JOSÉ J. GARCIA

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EDUCATION

University of New Mexico, Albuquerque, NM *Expected Graduation May 2026*
Doctor of Philosophy in Mathematics
Member of the Pi Mu Epsilon, and American Mathematical Society

Grand Valley State University, Allendale, MI *Graduated May 2020*
Bachelor of Science in Mathematics
Member of the Pi Mu Epsilon, SACNAS, Mathematial Association of America,
American Mathematical Society, and the GVSU Math & Stats Club.

Grand Rapids Community College, Grand Rapids, MI *Graduated May 2017*
Associate of Arts.
President of Student Alliance

SCHOLARSHIPS AND FELLOWSHIPS

CTL Graduate Teaching Scholars Program August 2023 - May 2024
UNM Center for Taching and Learning/ UNM office of Graduate Studies
University of New Mexico
$1000

Regents Winrock Minority Fellowship August 2020 - April 2022
UNM Graduate Studies
University of New Mexico
$40000

APEX Fellowship August 2020 - April 2021
UNM El Centro de la Raza
University of New Mexico
$1000

Alayont Fellowship August 2019 - April 2020
Office of Undergraduate Research and Scholarships
Grand Valley State University
$4000

McNair Stipend May 2019 - July 2019
McNair Scholars Program
Grand Valley State University
$4000

Research Stipend August 2018 - April 2019
Center for Undergraduate Research in Mathematics
Occidental College
$3000

MiCUP Stipend May 2017 - June 2017
MiCUP Scholars Program
Michigan Technological University
$2000

AWARDS AND DISTINCTIONS

UNM Mathematics and Statistics - Outstanding Gradaute Student in Teaching April 2023

Mathematics Department Senior Award at Grand Valley State University April 2020

GVSU Undergraduate Research Scholar at Grand Valley State University April 2020

Outstanding Poster Award at The Joint Mathematics Meeting January 2019

Dean's List at Grand Valley State University Winter 2018, Winter 2019, Fall 2019

President's List at Grand Rapids Community College Winter 2015, Fall 2015

Dean's List at Grand Rapids Community College Fall 2011, Winter 2014, Summer 2014, Summer 2016, Winter 2017

RESEARCH EXPERIENCE

UNM - Research Assistant May 2023 - Present
Center for Integrated Nanotechnologies User

Investigate composite operators that provide information about tight binding models. Such information can include joint eigenvalues and eigenvectors as well information on perturbations to a system.

Regents Winrock Minority Doctoral Fellowship August 2020 - April 2022
Regents Winrock Minority Fellow

Investigate algorithms for computing Floquet Hamiltonians of systems with time reversal and chiral symmetries.

Alayont Fellowship, OURS at GVSU August 2019 - April 2020
Alayont Fellow

Investigation into guessing games with two unknowns and one lie. Funding provided by the Office of Undergraduate Research and Scholarships at Grand Valley State University.

McNair Scholars Program, OURS at GVSU May 2019 - July 2019
McNair Scholar and Researcher

Investigated domination on planar graphs with automated conjecture making as a tool. Funding was provided by McNair and the Office of Undergraduate Research and Scholarships at Grand Valley State University.

Center for Undergrad Research in Mathematics, CURM at OC August 2018 - April 2019
Research Collaborator

Investigated Stirling numbers of the second kind for star graphs denoted as $F_{p,\ell}^d$. Funding was provided by the Center for Undergraduate Research in Mathematics at Occidental College in California.

MiCUP Scholars Program, at MTU May 2017 - June 2017
Research Collaborator

Investigated and updated the poling oven for the optoelectric devices that where being developed by the graduate students. Funding was provided by the MiCUP Scholar Program at Michigan Technological University.

ORAL AND POSTER PRESENTATIONS

Composite Operators, Joint Approximate Eigenstates, and Applications to Physics
Upcoming - October 4, 2024
University of New Mexico   *Oral Presentation*

Mathematical Analysis Seminar.

A Composite Operator Approach to Non-Hermitian Physics   September 11, 2024
Sandia National Laboratories   *Poster/Virtual/Oral Presentation*

Recent results on composite operator approach to non-Hermitian physics.

Composite Operator Approach to Non-Hermitian Physics   August 7, 2024
ORISE/DOE   *Oral Presentation*

Recent results on composite operator approach to non-Hermitian physics.

On the Spectral Variation of Almost Normal Matrices and it's Applications September 22, 2023
The University of New Mexico   *Oral Presentation*

Investigation on the spectral variation of almost normal matrices and it's applications.

An Operator Based Approach to Localized States in Non-Hermitian Systems   September 14, 2023
Sandia National Laboratories   *Poster/Virtual/Oral Presentation*

Pseudospectra, approximately localized states and non-Hermitian physics.

Computing Floquet Hamiltonians with Time Reversal Symmetry   July 27, 2022
Center for Integrated Nanotechnology at Sandia National Laboratories   *Oral Presentation*

Investigate algorithms for computing Floquet Hamiltonians of systems with time reversal and chiral symmetries.

Guessing Games - A bound for the Responder   December 5, 2019
Mathematics Department at Grand Valley State University   *Oral Presentation*

We investigate guessing games with two unknown numbers where the responder can lie at most one time. Specifically we provide a bound that must be met in order for a responder to win the game.

Automated Conjecture Making: Domination on Planar Graphs   December 5, 2019
Mathematics Department at Grand Valley State University   *Oral Presentation*

Communicated results for domination on planar graphs with automated conjecture making as a tool. Funding was provided by McNair and the Office of Undergraduate Research and Scholarships at Grand Valley State University.

Automated Conjecture Making: Domination on Planar Graphs   November 2, 2019
Undergraduate Mathematics Day at University of Dayton   *Oral Presentation*

Communicated results for domination on planar graphs with automated conjecture making as a tool. Funding was provided by McNair and the Office of Undergraduate Research and Scholarships at Grand Valley State University.

Automated Conjecture Making: Domination on Planar Graphs   September 5, 2019
Summer Scholars Showcase 2019 at Grand Valley state University   *Poster Presentation*

We communicate our final results on domination on planar graphs with automated conjecture making as a tool to the McNair Scholars program and the other undergraduate research programs funded by the Office of Undergraduate Research and Scholarship at Grand Valley State University.

Automated Conjecture Making: Domination on Planar Graphs   August 1, 2019
Mathematical Association of America at MathFest 2019   *Oral Presentation*

Investigated domination on planar graphs with automated conjecture making as a tool. Funding was provided by McNair and the Office of Undergraduate Research and Scholarships at Grand Valley State University.

Analysis on Children's Healing Center Population   August 1, 2019
Pi Mu Epsilon at MathFest 2019   *Oral Presentation*

On behalf of my group, I communicate our final results from PIC Math project.

Approaches to Stirling Numbers of Sunflower Graphs   April 18, 2019
Grand Valley State University Mathematics Department   *Oral Presentation*

We communicate our final results to the GVSU Mathematics Department. Specifically we talk about different mathematical techniques we discovered and also came up with to find graphical Stirling numbers.

Membership and Children's Healing Center   April 18, 2019
Grand Valley State University Mathematics Department   *Oral Presentation*

We communicate our final results from our semester project based math course. We look at data from the Children's healing center in Grand Rapids, and help them identify their membership demographics, and what they can do to grow intelligently.

Stirling Numbers for Sunflower Graphs   April 13, 2019
Midwest Undergraduate Mathematics Symposium   *Oral Presentation*

At the Midwest Undergraduate Mathematics Symposium we talk about our most recent results on graphical Stirling numbers. Specifically we use both the idea of proper graph colorings and recursion relations to find the Stirling numbers of a Sunflower Graph.

Stirling Numbers for Sunflower Graphs   January 18, 2019
Mathematical Association of America at the Join Mathematics Meetings   *Poster Presentation*

We talk about the graphical Stirling numbers. Specifically how they relate to traditional Stirling numbers and we finalize with the idea of deletion/contraction of a graph.

Graph Stirling Numbers   December 6, 2018
Grand Valley State University Mathematics Department   *Oral Presentation*

We talk about preliminary results about graphical Stirling numbers, and present our results to the mathematics department.

On the Origin of Numbers   April 20, 2017
Grand Rapids Community College Mathematics Department   *Oral Presentation*

The talk mentions historical development of numerical nomenclature and their different uses.

PROFESSIONAL DEVELOPMENT

2024 Groundwork for Operator Algebras Lecture Series   July 15 - July 27
University of California Los Angeles

The workshop provided graduate students with an accelerated introduction to the basics of operator algebras that is not often found in the typical Mathematics graduate coursework.

2023 Modern Mathematics Workshop   October 25 - October 26
Oregon Convention Center

The intention of the workshop was to strengthen the interactions between the harmonic analysis, partial differential equations, and probability communities.

2023 Potential Theory Workshop: Intersections in Harmonic Analysis, Partial Differential Equations and Probability   October 2 - October 6
Centro de Investigación en Matemáticas (CIMAT)

The intention of the workshop was to strengthen the interactions between the harmonic analysis, partial differential equations, and probability communities.

Responsible Conduct of Research   Fall 2022
The University of New Mexico

The training consisted of research ethics across curriculum in mathematics.

Careeer Paths in the Mathematical Sciences   June 6, 2019 - June 7, 2019
IMA/Math Alliance Workshop at the University of Minnesota

The workshop consisted of plenary lectures, panel discussions, active-learning modules and networking opportunities.

Embracing and Maximizing Feedback   June 17, 2019
McNair Scholars Program at Grand Valley State University

The workshop focuses on learning how to identify and take feedback with Dr. Lauren Keough.

How to Build Mentor Networks   June 17, April 2019
McNair Scholars Program at Grand Valley State University

The workshop focuses on learning how to identify and seek out academic and nonacademic mentors as well as becoming a mentor with Dr. Jae Basiliere.

Work-life Balance in Graduate School   June 24, 2019
McNair Scholars Program at Grand Valley State University

Professional development workshop focused on balancing work and Life with Dr. Jae Basiliere.

WORK AND TEACHING EXPERIENCE

Research Assistant   August 2024 - Present
The University of New Mexico

MEISPP Internship   May 2024 - August 2024
Oakridge Institute for Science and Education

Minority Educational Institution Student Partnership Program (MEISPP) Research Assistant.

Math 1512 - Calculus I   August 2023 - December 2023
The University of New Mexico

Instructor of Record.

Math 375 - Grader   August 2023 - December 2023
The University of New Mexico

Grader for Introduction to Numerical Computing.

TA-Seminar   August 2023 - December 2023
The University of New Mexico

Co-led recitation for teaching assistants starting off in the Calculus sections offered in The University of New Mexico.

Math 1522 - Calculus II   January 2023 - May 2023
The University of New Mexico

Instructor of Record.

Teaching Assistant - Mathematics   August 2022 - December 2022
The University of New Mexico

Running Recitation for Calculus II as well as Instructor of record for the course in the Spring of 2023.

Grader - Mathematics   August 2020-December 2022
The University of New Mexico

Course Grading for Mathematics Department at UNM.

GEARUp Tutor - Mathematics   December 2019 - April 2020
Grand Rapids Community College

Provided in class tutoring to underrepresented middle school students in various schools as part of the GEARUp program.

Professional Tutor - Mathematics   September 2015 - August 2018
Grand Rapids Community College

Provided one-on-one and group tutoring. Gave weekly updates to Supervisor and attended training sessions and workshops.

Orientation Ambassador   May 2018 - August 2018
Grand Rapids Community College

Assisted students signing up for classes, as well as provided information on College resources.

Tutor - TRiO Upwardbound   June 2018 - July 2018
Grand Valley State University

Planed activities for students in the summer program as well as tutored students in mathematics, physics and Spanish.

Tutor - Cruisin' to College   June 2018 - August 2018
Grand Rapids Community College

Tutored high school students in entry level college math courses.

Various Companies   2005-2016
Grand Rapids Community College

Tutored high school students in entry level college math courses.

SERVICE

URInspiration/URInspiración, ASU, UNM, FIU   April 5 2023
Moderator and Evaluator - Spanish/Español

2023 UNM Teaching Conference   March 22, 2023
Humanizing Math Education - Panelist

UNM McNair Program   October 2022 - Present
Volunteer-Panelist

Once a year.

Math In Action Conference, GVSU   February 23 2019
Volunteer

Grand Rapids Community College   September 2016 - September 2020
Volunteer Mathematics Tutor

NOTABLE SKILLS

Software	Inventory, Microsoft Office Suite, LaTex
Programming	Visual BASIC, Python, Mathematica, FORTRAN, zsh/bash, Matlab
Mathematics	Tutoring, Research Methodology, Mentoring
Other	Leadership, Mentoring, Delegation, Bilingual (Spanish)