

Axel O. Vera
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Education

B.S., Chemistry (<i>4.0 GPA</i>), University of Puerto Rico, Río Piedras Campus, San Juan, PR	2019
Ph.D., Chemistry, Massachusetts Institute of Technology (MIT), Cambridge, MA	2024 (expected)

Research Interests

My research interests lie at the interface between chemistry and biology. I am interested in synthesizing small molecules that serve as therapeutic agents. I am also interested in developing electrochemical and nanoelectronic sensors based on my synthesized molecules to detect disease-marking proteins and intracellular Fe(II).

Research Experience

Broad Institute of MIT and Harvard, Synthesis of Small-Molecule Nucleases for Miniature Genome Editors, (mentors: Sophia Lai and Amit Choudhary, Ph.D.)	2018
Purdue University, Developing a Procedure to Determine the Isotope Effect of Denitrification in Soil, (mentors: Benjamin P. Wilkins and Greg M. Michalski, Ph.D.)	2017
University of Puerto Rico, Río Piedras Campus, Synthesis of Ferrocene Containing Compounds for Fe ²⁺ Sensors, (mentor: Ana R. Guadalupe, Ph.D.)	2017-2019

Honors and Awards

Dean of Science Fellow at MIT	2019-2022
Walter L. Hughes Memorial Summer Fellow at MIT	2019
Academic Excellence in Chemistry at University of Puerto Rico, Río Piedras Campus	2019
Academic Excellence in the Arts at University of Puerto Rico, Río Piedras Campus	2019
Distinguished Student in Chemistry, Colegio de Químicos de PR	2019
Distinguished Student in Chemistry, Colegio de Químicos de PR	2018
BSRP fellow at the Broad Institute of MIT and Harvard	2018
ABRCMS 2017 Presentation Awardee in Chemistry	2017
MARC fellow at University of Puerto Rico, Río Piedras Campus	2017-2019
NSF-REU fellow at Purdue University	2017
Honors Tuition Scholarship recipient (awarded to students with grades above the 95 th percentile at University of Puerto Rico, Río Piedras)	2015-2019
Dean's List member at University of Puerto Rico, Río Piedras Campus	2015-2019

Publications

Vera, A. O. Synthesis and Characterization of Ferrocene Containing Compounds for Chelating and Detecting Fe ²⁺ . B.S. MARC Thesis, University of Puerto Rico, Río Piedras Campus.	2019
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Updated: May 31, 2019

Presentations**Oral**

Axel O. Vera and Ana R. Guadalupe, *Synthesis and Characterization of Ferrocene Containing Compounds for Chelating and Detecting Fe²⁺*. University of Puerto Rico, Río Piedras Campus. Mar. 20, 2019

Axel O. Vera, Sophia Lai, and Amit Choudhary, *Synthesis of Small-Molecule Nucleases for Miniature Genome Editors*. Broad Institute of MIT and Harvard. (Presented to the Broad Institute leadership) July 31, 2018

Poster (National)

Axel O. Vera and Ana R. Guadalupe, *Synthesis and Characterization of Ferrocene Containing Compounds for Chelating and Detecting Fe²⁺*. ABRCMS. Nov. 17, 2018

Axel O. Vera, Sophia Lai, and Amit Choudhary, *Synthesis of Small-Molecule Nucleases for Miniature Genome Editors*. SACNAS. Oct. 11, 2018

Greg M. Michalski, Benjamin P. Wilkins, Axel O. Vera and Joseph Yount, *Oxygen and Nitrogen Isotope Effects during Nitrification and Denitrification Occurring in Midwestern Soils*. AGU Fall Meeting. Dec. 12, 2017

Axel O. Vera, Benjamin P. Wilkins, and Greg M. Michalski, *Determining the Fractionation Factor of Denitrification in Midwestern Maize Soil*. ABRCMS. Nov. 2, 2017

Axel O. Vera, Benjamin P. Wilkins, and Greg M. Michalski, *Understanding the Factors that Influence Denitrification and Isotopic Fractionation in Maize Soil (Revised)*. 2017 NSAC Undergraduate Student Research Symposium. Aug. 4, 2017

Poster (Local)

Axel O. Vera, Sophia Lai, and Amit Choudhary, *Synthesis of Small-Molecule Nucleases for Miniature Genome Editors*. Broad Institute of MIT and Harvard. Aug. 2, 2018

Axel O. Vera, Benjamin P. Wilkins, and Greg M. Michalski, *Understanding the Factors that Influence Denitrification and Isotopic Fractionation in Maize Soil*. Purdue Chemistry-Analyze This. Jul. 28, 2017

Axel O. Vera, Daniel Rivera, and Ingrid Montes, *Resonance and Vinylic Carbocation Stability in Alkyne Bromination*. University of Puerto Rico, Río Piedras Campus- Presentation of Research Proposals. May 5, 2016

Teaching

Analytical Chemistry (3rd year undergraduates; with Prof. Ana R. Guadalupe); Department of Chemistry, University of Puerto Rico, Río Piedras Campus; QUIM-3255 (3 hours of practice sessions per week) 2018