNIBE), Dominican Republic

Journal & Magazine Articles

[1] **F. F. Pozo-Lora**, M. Maguire, A. D. Sorensen, M. W. Halling, and P. J. Barr, "Flexural performance of bridge girders constructed with multiple 19-wire-28.6-mm-diameter, grade 1780 strands, and self-consolidating concrete. forthcoming," *Journal of Structural Design and Construction Practice*, 2025, ISSN: 1943-5592. DOI: 10.1061/JSDCCC.SCENG-1697.

[2] **F. F. Pozo-Lora**, M. Maguire, A. D. Sorensen, M. W. Halling, and P. J. Barr, "Benchmarking the bond of 19-wire–28.6-mm-diameter prestressing strands to normal-weight concrete," *Journal of Materials in Civil Engineering*, vol. 36, 11 Nov. 2024, ISSN: 0899-1561. DOI: 10.1061/JMCEE7.MTENG-18044.

[3] J. Luebke, **F. F. Pozo-Lora**, S. Al-Rubaye, and M. Maguire, "Out-of-plane flexural behavior of insulated wall panels constructed with large insulation thicknesses," *Materials*, vol. 16, p. 4160, 11 Jun. 2023, ISSN: 1996-1944. DOI: 10.3390/ma16114160.

[4] J. W. McRory, **F. F. Pozo-Lora**, Z. Benson, R. Tawadrous, and M. Maguire, "Behavior of hybrid reinforced concrete bridge decks under static and fatigue loading," *Polymers*, vol. 14, p. 5153, 23 Nov. 2022, ISSN: 2073-4360. DOI: 10.3390/polym14235153.

[5] **F. F. Pozo-Lora** and M. Maguire, "Determination of the mechanical properties of flexible connectors for use in insulated concrete wall panels," *JoVE*, e64292, 188 2022, ISSN: 1940-087X. DOI: doi:10.3791/64292.

[6] M. Maguire and **F. F. Pozo-Lora**, "Partially composite concrete sandwich wall panels," *Concrete International*, vol. 42, pp. 47–52, 10 2020. [Online]. Available: https://www.concrete.org/publications/internationalconcreteabstractsportal.aspx?m=details&ID=51728201.

[7] **F. Pozo-Lora** and M. Maguire, "Thermal bowing of concrete sandwich panels with flexible shear connectors," *Journal of Building Engineering*, vol. 29, p. 101 124, May 2020, ISSN: 23527102. DOI: 10.1016/j.jobe.2019.101124.

[8] B. Cox, P. Syndergaard, S. Al-Rubaye, **F. F. Pozo-Lora**, R. Tawadrous, and M. Maguire, "Lumped gfrp star connector system for partial composite action in insulated precast concrete sandwich panels," *Composite Structures*, vol. 229, p. 111 465, Dec. 2019, ISSN: 02638223. DOI: 10.1016/j.compstruct.2019.111465.

Conference Articles

[1] A. Awawdeh, **F. F. Pozo-Lora**, and M. Maguire, "Inter-wythe slip design criteria for non-composite insulated walls," in *2023 PCI Convention at the Precast Show*, PCI, 2023. [Online]. Available: https://digitalcommons.unl.edu/archengfacpub/204/.

[2] A. Al-Maabreh, **F. F. Pozo-Lora**, and M. Maguire, "Inter-wythe slip design criteria for non-composite insulated walls," in *2023 PCI Convention at the Precast Show*, PCI, 2023. [Online]. Available: https://digitalcommons.unl.edu/archengfacpub/205/.

[3] **F. F. Pozo-Lora**, S. Al-Rubaye, and M. Maguire, "Parametric study of pre-tensioned girders reinforced with 19-wire 1-1/8" diameter prestressing strands," in *2021 PCI Convention - Innovations in Precast Concrete Components*, Precast Concrete Institute, 2021, pp. 1–15. [Online]. Available: https://ems-www.pci.org/PCI_Docs/Papers/2021/Paper_Pozo-Lora.pdf.

[4] **F. F. Pozo-Lora** and M. Maguire, "Flexural behavior of continuous non-loadbearing insulated wall panels," in *2019 PCI/NBC*, PCI, Sep. 2019, p. 15. [Online]. Available: https://www.pci.org/PCI_Docs/Papers/2019/22_Final_Paper%20Pozo-Lora%20Maguire.pdf.

[5] R. Tavakoli, A. Echols, U. Pratik, Z. Pantic, **F. Pozo**, A. Malakooti, and M. Maguire, "Magnetizable concrete composite materials for road-embedded wireless power transfer pads," in *2017 IEEE Energy Conversion Congress and Exposition, ECCE 2017*, vol. 2017-Janua, 2017, ISBN: 9781509029983. DOI: 10.1109/ECCE.2017.8096705.

Technical Reports

[1] P. Barutha, M. Maguire, E. Saldana, and **F. F. Pozo-Lora**, "Accelerated bridge construction (abc) decision tool," Nebraska Department of Transportation, Tech. Rep. SPR-FY22(009), 2024. [Online]. Available: https://dot.nebraska.gov/media/gs1ds04h/2024-abc-decision-tool-final-report.pdf.

[2] A. Heggli, B. Bean, B. Hatchett, E. Anderson, M. Maguire, **F. Pozo-Lora**, and J. Meyer, "Developing quality-controlled datasets and methods to assess the impact of rain on snow events on nevada highways," Nevada Department of Transportation, Tech. Rep. 296-22-803, 2024. [Online]. Available: https://www.dot.nv.gov/home/showpublisheddocument/23206/638741739071370000.

[3] Z. Ebrahim, **F. F. Pozo-Lora**, Z. Benson, M. Mastali, M. Maguire, and J. Hu, "Performance of high early-strength used in concrete bridge repair," Nebraska Department of Transportation, Tech. Rep. SPR FY21(006), 2023. [Online]. Available: https://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=1274&context=ndor.

[4] Z. Ebrahim, **F. F. Pozo-Lora**, and M. Maguire, "Hemp-based material for sustainable concrete masonry units," University of Nebraska - Lincoln, Nebraska Department of Economic Development, 2023.

[5] U. Poudel, C. Allerheiligen, **F. F. Pozo-Lora**, and M. Maguire, "Testing of recycled plastic lumber," University of Nebraska – Lincoln, Private research report for FIRSTSTAR Recycling, 2023.

[6] **F. F. Pozo-Lora**, M. Maguire, G. Lucier, and M. Gombeda, "Evaluating beam-spring analyses in lecwall and eriksson wall for use with the c-grid system," University of Nebraska – Lincoln, Private Research Report for the Altus Group, 2023.

[7] **F. F. Pozo-Lora**, S. Al-Rubaye, M. Tahat, A. Awawdeh, and M. Maguire, "Development of a pci standard test method for determination of performance of insulated wall panel wythe connectors," University of Nebraska – Lincoln, Private Research Report to the Precast Concrete Institute (PCI), 2023.

[8] M. A. Taveras-Montero, **F. F. Pozo-Lora**, and M. Maguire, "Safety factors for concrete structures in the dominican republic," Universidad Autonoma de Santo Domingo, Private research report for the Ministry of Higher Education, Science and Tecnology, 2023.

[9] **F. Pozo-Lora**, S. Al-Rubaye, and M. Maguire, "Long-term monitoring of cast-in-place reinforced concrete slab deformations," University of Nebraska – Lincoln, Private Research Report to Owens Corning Co. 2022.

[10] **F. F. Pozo-Lora**, Z. Benson, and M. Maguire, "Insulated wall panel connection testing and analysis," University of Nebraska – Lincoln, Private Research Report to ATMI Precast, 2021.

[11] **F. F. Pozo-Lora** and M. Maguire, "Designing gfrp-reinforced tilt-up wall panels," University of Nebraska – Lincoln, White paper, 2021. DOI: 10.32873/unl.dc.oth.011.

[12] J. W. McRory, **F. F. Pozo-Lora**, Z. Benson, and M. Maguire, "Structural fiber reinforcement to reduce deck reinforcement and improve long-term performance," Mountain Plains Consortium, Tech. Rep. MPC 20-413, 2020. [Online]. Available: https://rosap.ntl.bts.gov/view/dot/56185/dot_56185_DS1.pdf.

[13] **F. F. Pozo-Lora**, Z. Benson, M. Maguire, A. D. Sorensen, M. Haling, and P. J. Barr, "Bond performance of 1.125 inch diameter prestressing strands," Rutgers University. Center for Advanced Infrastructure and Transportation, Tech. Rep. CAIT-UTC-NC51, 2020. [Online]. Available: https://rosap.ntl.bts.gov/view/dot/55533/dot_55533_DS1.pdf.

[14] **F. Pozo-Lora** and M. Maguire, "Thermal bowing testing of precast concrete sandwich wall panels," Utah State University, Tech. Rep. UTC Report 01-2019, 2019. [Online]. Available: https://digitalcommons.usu.edu/cee_facpub/3621.

Journal Articles Under Review

1. Al-Yabati, M., Al-Rubaye, S., **Pozo-Lora, F. F.**, Bean, B., & Maguire, M. Exploring variations in design methods for the elastic design of insulated concrete wall panels. Submitted to Engineering Structures on 9/3/2024.
2. Tahat, M., **Pozo-Lora, F. F.**, Al-Rubaye, S., & Maguire, M. On the reliability of precast insulated wall panel horizontal shear limit state. Submitted to the Journal of Structural Engineering on 11/19/2024.
3. **Pozo-Lora, F. F.**, Awawdeh, A., Al-Rubaye, S., & Maguire, M. Development of a PCI standard test method for determination of performance of insulated wall panel wythe connectors. Submitted to the PCI Journal on 1/2/2025.
4. **Pozo-Lora, F. F.**, Maguire, M., Sorensen, A. D., Halling, M.W., & Barr, P. J. Experimental Evaluation of Transfer and Development Length of 28.6 mm Diameter Grade 1780 Strands in Normal Strength Concrete. Submitted to Construction and Building Materials on 2/12/2025. Preprint available: http://dx.doi.org/10.2139/ssrn.5162965
5. **Pozo-Lora, F.F.**, Al-Rubaye, S., Sorensen, T. J., & Maguire, M. State-of-the-art and Practice Review in Concrete Sandwich Wall Panels: Materials, Design, and Construction Methods. Submitted to MDPI Sustainability on 2/28/2025.
6. Ebrahim, Z., **Pozo-Lora, F. F.**, & Maguire, M. Investigating the potential of predicting field performance of commercially available rapid repair materials for concrete deck repair using experimental data. Submitted to the Journal of Structural Design and Construction Practice on 3/6/2025.

Conference and congress presentations

1. **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.
3. **Pozo-Lora, F. F.** (2019). Flexural Behavior of Continuous Non-Loadbearing Insulated Wall Panels. 2019 PCI/NBC, 15.

AWARDS AND HONORS

2022 **Outstanding Teacher:** Civil Engineering School, Universidad Iberoamericana, Dominican Republic.

2016 **Dominican Republic's Ministry of Higher Education, Science & Technology Scholarship:** Received $65,905 of merit-based funding to study a master's degree at USU.

RESEARCH GRANTS

1. **Development of a PCI Standard Test Method for Determination of Performance of Insulated Wall Panel Wythe Connectors (2019)**. Funded by the Precast Concrete Institute (PCI). PI: Marc Maguire. Budget: $147,000.
2. **Developing Safety Factors for Concrete Structures in the Dominican Republic (2019).** Funded by the Ministry of Education, Science and Technology of the Dominican Republic. PI: Manuel Taveras; Co-PI: Marc Maguire. Budget: $131,245.

SERVICE

Consulting Committee Member 2024 - Present
Precast Concrete Institute

· Consulting in the area of Precast Insulated Wall Panels (PIWPs).

Journal Peer Reviewer 2023 - Present

· ASCE: Journal of Bridge Engineering, Journal of Materials in Civil Engineering, Journal of Structural Design and Construction Practice.
· Elsevier: Engineering Structures.
· MDPI: Applied Sciences, Buildings, Infrastructures, and Sustainability.
· Taylor & Francis: Journal of Natural Fibers.

Research Proposals Reviewer 2022 - 2023
Ministry of Higher Education, Science and Technology of Dominican Republic

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

Vice-president 2023-2024
Dominican Republic Chapter – American Concrete Institute

· Organize continuing education activities for dissemination of knowledge of concrete.
· Translate or perform technical review for the "Concreto Latinoamerica" magazine.

- Article 2, August 2023 issue: `https://heyzine.com/flip-book/da725e4b0d.html#page/15`
- Article 6, September 2023 issue: `https://acimexico-snem.org/wp-content/uploads/2024/04/CONCRETO-LATINOAMERICA_SEPTIEMBRE-2023.pdf`
- Article 1, November 2023 issue: `https://acimexico-snem.org/wp-content/uploads/2024/05/CONCRETO-LATINOAMERICA_NOVIEMBRE-2023.pdf`

- Article 2, January 2024 issue: https://acimexico-snem.org/wp-content/uploads/2024/03/CONCRETO-LATINOAMERICA_ENERO-2024.pdf
- Article 3, June 2024 issue: https://acimexico-snem.org/wp-content/uploads/2024/03/CONCRETO-LATINOAMERICA_ENERO-2024.pdf

PROFESSIONAL MEMBERSHIPS

2022 Faculty Member of The Masonry Society.

2021 Member of the American Concrete Institute (1376516): Faculty Network.

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.)

TEACHING EXPERIENCE

Courses taught at the Pontificia Universidad Catolica Madre y Maestra (PUCMM), Universidad Autonoma de Santo Domingo (UASD), and Universidad Iberoamericana (UNIBE) displayed in alphabetical order. The typical load was about 3-6 courses per term, 3 times per academic year.

1. Bridge Design: Once at PUCMM
2. Formwork Systems: Once at UNIBE
3. Mechanics of Deformable Solids I: Four times at UNIBE
4. Mechanics of Deformable Solids II: Once at UNIBE
5. Numerical Methods: Once at UASD (graduate level)
6. Reinforced Concrete I: Once at UNIBE
7. Reinforced Concrete II: Once at PUCMM
8. Structural Analysis I: Four times at PUCMM and once at UNIBE
9. Structural Analysis II: Twice at PUCMM and once at UNIBE
10. Structural Dynamics: Once at PUCMM

SOFTWARE

Software	AutoCAD, REVIT, ETABS, SAFE, SAP2000, Eriksson Wall, LaTeX
Programming	Python, **R**, Excel VBA
Computation	MATLAB, MathCAD, Smath Studio

LANGUAGES

Spanish	Native
English	Fluent
Portuguese	Elementary proficiency