

JEAN C.C. VILA

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APPOINTMENT

Stanford University, Palo Alto CA, USA August 2022- Present
Postdoctoral Scholar, Department of Biology,

EDUCATION

Yale University, New Haven CT, USA 2016-2022
PhD in Ecology and Evolutionary Biology
Supervisor: Dr. Alvaro Sanchez.
Thesis: On the Evolutionary Ecology of Microbial Metabolic Niche-Construction

Imperial College London, London, UK. 2015-2016
MSc in Computational Methods in Ecology and Evolution, Distinction
Supervisors: Dr. James Rosindell and Prof. Thomas Bell
Thesis: Individual-Based Modeling of Microbial Community Invasion

University of Oxford, Oxford, UK. 2012-2015
BA in Biological Sciences , 1st class

PUBLICATIONS

- [10] *Functional Attractors in microbial community assembly.*
Estrela S., **Vila J.C.C.**, Lu N., Bajic D., Rebolleda-Gomez M., Chang C-Y., Goldford J., Sanchez-Gorostiaga A., & Sanchez A
Cell Systems(2022) <https://doi.org/10.1016/j.cels.2021.09.011>
- [9] *A metabolic modeling platform for the computation of microbial ecosystems in time and space (COMETS)*
Dukovski I.*, Bajic D.*, Chacón J.*, Quintin M.*, **Vila J.C.C.**, Sulheim S., Pacheco A.R., Bernstein D., Reihl J.R., Korolev K., Sanchez A., Harcombe R.W. & Segre D.
Nature Protocols (2021) <https://doi.org/10.1038/s41596-021-00593-3>
- [8] *Top-down engineering of complex communities by directed evolution*
Chang C-Y.*, **Vila J.C.C.***, Bender M., Li R., Mankowski M.C., Bassette M., Borden J., Golfier S., Sanchez P.G., Waymack R., Zhu X., Diaz-Colunga J., Estrela S., Rebolleda-Gomez M. & Sanchez A.
Nature Ecology and Evolution (2021) <https://doi.org/10.1038/s41559-021-01457-5>
- [7] *Nutrient dominance governs the assembly of microbial communities in mixed nutrient environments.*
Estrela S.*, Sanchez-Gorostiaga A.*, **Vila J.C.C.*** & Sanchez A,
eLife (2021) doi: 10.7554/eLife.65948
- [6] *Complex yeast-bacteria interactions shape the yield of industrial ethanol fermentations.*
Lino F.S.O., Bajic D., **Vila J.C.C.**, Sanchez A. & Sommer M.O.A.
Nature Communications (2021) doi: 10.1038/s41467-021-21844-7
- [5] *Directed evolution of microbial communities.*
Sanchez A., **Vila J.C.C.**, Chang C-Y., Diaz-Colunga J., Estrela S. & Rebolleda-Gomez M.
Annual Review of Biophysics (2021) doi: 10.1146/annurev-biophys-101220-072829

[4] *Dissimilarity-Overlap Analysis of replicate enrichment communities.*

Vila J.C.C., Yang, Y-L. & Sanchez A.

ISME Journal (2020) doi: 10.1038/s41396-020-0702-7

[3] *Uncovering the Rules of Microbial Community Invasion.*

Vila, J.C.C., Jones, M.L., Patel M., Bell T. & Rosindell J.

Nature Ecology and Evolution (2019) doi: 10.1038/s41559-019-0952-9

[2] *On the deformability of an empirical adaptive landscape by microbial evolution.*

Bajic, D.*, Vila, J.C.C.*, Blount, Z.D. & Sanchez, A.

Proceedings of the National Academy of Sciences (2018) 115(44):11286-11291

[1] *The ecological consequences of cellular computations.*

Baskerville, M*, Biro A*, Blazanin M*, Chang CY*, Hallworth, A*, Sonnert, N*, Vila, J.C.C.* & Sanchez, A.

Natural Computing (2018) doi: 10.1007/s11047-018-9708-8

PREPRINTS

[1] *Diversity begets diversity under microbial niche construction.*

Estrela S., Diaz-Colunga J., Vila J.C.C., Sanchez-Gorostiaga A., & Sanchez A

BioRxiv (2022) <https://www.biorxiv.org/content/10.1101/2022.02.13.480281v1>

[2] *Emergent coexistence in multispecies microbial communities.*

Chang C-Y., D. Bajic., Vila J.C.C., Estrela S., & Sanchez A

BioRxiv (2022) <https://www.biorxiv.org/content/10.1101/2022.05.20.492860v1.full.pdf>

[3] *Emergent ecosystem functions follow simple quantitative rules.*

Diaz-Colunga J*, Skwara A*, Vila J.C.C., D. Bajic., & Sanchez A

BioRxiv (2022) <https://www.biorxiv.org/content/10.1101/2022.06.21.496987v1>

[4] *The community function landscape of microbial consortia*

Sanchez A., D Bajic., J Diaz-Colunga., Vila J.C.C., & S Kuehn.

EcoEvoRxiv (2022) <https://ecoevorxiv.org/s4wau/>

MEETINGS, CONFERENCES, WORKSHOPS AND SEMINARS

The Graduate Research in Ecology, Behavior, and Evolution Annual Symposium, Virtual, 2021 (Contributed Talk)

Microbial Ecology and Evolution, MEE Virtual, 2020 (Poster)

Yale University, Microbial Sciences Institute SMALTalk, 2019 (Invited Talk)

COMETS Hackathon, Boston University, MA, 2019 (Invited Talk)

National Institute of Advanced Industrial Science and Technology Symposium, Tsukuba, Japan, 2019 (Attended)

Gordon Research Conference in Microbial Population Biology, Andover, NH, 2019 (Poster)

Microbial Sciences Institute 1st Retreat, New Haven, CT 2019 (Poster)

Princeton Center for Theoretical Science workshop on *Bridging theory and experiment in microbial communities*

Princeton University, NJ, 2018 (Contributed Talk)

II Joint Congress on Evolutionary Biology, Montpellier, France, 2018 (Poster and Contributed Talk)

Evolutionary Systems Biology, Cambridgeshire, 2018 (Poster)

Yale EEB Graduate Student Symposium, New Haven, CT 2018 (Poster)

Gordon Research Conference in Microbial Population Biology, Andover, NH, 2017 (Poster)

West Campus Symposium, West Haven, CT 2017 (Poster)

Yale EEB Graduate Student Symposium , New Haven, CT 2017 (Poster)

AWARDS, GRANTS AND FELLOWSHIPS

Computational, Evolutionary and Human Genomics Postdoctoral Fellowship, Stanford University, 2022-2023

John Spangler Nicholas Award, Yale University, 2022

Poster Presentation Awards, Yale EEB Graduate Student Symposium 2018.

Stirling Prize Fellowship, Yale University 2016-2018.

Illumina Harvey Prize, Imperial College London, 2016.

Wadham College Student Travel Grant, Oxford University, Oxford 2014.

OTHER

TEACHING

EEB 729 Microbial Ecology & Evolution, Yale University, Teaching Assistant

PBOC2019 Physical Biology of the Cell, Marine Biology Laboratory, Woods Hole MA. Teaching Assistant

EEB 220 General Ecology, Yale University, Fall 2017, Teaching Fellow

BIOL 104 Ecology and Evolutionary Biology, Yale University, Spring 2017, Teaching Fellow

EEB 075L Virus Discovery and Evolution Lab, Yale University, Fall 2016, Teaching Fellow

SERVICE

Graduate Affiliate Saybrook College, Yale University, 2018-2022

Organizing Committee of 2nd MSI Retreat, 2022

Organizer of EEB Graduate Student Symposium, 2019

Organizer of EEB Graduate Student Symposium, 2018

REFeree FOR SCIENTIFIC JOURNAL

ISME JOURNAL(2022)

EXTERNAL GRANT REFeree

Leverhulme Trust (2021)