Guillem Salazar

ETH Zürich, Switzerland

guillems@ethz.ch | guillemsalazar.github.io | 0000-0002-9786-1493 | GuillemSalazar

I use computational tools to understand how marine microbial communities are shaped and respond to environmental change.

Academic Information

Degree in Biological Sciences — *Valencia, SPAIN*
University of Valencia — *2007*

MSc in Biodiversity: Conservation and Evolution — *Valencia, SPAIN*
University of Valencia — *2008*

PhD. in Oceanography — *Barcelona, SPAIN*
Polytechnic University of Catalonia & Marine Sciences Institute (ICM - CSIC) — *2019*

Postdoc — *Zürich, SWITZERLAND*
Sunagawa Lab, ETH Zürich — *current*

Grants and Contracts

Introduction to Scientific Research Grant - Education and Science Ministry — *Valencia, SPAIN*
University of Valencia and Cavanilles Intitute for Biodiversity and Evolutionary Biology — *2007*

Research Technician - Geronimo Forteza Programme — *Valencia, SPAIN*
University of Valencia and Cavanilles Intitute for Biodiversity and Evolutionary Biology — *2008*

Grant for a stay at Dr. Fuhrman Lab — *Valencia, SPAIN*
University of Southern California (USC), Los Angeles, CA, USA — *2011*

JAE Predoc (Phd Grant/Contract) — *Barcelona, SPAIN*
Marine Sciences Institute (ICM), CSIC — *2013*

Research Technician Contract — *Barcelona, SPAIN*
Marine Sciences Institute (ICM), CSIC — *2014*

Research Technician Contract — *Barcelona, SPAIN*
Marine Sciences Institute (ICM), CSIC — *2015*

Courses

II Scientific Workshop of ICBiBE — *Valencia, SPAIN*
Cavanilles Intitute for Biodiversity and Evolutionary Biology — *2006*

International Course on Ecological Modelling — *Valencia, SPAIN*
University of Valenciaand the Spanish Society for Limnology and the Spanish Society for Terrestrial Ecology — *2007*

Socrates Intensive Programme Mathematics and Biology — *Paris, FRANCE*
Universit- d'Orsay Paris XI y AgroParisTech — *2008*

Famoso III Scientific Cruise (Barcelona - Barcelona, Spain)
2009

Citowork Cruise (Barcelona - Barcelona, Spain)
2010

Inter-calibration Scientific Cruise - Malspina 2010 Expedition (Las Palmas de Gran Canaria, Spain - Cartagena, Spain)
2010

Methods in Microbial Oceanography Course — *Barcelona, SPAIN*
Marine Sciences Institute (ICM), CSIC — *2010*

Malaspina 2010 Scientific Cruise (Cadiz, Spain - Rio de Janeiro, Brazil)

2011

Bioinformatics for metagenomics and environmental sequencing *Oslo, NORWAY*

MERG and University of Oslo, Department of Biology *2011*

Tara Oceans Scientific Cruise (Bermudas - Açores, Portugal)

2012

Teaching

Practical applications to epidemiology *Valencia, SPAIN*

Valencia's School for Health Studies (EVES) *2013*

Biostatistics for Doctors: practical applications *Valencia, SPAIN*

Valencia's School for Health Studies (EVES) *2014*

Oral presentations in conferences

Constatación empírica de un modelo estocàstico para predecir la extinción de especies en interacción
Salazar, G., et al.
II Congreso Nacional de Biodiversidad
2009

Biogeografia y diversidad de procariotas diazotrofos marinos mediante técnicas moleculares y genómicas
Cornejo-Castillo, FM., Salazar, G., Stal, L., Hingamp, P., Gasol, J.M., Acinas, S.G.
IX Congreso de Microbiología del Medio Acuàtico
2012

Global beta-diversity patterns in deep-ocean bacterial communities
Salazar, G., Cornejo-Castillo, FM., Acinas, S.G., Gasol, J.M.
ASLO Aquatic Sciences Meeting
2012

Exploración de la diversidad microbiana en el océano profundo: primeros Resultados de la Expedición Malaspina 2010
Gasol, J.M., Salazar, G., Cornejo-Castillo, FM., Pernice, M., Gomes, A., Massana, R., Moràn, X.G., Arrieta, T., Duarte, C., Acinas, S.G.
IV Congreso de Biodiversidad
2013

Patrones de diversidad globales de procariotas y picoeucariotas en el océano fótico y afótico
Salazar G., Logares R., Cornejo-Castillo F.M., Sunagawa S., Bork P., Gasol J.M. and Acinas S.G.
X Congreso de Microbiología del Medio Acuàtico
2014

A global ocean metagenomic survey reveals events of vertical connectivity in oceanic microbial communities
Salazar G., Cornejo-Castillo F.M., Logares R., Sunagawa S., Ludicone D., Lionel G., Stemmann L., Laxenaire R., Speich S., Gasol J.M., Acinas S.G.
SAME 14
2015

Living on particles in the ocean surface and the bathypelagic: prokaryotic groups involved and phylogenetic conservation of the particle-association trait
Mestre M., Salazar G., Cornejo-Castillo F.M., Sala M.M., Acinas S.G., Gasol J.M.
SAME 14
2015

Posters in conferences

El papel del canibalismo en copepodos dentro de una red trófica sencilla
Salazar, G., et al.
XI Conferencia Española y I Encuentro Iberamericano de Biometría
2007

Un modelo nulo para la conectancia de redes de interacció planta-animal
Salazar, G., et al.
XI Conferencia Española y I Encuentro Iberamericano de Biometría
2007

Diversity patterns of cultured marine bacteria ussing different organic matter sources as compared to single amplified genomes
Salazar, G., Sarmento, H., DÕez-Vives, C., Ferrera, I., Gasol, J.M., and Acinas, S.G.
SAME 12
2011

Exploración de la diversidad microbiana en en distintos contextos ecológicos dentro de la expedición TARA Oceans
Salazar, G., Logares, R., Cornejo-Castillo, FM., Ferrera, I., Sarmento, H., Gasol, JM., Acinas, S.G.
IV Congreso de Biodiversidad
2013

Publications

1. Ruiz-González, C, M Mestre, M Estrada, M Sebastián, G Salazar, S Agustí, E Moreno-Ostos, I Reche, XA Álvarez-Salgado, XAG Morán, CM Duarte, MM Sala, and JM Gasol (Apr. 2020). Major imprint of surface plankton on deep ocean prokaryotic structure and activity. *Molecular Ecology*.
2. Milanese, A, DR Mende, L Paoli, G Salazar, HJ Ruscheweyh, M Cuenca, P Hingamp, R Alves, PI Costea, LP Coelho, TSB Schmidt, A Almeida, AL Mitchell, RD Finn, J Huerta-Cepas, P Bork, G Zeller, and S Sunagawa (Mar. 2019). Microbial abundance, activity and population genomic profiling with mOTUs2. *Nature Communications* **10**(1).
3. Massoni, J, M Bortfeld-Miller, L Jardillier, G Salazar, S Sunagawa, and JA Vorholt (Oct. 2019). Consistent host and organ occupancy of phyllosphere bacteria in a community of wild herbaceous plant species. *The ISME Journal* **14**(1), 245–258.
4. Salazar, G, L Paoli, et al. (Nov. 2019). Gene Expression Changes and Community Turnover Differentially Shape the Global Ocean Metatranscriptome. *Cell* **179**(5), 1068–1083.e21.
5. Eguíluz, VM, G Salazar, J Fernández-Gracia, JK Pearman, JM Gasol, SG Acinas, S Sunagawa, X Irigoien, and CM Duarte (Dec. 2019). Scaling of species distribution explains the vast potential marine prokaryote diversity. *Scientific Reports* **9**(1).
6. Ibarbalz, FM et al. (Nov. 2019). Global Trends in Marine Plankton Diversity across Kingdoms of Life. *Cell* **179**(5), 1084–1097.e21.
7. Villarino, E et al. (Jan. 2018). Large-scale ocean connectivity and planktonic body size. *Nature Communications* **9**(1).
8. Salazar, G and S Sunagawa (June 2017). Marine microbial diversity. *Current Biology* **27**(11), R489–R494.
9. Royo-Llonch, M, I Ferrera, FM Cornejo-Castillo, P Sánchez, G Salazar, R Stepanauskas, JM González, ME Sieracki, S Speich, L Stemmann, C Pedrós-Alió, and SG Acinas (July 2017). Exploring Microdiversity in Novel Kordia sp. (Bacteroidetes) with Proteorhodopsin from the Tropical Indian Ocean via Single Amplified Genomes. *Frontiers in Microbiology* **8**.
10. Lara, E et al. (Sept. 2017). Unveiling the role and life strategies of viruses from the surface to the dark ocean. *Science Advances* **3**(9), e1602565.
11. Cornejo-Castillo, FM, AM Cabello, G Salazar, P Sánchez-Baracaldo, G Lima-Mendez, P Hingamp, A Alberti, S Sunagawa, P Bork, C de Vargas, J Raes, C Bowler, P Wincker, JP Zehr, JM Gasol, R Massana, and SG Acinas (Mar. 2016). Cyanobacterial symbionts diverged in the late Cretaceous towards lineage-specific nitrogen fixation factories in single-celled phytoplankton. *Nature Communications* **7**(1).
12. Lima-Mendez, G et al. (May 2015). Determinants of community structure in the global plankton interactome. *Science* **348**(6237), 1262073–1262073.
13. Sunagawa, S et al. (May 2015). Structure and function of the global ocean microbiome. *Science* **348**(6237), 1261359–1261359.
14. Baltar, F, J Palovaara, M Vila-Costa, G Salazar, E Calvo, C Pelejero, C Marrasé, JM Gasol, and J Pinhassi (June 2015). Response of rare, common and abundant bacterioplankton to anthropogenic perturbations in a Mediterranean coastal site. *FEMS Microbiology Ecology* **91**(6).
15. Agusti, S, JI González-Gordillo, D Vaqué, M Estrada, MI Cerezo, G Salazar, JM Gasol, and CM Duarte (July 2015). Ubiquitous healthy diatoms in the deep sea confirm deep carbon injection by the biological pump. *Nature Communications* **6**(1).
16. Salazar, G, FM Cornejo-Castillo, V Benítez-Barrios, E Fraile-Nuez, XA Álvarez-Salgado, CM Duarte, JM Gasol, and SG Acinas (Aug. 2015). Global diversity and biogeography of deep-sea pelagic prokaryotes. *The ISME Journal* **10**(3), 596–608.
17. Salazar, G, FM Cornejo-Castillo, E Borrull, C Díez-Vives, E Lara, D Vaqué, JM Arrieta, CM Duarte, JM Gasol, and SG Acinas (Nov. 2015). Particle-association lifestyle is a phylogenetically conserved trait in bathypelagic prokaryotes. *Molecular Ecology* **24**(22), 5692–5706.
18. Ruiz-González, C, G Salazar, R Logares, L Proia, JM Gasol, and S Sabater (Nov. 2015). Weak Coherence in Abundance Patterns Between Bacterial Classes and Their Constituent OTUs Along a Regulated River. *Frontiers in Microbiology* **6**.
19. Acinas, SG, I Ferrera, H Sarmento, C Díez-Vives, I Forn, C Ruiz-González, FM Cornejo-Castillo, G Salazar, and JM Gasol (July 2014). Validation of a new catalysed reporter deposition-fluorescence in situ hybridization probe for the accurate quantification of marine B acteroidetes populations. *Environmental Microbiology* **17**(10), 3557–3569.
20. Logares, R, S Sunagawa, G Salazar, FM Cornejo-Castillo, I Ferrera, H Sarmento, P Hingamp, H Ogata, C de Vargas, G Lima-Mendez, J Raes, J Poulain, O Jaillon, P Wincker, S Kandels-Lewis, E Karsenti, P Bork, and SG Acinas (Sept. 2013). Metagenomic 16S rDNA Illumina tags are a powerful alternative to amplicon sequencing to explore diversity and structure of microbial communities. *Environmental Microbiology* **16**(9), 2659–2671.
21. Rodríguez-Martínez, R, G Rocap, G Salazar, and R Massana (Apr. 2013). Biogeography of the uncultured marine picoeukaryote MAST-4: temperature-driven distribution patterns. *The ISME Journal* **7**(8), 1531–1543.
22. Ferrera, I, CM Borrego, G Salazar, and JM Gasol (Oct. 2013). Marked seasonality of aerobic anoxygenic phototrophic bacteria in the coastal NW Mediterranean Sea as revealed by cell abundance, pigment concentration and pyrosequencing ofpufMgene. *Environmental Microbiology* **16**(9), 2953–2965.
23. Salvadó, Z, FN Arroyo-López, JM Guillamón, G Salazar, A Querol, and E Barrio (Feb. 2011). Temperature Adaptation Markedly Determines Evolution within the GenusSaccharomyces. *Applied and Environmental Microbiology* **77**(7), 2292–2302.

24. Rojo, C and G Salazar (June 2010). Why are there so many kinds of planktonic consumers? The answer lies in the allometric diet breadth. *Hydrobiologia* **653**(1), 91–102.
25. Rojo, C, M Segura, MA Rodrigo, and G Salazar (Sept. 2008). Factors controlling the colonial structure of Pediastrum tetras (Chlorophyceae). *Hydrobiologia* **617**(1), 143–155.
26. Rojo, C, MA Rodrigo, G Salazar, and M Álvarez-Cobelas (2008). Nitrate uptake rates in freshwater plankton: the effect of food web structure. *Marine and Freshwater Research* **59**(8), 717.