

# GABRIELA YÁÑEZ GONZÁLEZ

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## Education

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**Ph.D. student**, Civil Engineering, Specialization in Structural Engineering Aug 2021 – Present  
*University of Nebraska – Lincoln* Lincoln, NE  
GPA: 3.21

**Bachelor of Science in Civil Engineering** Aug 2016 – May 2021  
*University of Puerto Rico – Mayagüez* Mayagüez, PR  
Major GPA: 3.42  
Scholarship: Program for Engineering Access, Retention and LIATS Success (ePEARLS)

## Research Experience

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**Graduate Research Assistant** under Dr. Christine E. Wittich Aug 2021 – Present  
*Department of Civil and Environmental Engineering, University of Nebraska – Lincoln* Lincoln, NE

### *Scaled shake table tests validation of flexible rocking structures with variable material interfaces*

- Ran tests to identify the natural frequency of various test models, and compared experimental tests to numerical models

### *Practices leveraging social media data for emergency preparedness and response*

- Helped in the creation of a synthesis report for the National Cooperative Highway Research Program (NCHRP).

### *Examining the vulnerability and recovery of small farms to natural hazards and the impact to rural community resilience*

- Participated in this Disaster Resilience Research Grant (DRRG) project funded by NSF by helping create a survey to be distributed.

**Research Assistant** under Dr. Daniel Rodríguez Román Mar 2020 – May 2021  
*National Institute for Congestion Reduction, University of Puerto Rico – Mayagüez* Mayagüez, PR

### *Enhancing Equity and Access*

- Created in QGIS a map of demographical data for the distribution analysis of e-scooters in Mayagüez, P.R.
- Organized Census information tables and merged them with shapefiles for visual representation and analysis.

**Research Affiliate** under Dr. Christine E. Wittich Jun 2019 – Aug 2019  
*2019 Summer Research Program, University of Nebraska – Lincoln* Lincoln, NE

### *Resilience of Rural Infrastructure: Shake Table Tests of Scaled Silos*

- Analyzed the effect of the geometry and material flexibility in the response of free-standing structures to seismic loads.
- Ran 1,800 seismic tests on 9 modeled structures and analyzed their response.

## Teaching Experience

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**Graduate Teaching Assistant**, Geometric Control Systems Lab (CIVE 102) Aug 2022 – Dec 2022  
*Department of Civil and Environmental Engineering, University of Nebraska – Lincoln* Lincoln, NE  
Under Dr. Matthew Williamson

- Guided lessons on the proper use of surveying equipment and the analysis of data collected.

**Graduate Teaching Assistant**, Geometric Control Systems Lab (CIVE 221) Aug 2021 – Dec 2021  
*Department of Civil and Environmental Engineering, University of Nebraska – Lincoln* Lincoln, NE  
Under Dr. Richard L. Wood and Dr. Matthew Williamson

- Aided lessons on the proper use of surveying equipment and the analysis of data collected.
- Responsible for the homework's answer key and the assessment of quizzes.

## Publications

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Wittich, C.E., Yáñez González, G., (2023). Leveraging Social Media Data for Emergency Preparedness and Response. *National Academies of Sciences, Engineering, and Medicine*. Washington, DC: The National Academies Press. <https://doi.org/10.17226/27151>.

Rodríguez-Román, D., Camacho Bonet, A.G., Yáñez González, G., Acosta Pérez, F.A., del Valle González, C.A., Colucci-Ríos, B., & Figueroa-Medina, A.M. (2022). Travel patterns and spatial access in a dockless e-scooter service in Puerto Rico. *Case Studies on Transport Policy*. <https://doi.org/10.1016/j.cstp.2022.03.005>

Wang, C., Moore, K.J., Yáñez González, G., Wittich, C.E. (2022). Energy isolation in a multi-floor nonlinear structure under harmonic excitation. *Nonlinear Dynamics*. <https://doi.org/10.1007/s11071-022-07744-5>

## Conference Proceedings

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Rodríguez-Román, D., Camacho Bonet, A.G., Yáñez González, G., Acosta Pérez, F.A., Villa Zapata, L., del Valle Gonzalez, C.A., Colucci-Ríos, B., and Figueroa-Medina, A.M. (2021). User characteristics, spatiotemporal patterns, and spatial access in a dockless e-scooter service in Puerto Rico. 100th Annual Meeting of the Transportation Research Board, Washington, D.C.

## Oral Presentations

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Yáñez González, G., Ahmadi, Y. Lather, J., Wittich, C.E. (2022). Planning for Riverine/Inland Waterway Flood Disaster Resilience: Current and Future Trends. Nebraska Annual Planning Conference, Lincoln, NE

Yáñez González, G., Reyes Cruz, C.A., Villa Zapata, L.M., Rodríguez-Román, D., del Valle González, C.A., Colucci-Ríos, B., & Figueroa-Medina, A.M. (2021). Enhancing Equity and Access in Transportation Services. UPRM Research Fair, Mayagüez, PR

## Poster Presentations

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Yáñez González, G., Saifullah, M.K., Wittich, C.E. “Resilience of Rural Infrastructure: Shake Table Tests of Scaled Silos” Conference for Undergraduate Women in Physical Sciences (WoPhyS), Lincoln, NE, November 2019

Yáñez González, G., Saifullah, M.K., Wittich, C.E. “Resilience of Rural Infrastructure: Shake Table Tests of Scaled Silos” UNL Summer Research Symposium, Lincoln, NE, August 2019

## Skills

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*Software/Programming:* AutoCAD Civil 3D, MATLAB, Python, RISA, SAP2000, SolidWorks, QGIS, ArcGIS and NISignalExpress

*Personal:* Fully bilingual in Spanish and English

## Honors and Awards

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William Averette Anderson Fund Fellowship	2023 – Present
Chancellor’s Fellowship, University of Nebraska – Lincoln	2021 – 2023
Program for Engineering Access, Retention and LIATS Success (ePEARLS)	2018 – 2021
Hispanic Scholarship Fund	2020 – 2021
ASCE Region 5 Civil Engineering Student of the Year	2020

## Certifications

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Fundamentals of Engineering exam

30 Hour Construction Safety and Health, Occupational Safety and Health Administration (OSHA)

Responsible Conduct of Research for Engineers – Stage 1, Collaborate Institutional Training Initiative (CITI)

## Leadership Experience

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**Graduate Student Representative** Sept 2023 – Present  
*Communications and Outreach Committee, Department of Civil and Environmental Engineering at UNL*

- Represent the voice and opinion of graduate students towards outreach efforts of the UNL CEE Department.
- Aid in the creation of content and publications for the Departments’ social media accounts.

**Co-Founder and Outreach Coordinator** Mar 2020 – Present  
*Girls in Civil (GIC), Online*

- Create presentations and resources on different STEM topics for K-12 and college students and coordinate school visits.

**President** Aug 2020 – May 2021  
*Engineering Faculty Student Council (CEFI), University of Puerto Rico – Mayagüez*

- In charge of presiding all meetings and assemblies of this student body.
- The representative of the Student Council the Engineering Faculty meetings.
- A representative at the General Student Body Council.

**Civil Engineering Alderman** Aug 2019 – May 2021  
*Engineering Faculty Student Council (CEFI), University of Puerto Rico – Mayagüez*

- Civil engineering student representative in the engineering faculty student council.

**Secretary** Dec 2020 – Jul 2021  
*American Society of Civil Engineers (ASCE) Puerto Rico Section*

- In charge of creating minutes of the meetings, keeping track of the calendar, and managing and organizing the chapter's correspondence. As well as sending official newsletter and communications to the members.

**UPRM Student Chapter Representative** Dec 2019 – May 2020  
*American Society of Civil Engineers (ASCE) Puerto Rico Section*

- Served as the contact point between the student chapter and the section. Represent the ASCE-UPRM student chapter in the directive board.

**President** Jun 2019 – May 2020  
*American Society of Civil Engineers (ASCE) UPRM Student Chapter*

- In charge of leading meetings of the Directive Board, scheduling workshops, activities, seminars, and keeping track of the Service and Outreach Committees.

**Documents Manager** May 2017 – May 2019  
*American Society of Civil Engineers (ASCE) UPRM Student Chapter*

- In charge of creating minutes, organizing the chapter's calendar, and all the correspondence.
- Organized the chapter's 2017 and 2018 Annual Report.

**President** Aug 2018 – Aug 2019  
*Asociaciones de Ingeniería Civil y Agrimensura (AICA)*

- Organize different activities to maintain open dialogue and harmony between the different Civil Engineering and Surveying student chapters of the department.

## **Volunteer Experience**

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**CEE Activity Volunteer** Spring/Fall 2023  
*Discover Engineering Days, UNL College of Engineering*

- Had the opportunity to participate and lead middle school and high school students in different civil and environmental engineering outreach activities.

**COE Booth Volunteer**

Oct 2022

*WE22 Career Fair, Society of Women Engineers (SWE) 2022 Conference*

Houston, TX

- Had the opportunity to participate in the WE22 Career Fair of the 2022 SWE Conference representing the UNL College of Engineering information booth.

**Volunteer Pen Pal**

Aug 2020 – Present

*Pen Pal Program, Letters to a Pre-Scientist*

- Had the opportunity to correspond with different students all over the U.S. and motivate them to pursue a career in STEM.

**Judge**

May 2022

*2022 National Student Steel Bridge Competition, Virginia Tech*

Blacksburg, VA

- Volunteer Judge for the lateral loading portion of the competition.

**Member**

Aug 2016 – May 2021

*Service Committee, ASCE-UPRM Student Chapter*

Mayagüez, PR

- Participated and organized many food drives, beach clean-ups, outreach activities for kids, and many more activities.

**Field Reconnaissance Experience**

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**Research Assistant** – Wittich Research Group, UNL

Oct 2022

*Wind Damage Inspections, Iowa, US*

- Performed visual inspections of damaged agricultural structures, focusing on steel grain bins, affected by the August 2020 Derecho.
- Documented field observations, measurements, and findings in reports including photographs and written descriptions.

**Volunteer** – Colegio de Ingenieros y Agrimensores de Puerto Rico (CIAPR) – Mayagüez Chapter Feb 2020*Earthquake Damage Inspections, Maricao, P.R.*

- Performed visual inspections to residential homes affected by earthquake events of January 2020.
- Documented field observations, measurements, and findings in reports including photographs and written descriptions.

**Volunteer** – ASCE – PR Section and CIAPR – Mayagüez Chapter

Jan 2020

*Earthquake Damage Inspections, Lajas, P.R.*

- Performed visual inspections to residential homes affected by earthquake events of January 2020.
- Documented field observations, measurements, and findings in reports including photographs and written descriptions.

## **Extracurricular Experience**

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**Captain, ASCE-UPRM Competitions Team** – UPRM ASCE Student Chapter      Nov 2019 – Mar 2020  
*2020 ASCE Southeast Regional Conference, University of Central Florida*

- Led and motivated the selected competition team of 40 students and oversaw their progress.
- Due to COVID-19 the conference was cancelled, and competitions were held virtually. Chapter placed 1<sup>st</sup> overall.

**Team Captain, Concrete/Steel Golf** – UPRM ASCE Student Chapter      Nov 2019 – Mar 2020  
*2020 ASCE Southeast Regional Competition, University of Central Florida*

- Modeled and 3D printed round molds for the balls, designed the mix, and constructed the steel club from leftover Chromoly steel. Result was able to withhold in play during a putt-putt and chipping contest.
- Due to the COVID-19 pandemic, the competition was canceled.

**Team Member, GeoWall Challenge** – UPRM ASCE Student Chapter      Nov 2019 – Mar 2020  
*2020 ASCE Southeast Regional Conference, University of Central Florida*

- Helped design and build a model mechanically stabilized earth (MSE) retaining wall using paper reinforcement taped to a poster board wall facing able to withhold the loads with little to no deflection. Optimized the construction method and construction time of the wall.
- Due to the COVID-19 pandemic, the testing portion of the competition was canceled. However, we were judged based on the technical report of the project. The project placed 9th.

**Team Member** – UPRM Steel Bridge Team      Jun 2018 – May 2019  
*2019 Student Steel Bridge Competition*

- Helped design an efficient 1:10 scale, lightweight, steel bridge; able to withstand a weight of 2,600 lbs.
- Designed the bridge connections in SolidWorks and the blueprints of the bridge in AutoCAD.
- Project placed 1<sup>st</sup> Overall at Southeast Regional Conference, 5<sup>th</sup> at US Nationals, and 4<sup>th</sup> at Canadian Nationals.

**Team Captain, Hack My Infrastructure** – UPRM ASCE Student Chapter      Nov 2018 – Mar 2019  
*2019 ASCE Southeast Regional Conference, University of Tennessee*

- Led a small team to design, build and program an electronic flow measuring system able to measure flow, velocity, and slope of running water in a laboratory flume. Project placed 4th. Chapter placed 1st Overall.

**Team Member, GeoWall Challenge** – UPRM ASCE Student Chapter      Nov 2018 – Mar 2019  
*2019 ASCE Southeast Regional Conference, University of Tennessee*

- Helped design and build a model mechanically stabilized earth (MSE) retaining wall using (craft) paper reinforcement able to withhold the loads with little to no deflection. Optimized the construction method and construction time of the wall. Project placed 6th.

**Team Member, Horseshoe Hoedown** – UPRM ASCE Student Chapter Nov 2017 – Mar 2018  
*2018 ASCE Southeast Regional Conference, University of Florida*

- Helped design and build a resistant concrete horseshoe that met all the given specifications and could be used to play by being thrown 30 feet into a steel rod. Also participated in writing the Technical Paper for this project. Project placed 3rd.

**Team Member, Wilderness Water** – UPRM ASCE Student Chapter Nov 2017 – Mar 2018  
*2018 ASCE Southeast Regional Conference, University of Florida*

- Helped design and build a leachate liner out of common materials (such as plastic bags, cotton pads, playing cards, etc.) to prevent water from filtering.

**Team Member, Service Activity** – UPRM ASCE Student Chapter Nov 2016 – Mar 2017  
*2017 ASCE Southeast Regional Conference, Florida Atlantic University*

- Helped build a runoff control and agricultural education zone for a down syndrome center called “Salón Angelitos de Amor” in Rincón, P.R. Also participated in writing the technical paper for this project.