

# Bryan C. Busby

bryan.busby@upr.edu | bryanbusbygit.github.io

## EDUCATION

B.Sc. in Pure Mathematics, University of Puerto Rico, UPR Mayagüez

Expected 2027

## RESEARCH EXPERIENCE

Villanova University (REU) – Advisor: Alexander Díaz-López	2025–present
Collaborated with other undergraduates. We studied arithmetical structures on graphs. In particular, structures on cycles with multi-edges. Manuscript in preparation.	
UPR Mayagüez – Advisor: Omar Colón-Reyes	2024–present
Research on transient length bounds for Boolean monomial systems using graph-theoretical tools (walks, Frobenius number). Manuscript in preparation.	
UPR Mayagüez (CARSE) – Advisor: Rafael Rodríguez Solís	2023
Analyzed instrument tolerance effects on 5G propagation measurements. Learned how difficult debugging software to hardware communication can be on GNU Radio.	
High School, CROEM – Advisor: Edwin Benvenutti	2021
Independent research on the powers of adjacency matrices and its relation to walks along graphs.	

## MANUSCRIPTS IN PREPARATION

Arithmetical Structures on Cycles with a multi-edge (with Alexander Díaz-López)  
Transient Length Boundary for Finite Dynamical Systems (with Omar Colón-Reyes)

## PRESENTATIONS

<i>Arithmetical Structures on Cycles with a multi-edge</i> – MAA MathFest, Sacramento, CA	Aug 2025
<i>Finite Dynamical Systems: Transient Bounds for Boolean Monomial Systems</i> – SIDIM (PR Interdisciplinary Mathematics Symposium), UPR Ponce	May 2024
<i>Development of Radio Wave Propagation Setup and Propagation Measurements at 5G Bands</i> – UPR Mayagüez	2023
<i>On the Adjacency Matrix and Walks</i> – Regional Math Fair (PR Dept. of Education)	2021

## TEACHING EXPERIENCE

Private Mathematics Tutor	2022–present
Provided one-on-one tutoring at the high school and early undergraduate level. Accumulated over 100 hours of tutoring experience.	

## EMPLOYMENT

Food Server, Mayagüez Resort & Casino, Mayagüez, PR	2025–present
Food Server, Romano's Macaroni Grill, Mayagüez Mall, PR	2023–2024

## **LANGUAGES**

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Spanish (native); English (fluent).