JOAO A ASCENSAO

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EDUCATION

University of California, Berkeley *2017-2023*
Ph.D. in Bioengineering
Concentration in Biophysics & Computational Biology
Thesis: The dynamics of ecology and evolution in simple experimental microbial communities
Advisor: Oskar Hallatschek

Rice University *2012-2016*
B.S. in Bioengineering
Minor in Global Health
Advisor: Oleg Igoshin

EMPLOYMENT & RESEARCH EXPERIENCE

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 *Namitete, Malawi*

The Jackson Laboratory Summer 2013
NSF-REU Intern *Bar Harbor, ME*
Advisor: Judith Blake

Rice University 2015-2016
Capstone Engineering Design Project *Houston, TX*
Project: revIVe Infusion Pump

PUBLICATIONS

1. **Ascensao JA**, Lok K, Hallatschek O. Asynchronous abundance fluctuations can drive giant genotype frequency fluctuations. *bioRxiv* (2024). doi: 10.1101/2024.02.23.581776

2. **Ascensao JA**, Denk J, Lok K, Yu Q, Wetmore KM, Hallatschek O. Rediversification following ecotype isolation reveals hidden adaptive potential. *Current Biology* (2024) 34, 855-867. doi: 10.1016/j.cub.2024.01.029
   – See dispatch article by W. Shoemaker

3. **Ascensao JA**, Wetmore KM, Good BH, Arkin AP, Hallatschek O. Quantifying the local adaptive landscape of a nascent bacterial community. *Nature Communications* (2023) 14, 248. doi: 10.1038/s41467-022-35677-5

4. 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. *bioRxiv* (2022). doi: 10.1101/2022.11.21.517390

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) 12(2):e1004741. doi: 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) 15:405. doi: 10.1186/s12859-014-0405-z

*equal contribution

AWARDS & RECOGNITIONS

2022	UC Berkeley International Conference Travel Grant
2020	Lloyd Scholarship (UCB Bioengineering)
2019	Brodie Scholarship (UCB Bioengineering)
2016-17	Fulbright Scholar
2016-17	Whitaker International Program Fellowship
2016	NSF Graduate Research Fellowship
2016	Berkeley Fellowship for Graduate Study
2016	MIT Sloan Scholar for Graduate Study [*Declined*]
2016	Princeton Presidential Fellowship & Dean's Grant [*Declined*]
2016	Rice Institute for Global Health—Innovator Award
2016	Best Medical Device; Rice Engineering Design Showcase (revIVe)
2016	Best Overall Project; Rice Bioengineering Showcase (revIVe)
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

PRESENTATIONS

2023	Molecular Mechanisms in Evolution, Gordon Conference	*Easton, MA*
2023	Invited Seminar at the Max Planck Institute for the Science of Light	*Erlangen, Germany*
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*
2019	UC Berkeley Bioengineering Retreat (Brodie Scholar Talk)	*Santa Cruz, CA*
2017	Whitaker Fellows Seminar	*Lisbon, Portugal*
2013	Gene Ontology Consortium Meeting	*Bar Habor, ME*

POSTERS

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
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

ADDITIONAL EDUCATION

Les Houches School of Physics *Summer 2023*
Theoretical Biological Physics

Marine Biological Laboratory *Summer 2019*
Microbial Diversity

SERVICE & OTHER WORK

"Data Science for Biology", UC Berkeley 2022
Graduate Student Instructor *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 2017
Teaching Assistant *Barcelona, Spain*

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

Virginia Science Olympiad 2011-2019
Volunteer *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 2016-2017
Volunteer *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 2016-2017
Academic Fellow *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 2014-2016
Mentor *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 2015-2016
O-week Advisor *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 2014
Teaching Assistant & Grader *Houston, TX*

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

Rice University Environmental Committee 2014-2015
EcoRep *Houston, TX*

- Led campus-wide and residential college sustainability campaigns.

Updated: February 27, 2024