

Rafael Antonio Lainez Reyes

179 Camino de Vida
Santa Barbara, California, 93111

<https://ra-lainezr.github.io/>
raan.lare@math.ucsb.edu

Education

| | |
|---|--|
| University of California, Santa Barbara (UCSB) <i>Ph.D. Mathematics</i> | October 2017 – Present <i>Santa Barbara, California</i> |
| Centro de Investigación en Matemáticas (CIMAT) <i>Master of Science, Applied Mathematics</i> | August 2013 – August 2015 <i>Guanajuato, Mexico</i> |
| Universidad Nacional Autónoma de Honduras (UNAH) <i>Bachelor of Science, Chemical Engineering</i> | August 2006 – August 2012 <i>Tegucigalpa, Honduras</i> |

Research Experience

| | |
|---|--|
| Research Assistant <i>University of California, Santa Barbara (UCSB)</i> <ul style="list-style-type: none">• Supervisor: Carlos J. García-Cervera• Focus: Calculus of Variations, Partial Differential Equations, Electronic Structure | June 2019 – Present <i>Santa Barbara, California</i> |
| Research Assistant <i>Centro De Investigación en Matemáticas (CIMAT)</i> <ul style="list-style-type: none">• Supervisor: Miguel Ángel Moreles Vázquez• Focus: Fractional Calculus, Bayesian Methods for Inverse Problems | August 2015 – December 2015 <i>Guanajuato, México</i> |

Teaching Experience

| | |
|--|---|
| Teaching Associate <i>University of California, Santa Barbara (UCSB)</i> <ul style="list-style-type: none">• Courses Taught:• Math 3B: Integral Calculus | June 2019 – July 2019 <i>Santa Barbara, California</i> |
| Teaching Assistant <i>University of California, Santa Barbara (UCSB)</i> <ul style="list-style-type: none">• Courses Taught:• Math 3A: Differential Calculus• Math 4A: Linear Algebra• Math 34A: Calculus for Life and Social Sciences• Math 6A: Vector Calculus• Math 8: Introduction to Higher Mathematics | October 2017 – June 2019 <i>Santa Barbara, California</i> |
| Adjunct Professor <i>Universidad Nacional Autónoma de Honduras (UNAH)</i> <ul style="list-style-type: none">• Courses Taught:• MM 112: Precalculus for Health Sciences• MM 408: Vector Calculus• MM 412: Numerical Methods for Engineering• MM 415: Partial Differential Equations• MM 420: Discrete Mathematics• MM 515: Numerical Methods for Differential Equations• MM 528: Measure Theory | January 2015 – September 2017 <i>Tegucigalpa, Honduras</i> |

Visiting Positions

Visiting Scholar

Institute for Pure and Applied Mathematics (IPAM-UCLA)

- **Program:** Advancing Quantum Mechanics with Mathematics and Statistics

Spring 2022

Los Angeles, California

Schools and Conferences

DFTK Summer School on Numerical Methods for Density Functional Theory

Sorbonne Université

Joint Mathematical Meetings (JMM)

Summer 2022

Paris, France

January 2019

Denver, Colorado

Publications

M.A. Moreles, R.A. Lainez, *Mathematical Modelling of Fractional Order Circuit Elements and Bioimpedance Applications*, **Communications in Nonlinear Science and Numerical Simulation**,

Research Presentations

- On the Hartree-Fock Equations and the Roothman Algorithm
Institute for Pure and Applied Mathematics (IPAM)-March 2022
- Numerical Methods for Critical Points in Banach Spaces
University of California, Santa Barbara (UCSB)-October 2022
- On Critical Point Theory-Deformation Theorem and Palais-Smale Condition
University of California, Santa Barbara (UCSB)-January 2022

Awards & Honors

Grant for Master's Program

CONACyt, Mexico

August 2013 – August 2015

Research Grant

Centro de Investigación en Matemáticas (CIMAT)

August 2015 – December 2015

Outreach

- Society for Industrial and Applied Mathematics (SIAM)
University of California, Santa Barbara Student Chapter
 - October 2018-Present-Member
 - October 2019-Present-President
- Directed Reading Program Mentor (DRP)
University of California, Santa Barbara (UCSB)
Fall 2021-Spring 2022
Project: Physically Informed Neural Networks

Specialized Skills

Programming Languages: Matlab, C++, Python, Julia (beginner)

References

Carlos J. García-Cervera, Ph.D (Advisor)-cgarcia@math.ucsb.edu

Gustavo Ponce, Ph.D. (Committee Member) -ponce@math.ucsb.edu

Hector Cenicerros, Ph.D (Committee Member)-cenicerros@ucsb.edu