

ALEC S. ZABEL-MENA

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EDUCACIÓN

Universidad de Puerto Rico, Recinto de Río Piedras
Maestría en Ciencias en Matemáticas Puras

agosto 2022 – diciembre 2025 (Esperado)

Universidad de Puerto Rico, Recinto de Río Piedras
Bachillerato en Ciencias en Matemáticas Puras
Concentración Menor en Ciberseguridad

agosto 2016 – junio 2022

OBJETIVO

To become an academic researcher and professor. Aiming to research both pure and applied mathematics; specifically research in algebraic geometry, coding theory, and other areas of discrete mathematics.

INTERESES DE INVESTIGACIÓN

- Álgebra Conmutativa
- Geometría algebraica
- Cuerpos Finitos
- Teoría de Grafos y Combinatoria
- Teoría de Matroides
- Teoría de Categorías y Teoría de Tipos

PUBLICACIONES

1. Agrinoni, C.A., Janwa, H., Zabel-Mena, A.S. *Absolute Irreducibility of Generalized Trinomials Defined by APN Functions of The Form $g(x) = 2^{2^i} + h(x)$ over \mathbb{F}_{2^s}* . Springer Proceedings in Mathematics & Statistics, (To be submitted). 2025.

CHARLAS, SEMINARIOS, E COLOQUIOS

1. Zabel-Mena, A.S., Janwa, H. Agrinoni, C.A. *Absolute Irreducibility of Generalized Trinomials Defined by APN Functions of The Form $g(x) = 2^i + h(x)$ over \mathbb{F}_{2^s}* (Contributed Talk). 40th Seminario Interuniversitario de Investigación en Ciencias Matemáticas (SIDIM), Ponce P.R. 2025.
2. Zabel-Mena, A.S., Janwa, H. Agrinoni, C.A. *An Efficient Implementation and Analysis Of Zeta Functions Of APN Curves and Their Protograph LDPC Codes* (Contributed Talk). 39th Seminario Interuniversitario de Investigación en Ciencias Matemáticas (SIDIM), Humacao P.R. 2024.
3. Zabel-Mena, A.S., Janwa, H. Agrinoni, C.A. *An Efficient Implementation and Analysis Of Zeta Functions Of APN Curves and Their Protograph LDPC Codes* (Poster Session). Forward Research and Innovation Summit, San Juan P.R. 2023.

GRANTS E PREMIOS

PR Space Grant Fellowship and Scholarship Program, NASA
Grant No. 80NSSC20M0052

August 2024 – May 2025

Research Assitanship, NASA
Grant No. 80NSSC20M0052

January 2024 – May 2024

Research Assitanship, NASA
Grant No. 80NSSC20M0052

August 2023 – December 2023

PR Space Grant Fellowship and Scholarship Program, NASA
Grant No. 80NSSC20M0052

August 2022 – May 2023

ENSEÑANZA

Proyecto Tutorías DECEP

2020-2021

Universidad de Puerto Rico, Recinto de Río Piedras
Tutor de Matemáticas

Conducted assessments to identify the educational needs of my students and developed individualized learning plans.

Tasked with providing tutoring services to seven high school students for 10 hours a week in the subjects of Algebra and Pre-Calculus.

Trabajo Independiente

2019-2021

Tutor de Matemáticas

Evaluated students learning styles and provided appropriate techniques for maximizing understanding and minimizing frustration.

Simplified math concepts while coaching students to think critically when problem solving; eventually introducing them to axiomatic systems within mathematics.

Provided tutoring one-on-one to five highschool students in the subjects of Algebra, Pre-Calculus, and Geometry for two times a week, at two hours for each session.

AFFILIACIONES

Consejo General de Estudiantes (UPRRP)

August 2024 – May 2025

Representante ante el Consejo de Estudios Graduados e Investigación

Consejo de Estudiantes de Ciencias Naturales (UPRRP)

August 2024 – May 2025

Representante ante el Decanato de Estudios Graduados e Investigación
Resigned from post.

Asociación Estudiantil de Matemáticas (AeMAT)

August 2019 – Present
August 2025 – May 2026

Treasurer

Post yet to be assumed.

Treasurer

August 2022 – May 2024

Asociación de Estudiantes de Ciencias de Computos (AECC)

August 2025 – May 2026

Lembrança Negra Capoeira

2017 – 2019

Corda Crua-Verde

Senzala Capoeira (Sou Capoeira)

2019 – Present

Corda Crua-Laranja

DESTREZAS

Languages

Inglés

Español

Portugués

Software

L^AT_EX – software para componer documentos profesionales e científico

C – lenguaje de programación

SAGE – software para hacer matemáticas

nix – Lenguaje de configuración declarativa de sistemas de computadoras