

NAME: REYNAUD-BERTHIER Stéphanie

BIRTH DATE AND PLACE: 9 September 1970, Principality of Monaco.

INSTITUTIONAL ADDRESS:

Centre Scientifique de Monaco
8 Quai Antoine I^{er}
98000 MONACO - FRANCE

MARITAL STATUS: married, 1 children.

EDUCATION:

- 2000: Ph. D. in Biogeochemistry, University of Nice-Sophia Antipolis, France.
- 1996: Master of Science, University of Nice-Sophia Antipolis, France.
- 1995: Bachelor with honours, University of Nice-Sophia Antipolis, France.

PROFESSIONAL POSITIONS:

- 2002-present: CSM Senior Scientist, ecophysiological team.
- 2000-2002: Postdoctoral Research Scientist, funded by NSF and Columbia University.

RESEARCH INTERESTS:

- The influence of global changes on the functioning of coral ecosystems and their calcification processes.
- Corals as environmental archives

PROFESSIONAL EXPERIENCES

Laboratory experiment :

Coral culture, physiological measurements : photosynthesis, respiration, calcification, chlorophyll, proteins, amino-acid, mucus excretion, enzymatique degradation.

Field trips: Coral sampling, drilling.

Virgin Islan, French Carabean, Fiji, Vietnam, Papua New Guinea, New Caledonia, Australia, Panama.

LIST OF PUBLICATIONS

In Press

Reynaud S and Ferrier-Pagès C. Biology and Ecophysiology of Mediterranean cold-water corals. In Mediterranean Cold-Water Corals: Past, Present and Future
Editors: Covadonga Orejas & Carlos Jiménez
Published by SPRINGER

Bastian L, Vigier N, **Reynaud S**, Kerros ME, Bayon G, Revel M. Li isotope composition of marine and biogenic carbonates and related reference materials. *Geostandards and Geoanalytical Research*

2018

Juillet-Leclerc A, Rollion-Bard C, **Reynaud S**, Ferrier-Pagès C (2018) A New Paradigm for $\delta^{18}\text{O}$ in coral skeleton oxygen isotope fractionation response to biological kinetic effects. *Chemical Geology* 483: 131-140

Hilmi N, Allemand D, Claudel-Rusin A, Gazeau F, Gaziello M, Hansson L, Metian M, Mondielli P, Osborn D, **Reynaud S**, Swarzenski P, Tambutté S, Venn A (2018) Fourth International Workshop on the Economics of Ocean acidification: Bridging the Gap between Ocean Acidification Impacts and Economic Valuation "From Sciences to Solutions: Ocean acidification impacts on ecosystem services - Case studies on coral reefs", Oceanographic Museum of Monaco, Principality of Monaco, 15-17 October 2017.

Hilmi N, Lafitte A, Allemand D, Lemaitre-Curri E, Ferrier-Pagès C, **Reynaud S**, Tambutté S, Venn A, Cramer W, Guiot J, Gazeau F, Petrucelli C, van Klaveren C, Highman L (2018) Regional Workshop on "Human impacts on Mediterranean marine ecosystems and the economy", Musée océanographique de Monaco, 17-18 October 2017.

2017

Raybaud V, Tambutté S, Ferrier-Pagès C, **Reynaud S**, Venn A, Tambutté E, Nival P, Allemand D (2017) Computing the carbonate chemistry of the coral calcifying medium its response to ocean acidification. *Journal of Theoretical Biology*

Courtial L, Ferrier-Pagès C, Jacquet S, Rodolfo-Metalpa R, **Reynaud S**, Rottier C, Houlbrèque F (2017) Effects of temperature and UVR on the organic matter fluxes and the metabolic activity of *Acropora muricata*. *Biology Open* 6(8): 1190-1199

2016

van de Water J, Melkonian R, Junca H, Voolstra CR, **Reynaud S**, Allemand D, Ferrier-Pagès C (2016) Spirochaetes dominate the microbial community associated with the red coral *Corallium rubrum* on a broad geographic scale. *Sci. Rep.* 6, 27277; doi: 10.1038/srep27277

C Pretet, van Zuilen K, Nägler TF, **Reynaud S**, Böttcher ME, Samankassou E (2016) Constraints on barium isotope fractionation during aragonite precipitation by corals. *The Depositional Record* 1(2): 118-119.

2015

Houlbrèque F, **Reynaud S**, Godinot C, Oberhänsli F, Rodolfo-Metalpa R, Ferrier-Pagès C (2015) Ocean acidification reduces feeding rates in the scleractinian coral *Stylophora pistillata*. *Limnology and Oceanography*

Fonvielle JA, **Reynaud S**, Jacquet S, LeBerre B, Ferrier-Pagès C (2015) First evidence of an important organic matter trophic pathway between temperate corals and pelagic microbial communities. *PloS One* 10(10): e0139175. doi:10.1371/journal.pone.0139175

2014

Montagna P, McCulloch M, Douville E, López Correa M, Trotter J, Rodolfo-Metalpa R, Dissard D, Ferrier-Pagès C, Frank N, Freiwald A, Goldstein S, Mazzoli C, **Reynaud S**, Ruggeberg A, Russo S, Taviani M (2014). Li/Mg Systematics in Scleractinian Corals: Calibration of the Thermometer. *Geochimica and Cosmochimica Acta* 132: 288-310.

Reynaud S, Gori A, Orejas C, Gili J-P, Ferrier-Pagès C (2014) Physiological performance of the cold-water coral *Dendrophyllia cornigera* reveals its preference for temperate environments. *Coral Reefs* 33: 665–674. DOI 10.1007/s00338-014-1167-9

Juillet-Leclerc A, **Reynaud S**, Dissard D, Tisserand G, Ferrier-Pagès C (2014) Light is an active contributor to vital effects of coral skeleton proxies *Geochimica Cosmochimica Acta*

Nguyen-Kim H, Bouvier T, Bouvier C, Doan-Nhu H, Nguyen-Ngoc L, Rochelle-Newall E, Baudoux A-C, Desnues C, **Reynaud S**, Ferrier-Pagès C, Bettarel Y (2014) High occurrence of viruses in the mucus layer of scleractinian corals *Environmental Microbiology and Environmental Microbiology Reports* 6 (issue 6): 675-682.

Ferrier-Pagès C, **Reynaud S**, Beraud E, Rottier C, Menu D, Janquin M-A, Gevaert F (2014) Photophysiology and daily primary production of a temperate symbiotic gorgonian. *Photosynthetic Research*. DOI 10.1007/s11120-014-0042-4

Hilmi N, Allemand D, Cinar M, Cooley S, Hall-Spencer J, Haraldsson G, Hattam C, Jeffree R.A, Orr J.C, Rehdanz K, **Reynaud S**, Safa A, Dupont S (2014) Exposure of Mediterranean Countries to Ocean Acidification. *Water*, 6, 1719-1744. (doi:10.3390/w6061719)

Reynaud S, Juillet-Leclerc A, Dissard D, Tisserand G, Ferrier-Pagès C (2014) Light is an active contributor to vital effects of coral skeleton proxies *Geochimica Cosmochimica Acta*

Nguyen-Kim H, Bouvier T, Bouvier C, Doan-Nhu H, Nguyen-Ngoc L, Rochelle-Newall E, Baudoux A-C, Desnues C, **Reynaud S**, Ferrier-Pagès C, Bettarel Y (2014) High occurrence of viruses in the mucus layer of scleractinian corals *Environmental Microbiology and Environmental Microbiology Reports* 6 (issue 6): 675-682.

Ferrier-Pagès C, **Reynaud S**, Beraud E, Rottier C, Menu D, Janquin M-A, Gevaert F (2014) Photophysiology and daily primary production of a temperate symbiotic gorgonian. *Photosynthetic Research*. DOI 10.1007/s11120-014-0042-4

Pretet C, **Reynaud S**, Ferrier-Pagès C, Gattuso J-P, Kamber B, Samankassou E (2014) Effect of salinity on the skeletal chemistry of cultured scleractinian zooxanthellate corals: Cd/Ca ratio as a potential proxy for salinity reconstruction. *Coral Reefs* 33:169-180. DOI 10.1007/s00338-013-1098-x

2013

C Pretet, Samankassou E, Felis T, **Reynaud S**, Böhm F, Ferrier-Pagès C, Gattuso J-P, Eisenhauer A, Camoin G (2013) Constraining calcium isotope fractionation ($\delta^{44/40}\text{Ca}$) in modern and fossil scleractinian coral skeleton. *Chemical Geology* 340, 49-58

Cocito S, Ferrier-Pagès C, Cupido R, Rottier C, W Meier-Augenstein, Kemp H, **Reynaud S**, A Peirano (2013) Nutrient acquisition in four Mediterranean gorgonian species. *MEPS* 473: 179-188

C Ferrier-Pagès, F Gevaert, **S Reynaud**, E Beraud, D Menu, M-A Janquin, S Cocito, A Peirano (2013) *In situ* assessment of the daily primary productivity of the temperate symbiotic coral *Cladocora caespitosa*. *Limnology and Oceanography*

Cocito S, Ferrier-Pagès C, Cupido R, Rottier C, W Meier-Augenstein, Kemp H, **Reynaud S**, A Peirano (2013) Nutrient acquisition in four Mediterranean gorgonian species. *MEPS* 473: 179-188

C Ferrier-Pagès, F Gevaert, **S Reynaud**, E Beraud, D Menu, M-A Janquin, S Cocito, A Peirano (2013) *In situ* assessment of the daily primary productivity of the temperate symbiotic coral *Cladocora caespitosa*. *Limnology and Oceanography*

N. Hilmi, Allemand D, Dupont S, Safa A, Haraldsson G, Nunes P. D, Moore C, Hattam C, **Reynaud S**, Hall-Spencer J, Fine M, Turley C, Jeffree R, Orr J, Munday P, Cooley S (2013) Towards improved socio-economic assessments of ocean acidification's impacts. *Marine Biology* 160: 1773-1787. DOI 10.1007/s00227-012-2031-5

2012

Ferrier-Pagès C, **Reynaud S**, Allemand D. Shallow water scleractinian corals of the Mediterranean Sea. In N. Stambler (ed.), *Life in the Mediterranean Sea: A Look at Habitat Changes*

N. Hilmi, Allemand D, Dupont S, Safa A, Haraldsson G, Nunes P. D, Moore C, Hattam C, **Reynaud S**, Hall-Spencer J, Fine M, Turley C, Jeffree R, Orr J, Munday P, Cooley S (2012) Towards improved socio-economic assessments of ocean acidification's impacts. *Marine Biology Special Issue*. DOI 10.1007/s00227-012-2031-5

Dissard D, Douville E, **Reynaud S**, Juillet-Leclerc A, Montagna P, Louvat P, McCulloch M. (2012) Light and temperature effects on $\delta^{11}\text{B}$ and B/Ca ratios of the zooxanthellate coral *Acropora* sp.: Results from culturing experiments. *Biogeoscience*

2011

Tambutte S, Holcomb M, Ferrier-Pages C, **Reynaud S**, Tambutte E, Zoccola D, & Allemand D. Coral biomineralization: From the gene to the environment . *J Exp Mar Biol* 408, Issue 1-2, 58-78

Erez J, **Reynaud S**, Silverman J, Schneider K, Allemand D. Coral Calcification Under Ocean Acidification and Global Change. In Z. Dubinsky and N. Stambler (eds.), *Coral Reefs: An Ecosystem in Transition*

Trotter J, Montagna P, McCulloch M, Silenzi S, **Reynaud S**, Mortimer G, Martin S, Ferrier-Pagès C, Gattuso JP., Rodolfo-Metalpa R. Quantifying the

pH 'vital effect' in the temperate zooxanthellate coral *Cladocora caespitosa*: validation of the boron seawater pH proxy. EPSL 303: 163-173

C. Ferrier-Pagès, A. Peirano, M. Abbate, S. Cocito, A. Negri, C. Rottier, P. Riera, R. Rodolfo-Metalpa, and **S. Reynaud** (2011) Summer autotrophy and winter heterotrophy in the temperate symbiotic coral *Cladocora caespitosa*. Limnol & Oceanogr 56(4): 1429-1438.

C Orejas, C Ferrier-Pagès, **S Reynaud**, A Gori, E Beraud, G Tsounis, D Allemand, J M Gili. Long-term growth rates measurements of four Mediterranean cold water coral species maintained in aquaria. MEPS 429: 57-65.

C Orejas, C Ferrier-Pagès, **S Reynaud**, G Tsounis, D Allemand, J M Gili (2011) Experimental comparison of skeletal growth rates in the cold-water coral *Madrepora oculata* (Linnaeus, 1758) and three tropical scleractinian corals. Journal of Experimental Marine Biology and Ecology 405: 1-5

N. Hilmi, Safa A, **Reynaud S**, Allemand D (2011) Coral reefs and tourism in Egypt's Red Sea. Proceedings of the MEEA, vol 14. Loyola University of Chicago

2010

Tsounis G, Orejas C, **Reynaud S**, Gili JM, Allemand D, Ferrier-Pagès C. Prey-capture rates in four Mediterranean cold water Corals. MEPS 398: 149-155

Juillet-Leclerc A, **Reynaud S**. Light effects on the isotopic fractionation of skeletal oxygen and carbon in the cultured zooxanthellate coral, *Acropora*: implications for coral-growth rates. Biogeosciences 7: 893-906

2009

Chow AM, Ferrier-Pagès C, Khalouei S, **Reynaud S**, Brown IR. Increased light intensity induces Heat Shock Protein Hsp60 in coral species. Cell Stress Chaperones.

Treignier C, Tolosa I, Grover R, **Reynaud S**, Ferrier-Pagès C. Carbon isotope composition of fatty acids and sterols in the scleractinian coral *Turbinaria reniformis*: Effect of light and feeding. Limnol & Oceanogr 54(6): 1933-1940.

Rollion-Bard C, Vigier N, Meibom A, Blamart D, **Reynaud S**, Rodolfo-Metalpa R, Martin S., Gattuso PJ. Effect of environmental conditions and skeletal ultrastructure on the Li isotopic composition of scleractinian corals. *EPSL* 286: 63-70

Juillet-Leclerc A, **Reynaud S**, Rollion-Bard C, Cuif J.P., Dauphin Y, Blamart D., Ferrier-Pagès C., Allemand D. Oxygen isotopic signature of the skeletal microstructures in cultured corals: identification of vital effects. *GCA* 73: 5320-5332

Reynaud S, Martinez P, Houlbrèque F, Billy I, Allemand D, Ferrier-Pagès C. Effect of light and feeding on the nitrogen isotopic composition of a zooxanthellate coral: role of nitrogen recycling. *MEPS* 392: 103-110

2008

Rodolfo-Metalpa R, **Reynaud S**, Allemand D, Ferrier-Pagès. Temporal and depth responses of two temperate corals, *Cladocora caespitosa* and *Oculina patagonica* from the North Mediterranean Sea. *MEPS* 369:103-114

2007

Reynaud S, Ferrier-Pagès C, Meibom A, Mostefaoui S, Mortlock R, Fairbanks R, Allemand D. Light and temperature effects on Sr/Ca and Mg/Ca ratios in the scleractinian coral *Acropora* sp. *GCA* 71: 354-362.

2006

Böhm F, Gussone N, Eisenhauer A, Dullo WC, **Reynaud S**, Paytan A. Ca Isotope Fractionation in Modern Corals. *GCA* 70: 4452-4462

2004

Reynaud S, Hemming N G, Juillet-Leclerc A, Gattuso J-P. Effect of $p\text{CO}_2$ and temperature on the boron isotopic composition of the zooxanthellate coral *Acropora* sp. *Coral Reefs* 23: 539-546.

Reynaud S, Ferrier-Pagès C, Boisson F, Allemand D, Fairbanks RG. Effect of light and temperature on calcification and strontium uptake in the scleractinian coral *Acropora verweyi*. *MEPS* 279: 105-112.

Allemand D, Ferrier-Pagès C, Furla F, Houlbrèque F, Puvarel S, **Reynaud S**, Tambutté É, Tambutté S, Zoccola D. Biomineralisation in reef-building corals: from molecular mechanisms to environmental control. C. R. Palevol 3: 453-467.

2003

Reynaud S, Leclercq N, Romaine-Lioud S, Ferrier-Pagès C, Jaubert J, Gattuso JP. Interacting effects of CO₂ partial pressure and temperature on photosynthesis and calcification in a scleractinian coral. Global Change Biology 9: 1660-1668

2002

Grover R, Maguer J-F, **Reynaud S**, Ferrier-Pagès C. Uptake of ammonium by the scleractinian coral *Stylophora pistillata*: effect of feeding, light and ammonium concentrations. Limnol Oceanogr 47(3): 782-790

Reynaud S, Ferrier-Pagès C, Sambrotto R, Juillet-Leclerc A, Jaubert J, Gattuso J-P. Effect of feeding on the carbon and oxygen isotopic composition in the tissues and skeleton of the zooxanthellate coral *Stylophora pistillata*. MEPS 238: 81-89

2001

Reynaud S, Juillet-Leclerc A, Jaubert J, Gattuso J-P. Effect of light on skeletal $\delta^{13}\text{C}$ and $\delta^{18}\text{O}$, and interaction with photosynthesis, respiration and calcification in two zooxanthellate scleractinian corals. Pal Pal Pal 175: 393-404

2000

Gattuso J-P, **Reynaud S**, Furla P, Romaine-Lioud S, Jaubert J, Bourge I, Frankignoulle M. Calcification does not stimulate photosynthesis in the zooxanthellate scleractinian coral *Stylophora pistillata*. Limnol Oceanogr 45(1): 246-250

1999

Reynaud S, Gattuso J-P, Cuif J-P, Jaubert J, Juillet-Leclerc A. A novel culture technique for scleractinian corals: application to investigate changes in skeletal $\delta^{18}\text{O}$ as a function of temperature. MEPS 180: 121-130

