

Emanuel Casiano-Diaz

Physics PhD Student

University of Tennessee
1408 Circle Drive
Knoxville, TN, USA 37996
☎ (939)207-8233
✉ ecasiano@vols.utk.edu
📄 [ecasiano.github.io](https://github.com/ecasiano)



Education

- Present **PhD (Physics)**, *University of Tennessee, Knoxville.*
Advisor: Dr. Adrian Del Maestro
- 2019 **M.S. (Physics)**, *University of Vermont.*
Advisor: Dr. Adrian Del Maestro
- 2015 **B.A. (Physics)**, *University of Puerto Rico, Rio Piedras.*

Research Experience

- 2021 **Graduate Research Assistant**, *Los Alamos National Lab, Los Alamos, NM.*
- 2020 **Graduate Research Assistant**, *University of Tennessee, Knoxville, TN.*
- 2019 **Graduate Research Assistant**, *University of Vermont, Burlington, VT.*
- 2014 **NSF-REU Summer Researcher**, *Lehigh University, Bethlehem, PA & Helmut-Schmidt University, Hamburg, Germany.*

Teaching Experience

- 2016 **Graduate Teaching Assistant**, *University of Vermont, Burlington, VT.*
- 2015 **Math Teacher**, *Emadrian Bilingual School, Bayamon, Puerto Rico.*

Introduction to Programming Tutor, *University of Puerto Rico, Rio Piedras.*

Papers

- 2022 **PIGSFLI: A Path Integral Ground State Monte Carlo Algorithm for Entanglement of Lattice Bosons**, *Emanuel Casiano-Diaz, Chris M. Herdman, Adrian Del Maestro, ArXiv.*

- 2019 **Operationally accessible entanglement of one-dimensional spinless fermions**, *Hatem Barghathi, Emanuel Casiano-Diaz, Adrian Del Maestro*, Physical Review A.
- 2017 **Particle partition entanglement of one dimensional spinless fermions**, *Hatem Barghathi, Emanuel Casiano-Diaz, Adrian Del Maestro*, Journal of Statistical Mechanics: Theory and Experiment.

Talks & Posters

- 2022 **Operationally Accessible Entanglement in the 1D Bose-Hubbard Model**, *APS March Meeting*, Virtual, March 15.
- 2021 **Quantum Monte Carlo Results for Rényi Entanglement Entropy in the Bose-Hubbard Model**, *APS March Meeting*, Virtual, March 16.
- 2020 **Measuring Rényi Entanglement Entropies in Lattice Worm Algorithm Quantum Monte Carlo**, *APS March Meeting*, Virtual, March 3.
- 2019 **Operationally accessible entanglement of one-dimensional spinless fermions**, *Grad Poster event and Innovation Celebration for CEMS*, University of Vermont, October 4.

Operationally accessible entanglement of one-dimensional spinless fermions, *International High Performance Computing Summer School*, RIKEN Center for Computational Sciences, Kobe, Japan, July 8.

- 2017 **Particle partition entanglement of one dimensional spinless fermions**, *NSF/DOE Quantum Science Summer School*, Johns Hopkins University, Baltimore, MD, June 9.
- 2014 **Characterization of Lithium Niobate Waveguides and Methods for Periodic Poling of Ferroelectrics**, *Physics Summer NSF-REU*, Lehigh University, Bethlehem, PA, July 30.

Awards

- 2019 **Detenback Physics Summer Research Award**, *University of Vermont, Burlington, VT*.
- 2018 **Detenback Physics Summer Research Award**, *University of Vermont, Burlington, VT*.

2018 **A.A.P.T. Outstanding Physics Teaching Assistant**, *University of Vermont, Burlington, VT.*

Courses taught

2019 **PHYS 256: Computational Physics**, *University of Vermont*, Fall, *Substituted the professor 3 times during the semester.

PHYS 031: Physics for Engineers I, *University of Vermont*, Spring.

2018 **PHYS 031: Physics for Engineers I**, *University of Vermont*, Fall.

PHYS 022: Introductory Lab II, *University of Vermont*, Summer.

PHYS 022: Introductory Lab II, *University of Vermont*, Spring.

2017 **PHYS 051: Fundamentals of Physics I**, *University of Vermont*, Fall.

PHYS 022: Introductory Lab II, *University of Vermont*, Spring.

2016 **PHYS 021: Introductory Lab I**, *University of Vermont*, Fall.

Math: 6-8th grade, *Emadrian Bilingual School, Bayamon, Puerto Rico*, Spring.

2015 **Math: 9-12th grade**, *Emadrian Bilingual School, Bayamon, Puerto Rico*, Fall.

CCOM 3033: Introduction to Programming (Official Tutor), *University of Puerto Rico, Rio Piedras*, Spring.