

JOAO A ASCENSAO

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EDUCATION

- University of California, Berkeley** 2017-2023
Ph.D. in Bioengineering
Concentration in Biophysics & Computational Biology
Advisor: Oskar Hallatschek
- Rice University** 2012-2016
B.S. in Bioengineering
Minor in Global Health
Advisor: Oleg Igoshin

EMPLOYMENT & RESEARCH EXPERIENCE

- Harvard University** 2024-present
Postdoctoral Fellow Cambridge, MA
Advisor: Michael Desai
- University of California, Berkeley** 2024
Interim Postdoctoral Fellow Berkeley, CA
Advisor: Oskar Hallatschek
- University of California, Berkeley** 2018 - 2023
Graduate Student Researcher Berkeley, CA
Advisor: Oskar Hallatschek
- Universitat Pompeu Fabra** 2016-2017
Fulbright Scholar & Whitaker Fellow Barcelona, Spain
Advisor: Jordi Garcia-Ojalvo
- University of California, Berkeley** Summer 2015
Amgen Scholar Berkeley, CA
Advisor: Adam Arkin
- Rice University** 2014-2016
Undergraduate Researcher Houston, TX
Advisor: Oleg Igoshin
- Rice Global Health & St. Gabriel's Hospital** Summer 2014
Biomedical Devices Intern Namtete, Malawi
- The Jackson Laboratory** Summer 2013
NSF-REU Intern Bar Harbor, ME
Advisor: Judith Blake

PUBLICATIONS

1. **Ascensao JA**, Lok K, Hallatschek O. Asynchronous abundance fluctuations can drive giant genotype frequency fluctuations. *Nature Ecology and Evolution* (2024). doi: [10.1038/s41559-024-02578-3](https://doi.org/10.1038/s41559-024-02578-3)
2. **Ascensao JA**, Denk J, Lok K, Yu Q, Wetmore KM, Hallatschek O. Rediversification following ecotype isolation reveals hidden adaptive potential. *Current Biology* (2024). doi: [10.1016/j.cub.2024.01.029](https://doi.org/10.1016/j.cub.2024.01.029)
– See [dispatch article](#) by W. Shoemaker
3. Yu Q, **Ascensao JA***, Okada T*, COG-UK consortium, Boyd O, Volz E, Hallatschek O. Lineage frequency time series reveal elevated levels of genetic drift in SARS-CoV-2 transmission in England. *PLOS Pathogens* (2024). doi: [10.1371/journal.ppat.1012090](https://doi.org/10.1371/journal.ppat.1012090)
4. **Ascensao JA**, Wetmore KM, Good BH, Arkin AP, Hallatschek O. Quantifying the local adaptive landscape of a nascent bacterial community. *Nature Communications* (2023). doi: [10.1038/s41467-022-35677-5](https://doi.org/10.1038/s41467-022-35677-5)
5. **Ascensao JA***, Datta P*, Hancioglu B*, Sontag E*, Gennaro ML, Igoshin OA. Non-monotonic response to monotonic stimulus: regulation of glyoxylate shunt gene expression dynamics in *Mycobacterium tuberculosis*. *PLOS Computational Biology* (2016). doi: [10.1371/journal.pcbi.1004741](https://doi.org/10.1371/journal.pcbi.1004741)
6. **Ascensao JA***, Dolan ME*, Hill DP, Blake JA. Methodology for the inference of gene function from phenotype data. *BMC Bioinformatics* (2014). doi: [10.1186/s12859-014-0405-z](https://doi.org/10.1186/s12859-014-0405-z)

*equal contribution

AWARDS & RECOGNITIONS

2022	UC Berkeley International Conference Travel Grant
2020	Lloyd Scholarship (<i>Berkeley Bioengineering; additional stipend funding</i>)
2019	Brodie Scholarship (<i>Berkeley Bioengineering; additional stipend and research funding</i>)
2016-17	Fulbright Scholar (<i>one year of international research and stipend funding</i>)
2016-17	Whitaker International Program Fellowship (<i>one year of international research and stipend funding</i>)
2016	NSF Graduate Research Fellowship (<i>three years of stipend funding</i>)
2016	Berkeley Fellowship for Graduate Study (<i>two years of stipend funding</i>)
2016	MIT Sloan Scholar for Graduate Study [<i>declined</i>]
2016	Princeton Presidential Fellowship & Dean's Grant [<i>declined</i>]
2016	Rice Institute for Global Health—Innovator Award
2016	Best Medical Device; Rice Engineering Design Showcase (Senior Design Team)
2016	Best Overall Project; Rice Bioengineering Showcase (Senior Design Team)
2015	Outstanding Junior in Bioengineering Award
2015	Best Engineering Poster; Rice Undergraduate Research Symposium
2015	Amgen Scholar; University of California, Berkeley
2014	Global Health Award; Rice Undergraduate Research Symposium
2012-16	President's Honor Roll

INVITED TALKS

2024	Society of Industrial & Applied Math, Life Sciences Conference	Portland, OR
2023	Seminar at the Max Planck Institute for the Science of Light	Erlangen, Germany
2019	UC Berkeley Bioengineering Retreat (Brodie Scholar Talk)	Santa Cruz, CA

CONTRIBUTED/SELECTED TALKS

2023	Molecular Mechanisms in Evolution, Gordon Conference	Easton, MA
2022	Bay Area Population Genetics	Berkeley, CA
2022	Evolutionary Dynamics and Processes	Plön, Germany
2020	Microbial Ecology and Evolution Virtual (MEEVirtual)	Virtual
2019	West Coast Bacterial Physiology	Asilomar, CA
2017	Whitaker Fellows Seminar	Lisbon, Portugal
2013	Gene Ontology Consortium Meeting	Bar Harbor, ME

POSTERS

2024	The Allied Genetic Conference (TAGC)	National Harbor, MD
2023	Bay Area Population Genetics	Palo Alto, CA
2023	Les Houches Theoretical Biological Physics	Les Houches, France
2023	Molecular Mechanisms in Evolution, Gordon Conference	Easton, MA
2023	Stochastic Physics in Biology, Gordon Conference	Ventura, CA
2023	Berkeley Statistical Mechanics Meeting	Berkeley, CA
2019	Microbial Population Biology, Gordon Conference	Andover, NH
2015	Bioengineering Undergraduate Poster Symposium	Houston, TX
2015	UC Berkeley Amgen Scholars Poster Session	Berkeley, CA
2015	Rice Undergraduate Research Symposium	Houston, TX
2014	Bioengineering Undergraduate Poster Symposium	Houston, TX

RESEARCH SUPERVISION

2023-present	Keon Abedi, undergraduate student
spring 2024	Kira Buttrey, rotation student, bioengineering
fall 2023	Sarah Wasinger, rotation student, bioengineering
fall 2023	Aaron Fultineer, rotation student, physics
2020-2023	Kristen Lok, undergraduate student
2020-2021	Can Goksal, undergraduate student (co-supervised with QinQin Yu)
2019-2020	Nicole Tin, undergraduate student

GRADUATE COURSEWORK

2017	Statistical Mechanics I
2019	Statistical Mechanics II
2017	Computational Molecular Biology
2018	Computational Statistics
2018	Genomics for Microbiology
2018	Mathematical Models of Infectious Disease
2019	Probabilistic Models & Machine Learning in Genomics
2018	Microbial Diversity & Evolution
2018	Biological Regulatory Mechanisms
2024	Advanced Immunology

ADDITIONAL EDUCATION

Les Houches School of Physics
Theoretical Biological Physics

Summer 2023

Marine Biological Laboratory
Microbial Diversity

Summer 2019

SERVICE & OTHER WORK

“Data Science for Biology”, UC Berkeley

Graduate Student Instructor

2022

Berkeley, CA

- Prepared and gave lectures for class discussion section.
- Held office hours for students.
- Helped to design coding assignments and graded them.

“Biocomputing”, Universitat Pompeu Fabra

Teaching Assistant

2017

Barcelona, Spain

- Helped second year Bioengineering undergraduate students with coding assignments (in Spanish).
- Prepared and gave lectures for class discussion section.

Virginia Science Olympiad

Volunteer

2011-2019

Northern Virginia and remotely

- Writer for regional and state Science Olympiad forensics events for Middle School students.
- Continue to work remotely since moving away from Virginia.

Fulbright Outreach

Volunteer

2016-2017

Barcelona, Spain

- Gave talks to high school students in Barcelona about topics in modern biology research, and my own research projects.

Brown College, Rice University

Academic Fellow

2016-2017

Houston, TX

- Tutored individual college members in a variety of subjects, including physics, math and computational engineering.
- Led review sessions before exams for freshman physics & math classes.

Biomedical Engineering Society

Mentor

2014-2016

Houston, TX

- Served as a year-long resource and mentor for underclassman bioengineers.
- Advised mentees on class selection, internships, research, etc.

Brown College, Rice University

O-week Advisor

2015-2016

Houston, TX

- Introduced new students to the academic and social climate at Rice and helped them to prepare for their first semester.
- Continued to support new students throughout the year as a resource for academic planning and general support.

“Bioengineering Fundamentals”, Rice University

Teaching Assistant & Grader

2014

Houston, TX

- Graded homework and led homework sessions for introductory bioengineering class.

Rice University Environmental Committee

EcoRep

2014-2015

Houston, TX

- Led campus-wide and residential college sustainability campaigns.

Updated: January 13, 2025