Alejandro Ginory

Department of Mathematical Sciences
The University of Alabama in Huntsville
a.ginory@uah.edu

Education

Rutgers University, New Brunswick, NJ

Ph.D., Mathematics, May 2019

- Dissertation: *On Two Problems in Representation Theory: Fusion Algebras for Twisted Affine Lie Algebras and Jack Polynomial Identities*
- Advisor: Siddhartha Sahi, Ph.D

Florida International University, Miami, FL

B.S., Mathematics, December 2011

Teaching Experience

Lecturer Spring 2023 - present
Department of Mathematical Sciences, UAH

Assistant Teaching Professor Fall 2020 - Fall 2022
Department of Mathematics, Rutgers University

Some Courses Taught:

- Calculus I or Calculus A
- Calculus II or Calculus B
- Multivariable Calculus (Cal III or Cal C)
- Ordinary Differential Equations
- Intro to Linear Algebra
- Linear Algebra
- Algebraic Structures
- Introduction to Math Reasoning
- Intro to Number Theory
- Intro to Graph Theory
- Introduction to Mathematical Probability
- Applied Linear Algebra (graduate level)

Instructor, Rutgers Young Scholars Program, Rutgers University
Number Theory and Cryptography Courses July 2017-2023

Service

- Calculus Coordinator at UAH (Summer 2023 - present)
- Director of Math Help Center (tutoring center serving all of Rutgers, 2022)
- Member of the Rutgers P2C2 program (proposing and implementing evidence-based teaching techniques for courses from Precalculus to Calculus 2, 2021-2022)
- Calculus II Coordinator (Summer 2021)

Mentoring

Directed Reading Program, Rutgers University.
Topics: Associative Algebras, Experimental Mathematics and Lie Algebra Characters, Representation theory of finite groups, Differential Geometry and Category Theory

Aresty Undergraduate Research Program, Rutgers University — Fall 2015, Spring 2016
Topic: Integration over Compact Matrix Groups

DIMACS REU, Rutgers University — Summer 2013
Topic: Knot Theory and Link Homology

Research Interests

Representation theory, combinatorics, Lie theory, non-commutative algebra, vertex operator algebras, symmetric functions, machine learning

Computer Programming

Python: scikit-learn, numpy, pandas, etc.; Mathematica; Maple; MATLAB; Java

Papers

- A. Ginory and J. Kim, **Weingarten Calculus and the IntHaar Package for Integration over Compact Matrix Groups**, 2019. (Journal of Symbolic Computation)

Presentations and Talks

Some Talks

- *Some Positivity Conjectures for Jack Polynomials*
  CAGE: Philadelphia Area Combinatorics and Alg. Geometry Seminar, Philadelphia, PA — Oct 2019
- *Fusion Algebras and Twisted Affine Lie Algebras*
  Geometric Methods in Rep. Theory Seminar, UNC - Chapel Hill — Nov. 16, 2018
- *Visualizing Mathematical Reasoning: A Diagrammatic Approach*
  MAA MathFest 2017, Chicago, IL — July 2017
- *Double Affine Weyl Groups and Modular Invariance*
  Am.Math.Soc. (AMS) Chapter Seminar, Stony Brook University — Mar 2017
- *Symmetric Functions and Knop-Sahi Polynomials*
  Florida International University Summer Colloquium — July 2015