Bryan C. Busby

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EDUCATION

B.Sc. in Pure Mathematics, University of Puerto Rico, UPR Mayagüez   Expected 2027

RESEARCH EXPERIENCE

Researcher, 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.

Researcher, 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.

Researcher, 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 Researcher, 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

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

EMPLOYMENT

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

LANGUAGES

Spanish (native); English (fluent).