

# Rafael Lainez Reyes

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**Rafael A. Lainez Reyes**

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## Education

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**University of California, Santa Barbara / Ph.D., Mathematics**  
OCTOBER 2017 - ONGOING, UNITED STATES

**Centro de Investigación en Matemáticas (CIMAT) / Master of Science, Applied Mathematics**  
AUGUST 2013- AUGUST 2015, MEXICO

Thesis: *Modeling and Identification of Fractional Systems*

**Universidad Nacional Autónoma de Honduras (UNAH) / Bachelor, Chemical Engineering**  
AUGUST 2006- AUGUST 2012, HONDURAS

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## Experience

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**University of California Santa Barbara / Research Assistant**  
JUNE 2019 - PRESENT, SANTA BARBARA

**Principal Investigator:** Carlos J. García-Cervera

**Focus:** Calculus of Variations, Hartree-Fock Equations, Electronic Structure

**University of California Santa Barbara / Teaching Associate**  
JUNE 2019 - JULY 2019, SANTA BARBARA

Courses Taught

- Math 3B: Integral Calculus

**University of California Santa Barbara / Teaching Assistant**  
OCTOBER 2017 - JUNE 2019, SANTA BARBARA

Courses Taught:

- Math 3A: Differential Calculus
- Math 4A: Linear Algebra
- Math 34A: Calculus for Social Sciences
- Math 6A: Vector Calculus I
- Math 8: Introduction to Higher Mathematics

**Centro de Investigación en Matemáticas (CIMAT) / Research Assistant**  
AUGUST 2015 - DECEMBER 2015, MEXICO

**Principal Investigator:** Miguel Ángel Moreles Vázquez

**Focus:** Fractional calculus.

**National Autonomous University of Honduras/ Adjunct**

Professor

JANUARY 2016 - SEPTEMBER 2017, HONDURAS

Courses Taught:

- Numerical Methods for Engineering.
- Measure Theory.
- Partial Differential Equations.
- Numerical Methods for Differential Equations.
- Mathematical Methods in Engineering.
- Vector Calculus.
- Mathematics for Health Sciences.

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## Publications

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M.A. Moreles, R.A. Lainez, *Mathematical Modelling of Fractional Order Circuit Elements and Bioimpedance Applications*, **Communications in Nonlinear Science and Numerical Simulation**, 2016

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## Awards

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**CONACyT, Mexico**, Grant for Master's Program,

AUGUST 2013-AUGUST 2015

**Centro de Investigación en Matemáticas (CIMAT)** Research Grant,

AUGUST 2015-DECEMBER 2015

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## Visiting Positions

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**Institute for Pure and Applied Mathematics (IPAM),**

University of California, Los Angeles,

SPRING 2022

Program: Advancing Quantum Mechanics with Mathematics and Statistics

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## Conferences and Talks

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- **Institute for Pure and Applied Mathematics (IPAM),**  
University of California, Los Angeles,

MARCH 2022

Talk: *On the Hartree-Fock Equations and the Roothman Algorithm*

- **DFTK Summer School on Numerical Methods for Density Functional Theory Simulations,**

Sorbonne Université,

AUGUST 2022

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## Outreach

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**Society for Industrial and Applied Mathematics (SIAM),**  
University of California, Santa Barbara, Student Chapter,  
October 2018-Present, Member  
October 2019-Present, President

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## Skills

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Matlab, C++, Python

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## References

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Carlos J. García-Cervera, PhD., Advisor, [cgarcia@math.ucsb.edu](mailto:cgarcia@math.ucsb.edu)  
Gustavo Ponce, PhD., Full Professor, [ponce@math.ucsb.edu](mailto:ponce@math.ucsb.edu)  
Hector Cenicerros, PhD., Full Professor, [cenicerros@ucsb.edu](mailto:cenicerros@ucsb.edu)