

Òscar Guadayol Roig Curriculum Vitae

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citizenship: Spanish

Career summary

I am a plankton ecologist, broadly interested in how biological organisms (particularly plankton) and communities, respond to environmental fluctuations, both in time and space, of physical properties in the water column and the ocean floor. My emphasis is on variability at fine scales and microscales. During my career, I have had the opportunity of working in four different centers with leading international experts on the small-scale physical-biological interactions. I earned my PhD in Marine Sciences in 2007 at the UPC-BarcelonaTech, for my work in the Institute of Marine Sciences of Barcelona (ICM-CSIC), with Drs. Francesc Peters and Cèlia Marrasé, about the effects of turbulence variability and nutrient inputs on the dynamics of coastal planktonic communities. Between 2008 and 2010 I worked with Prof. Tim Cowles at the College of Oceanic and Atmospheric Sciences in Oregon State University, where I studied the distribution of thin layers of plankton in relation to turbulence, shear, and other physical and chemical variables. Between 2010 and 2013 I worked with Dr. Florence I.M. Thomas at the Hawai'i Institute of Marine Biology, exploring the influence of spatial and temporal environmental variability on the distribution of benthic and planktonic organisms. Currently I am a member of the Physical Ecology Lab in the University of Lincoln, England, working with Dr. Stuart Humphries on understanding the role of bacterial shape from a physical and ecological perspective.

Because of the interdisciplinary nature of my research, during my career I have used a wide range of techniques and approaches, including time series analyses (Guadayol and Peters 2006, Guadayol *et al.* 2009a,b, Guadayol *et al.* 2014, Masaló *et al.* 2008), statistical modeling (Guadayol and Peters 2006, Guadayol *et al.* 2009b,c), flow velocity measurements (Guadayol *et al.* 2009b, Masaló *et al.* 2008), microcosm and mesocosm experiments (Berdalet *et al.* 2007, Bolli *et al.* 2007, Guadayol *et al.* 2009a,c, Iversen *et al.* 2010, Malits *et al.* 2004, Pinhassi *et al.* 2004, Romero *et al.* 2011) and research cruises (Sala *et al.* 2005, Vaqué *et al.* 2008, 2009). I have also worked in a wide range of coastal environments, from polar to tropical, and studied both pelagic and benthic systems, and a wide spectrum of organisms, from bacteria to fishes, although my emphasis has always been on osmotrophic plankton. I have ample experience in both the characterization of physical, chemical and biological variability and the study of biological responses to this variability. Thus, although I am by formation a biologist, my research is truly multidisciplinary, in the intersection of biology, physics, and biogeochemistry.

Education

- PhD 2007, Marine Sciences, UPC – BarcelonaTech.
Qualification: Excellent Cum Laude
Dissertation: “Influence of turbulence variability on osmotrophic plankton dynamics in a coastal area”
Advisors: Dr. Francesc Peters and Dr. Cèlia Marrasé, Institute of Marine Sciences of Barcelona, (ICM-CSIC).
- MAS 2002, Master of Advanced Studies in Environmental Technologies, UPC – BarcelonaTech.
- Teaching certificate 1999, Certificate of Pedagogic Competency, Specialty in Natural Sciences, UPC – BarcelonaTech.
- BSc+MSc 1999, Biology, specialty in Biology of Organisms and Systems, University of Barcelona.

Honors and awards

- 2008-10 Beatriu de Pinós 2007 Postdoctoral Grant, Commission for Universities and Research, Generalitat de Catalunya.
- 2003-06 PhD fellowship I3P-CSIC (Spanish National Research Council).
- 2000 University of Barcelona Research Collaboration Fellowship.
- 1998-99 Spanish Ministry of Education and Culture Research Collaboration Fellowship, Ecology Department, University of Barcelona.
- 1994-98 Spanish Ministry of Education and Culture fellowships for university students.
- 1992-93 Spanish Ministry of Education and Culture grants for English courses at UK.
- 1990-93 Spanish Ministry of Education and Culture fellowships for high school students.

Career History

- 2013-current** Postdoctoral research fellow, Physical Ecology Lab, University of Hull/University of Lincoln. Advisor: Prof. Stuart Humphries.
- 2010-13 Postdoctoral associate, Hawai‘i Institute of Marine Biology (HIMB), School of Oceanic and Earth Science and Technology (SOEST), University of Hawai‘i. Advisor: Dr. Florence I. M. Thomas.
- 2008-10 Postdoctoral Beatriu de Pinós fellow, College of Oceanic and Atmospheric Sciences, Oregon State University, Corvallis, Oregon. Advisor: Prof. Timothy J. Cowles.
- 2007-08 Research assistant, Institute of Marine Sciences of Barcelona (ICM-CSIC).
- 2003-06 PhD student, Institute of Marine Sciences of Barcelona (ICM-CSIC). Advisors: Dr. Francesc Peters & Dr. Cèlia Marrasé.
- 2001-03 Research assistant, Institute of Marine Sciences of Barcelona (ICM-CSIC). Advisors: Dr. Francesc Peters & Dr. Cèlia Marrasé. European Project NTAP.
- 2000 Intern, Scientific and Technological Services, University of Barcelona.

- 1999 Research assistant, Institute of Marine Sciences of Barcelona (ICM-CSIC).
- 1998-99 Intern, Department of Ecology, University of Barcelona. Advisor: Dr. Mikel Zabala.
- 1998-99 Intern, Institute of Marine Sciences of Barcelona (ICM-CSIC). Advisor: Dr. Francesc Peters.

Teaching Experience

- 2014 Academic staff in “Field studies” module: “Diving field trip Cuba”, University of Hull.
- 2014 Lecture on “Scaling down global changes to the size of organisms: lessons from a coral reef study.” for the subject “Topics in biodiversity”, University of Hull.
- 2008-2013 Professor of the subject “Instruments of environmental measurement”, within the Master Degree of Environment, University of Girona, Catalonia, Spain.
- 2007 Instructor in the outreach project “Ciencia en el Puerto” (Science in the Harbour) of the Spanish National Research Council (CSIC), on board of BIO Sarmiento de Gamboa.
- 2012 Supervisor of 2 minority undergraduate students within the URM - Environmental Biology in the Pacific Islands program.

Professional Affiliations

- Member of the Association for the Sciences of Limnology and Oceanography (ASLO) since 2008.
- Member of the Challenger Society for Marine Science since 2016.
- Member of the British Ecological Society since 2016.

Publications

In the SCI (21 publications, 487 total number of citations; h-index: 11 from ISI Web of Knowledge, 16/11/2016):

- Silbiger NJ, **Guadayol Ò.**, Thomas F.I.M, Donahue M.J. 2016. A novel μ CT analysis to calculate coral reef bioerosion and secondary accretion rates. *PLoS One* 11(4): e0153058.
- Guadayol, Ò.**, Silbiger, N., Donahue, M., Thomas, F.I.M. 2014. Patterns in temporal variability of temperature, oxygen and pH along an environmental gradient in a coral reef. *PLoS One* 9(1): e85213.
- Silbiger NJ, **Guadayol Ò.**, Thomas F.I.M, Donahue M.J. .2014. Reefs shift from net accretion to net erosion along a natural environmental gradient. *Mar Ecol Prog Ser.* 18 (515):33-44.
- Kregting, L. T., Bass, A.L., **Guadayol, Ò.**, Yunda, P.O., Thomas, F.I.M. 2013. Effects of oscillatory flow on fertilization in the green sea urchin *Strongylocentrotus droebachiensis*. *PLoS One* 8(9): e76082.
- Romero, E. Peters, F., **Guadayol, Ò.** 2013. The interplay between short-term, mild physicochemical forcing and plankton dynamics in a coastal area. *Limnology and Oceanography* 58(3): 903-920.

- Romero, E., Peters, F., Marrasé, C., **Guadayol, Ò.**, Gasol, J.M., Weinbauer, M.G. 2011. Coastal Mediterranean plankton stimulation dynamics through a dust storm event: An experimental simulation. *Estuarine, Coastal and Shelf Science* 93: 27-39.
- Iversen, K. K., Primicerio, R., Larsen, A., Egge, J.K., Peters, F., **Guadayol, Ò.** Jacobsen, A., Havskum, H., Marrasé, C. 2010. Effects of small-scale turbulence on lower trophic levels under different nutrient conditions. *Journal of Plankton Research* 32(2): 197-208.
- Guadayol, Ò.**, Peters, F., Marrasé, C., Gasol, J.M., Roldán, C., Berdalet, E., Massana, R., Sabata, A. 2009. Episodic meteorological and nutrient load events as drivers of coastal ecosystem dynamics: a time series analysis. *Marine Ecology Progress Series* 381: 139-151.
- Guadayol, Ò.**, Peters, F., Stiansen, J.E., Marrasé, C., Lohrmann, A. 2009. Evaluation of oscillating grids and orbital shakers as means to generate isotropic and homogeneous small-scale turbulence in laboratory enclosures commonly used in plankton studies. *Limnology and Oceanography: Methods* 7:287-303.
- Guadayol, Ò.**, Marrasé, C., Peters, F., Berdalet, E., Roldán, C., Sabata, A., 2009. Responses of coastal osmotrophic planktonic communities to simulated events of turbulence and nutrient load throughout a year. *Journal of Plankton Research* 31(6): 583-600. **Featured article.**
- Simó, R., Vila-Costa, M., Alonso-Sáez, L., Cardelús, C., **Guadayol, Ò.**, Vázquez-Domínguez, E., Gasol, J.M. 2009. Annual DMSP contribution to S and C fluxes through phytoplankton and bacterioplankton in a NW Mediterranean coastal site. *Aquatic Microbial Ecology* 57: 43-55.
- Vaqué, D., **Guadayol, Ò.**, Peters, F., Felipe, J., Malits, A., Pedrós-Alió, C. 2009. Differential response of grazing and bacterial heterotrophic production to experimental warming in Antarctic waters. *Aquatic Microbial Ecology* 54(1): 101-112.
- Masaló, I., **Guadayol, Ò.**, Peters, F., Oca, J. 2008. Analysis of sedimentation and resuspension processes of aquaculture biosolids using an oscillating grid. *Aquacultural Engineering* 38: 135-144. **2010 Honorable Mention Paper Award of the 2010 Aquaculture Engineering Society Awards.**
- Vaqué, D., **Guadayol, Ò.**, Peters, F., Felipe, J., Angel-Ripoll, L. Terrado, R., Lovejoy, C., Pedrós-Alió, C. 2008. Seasonal changes in planktonic bacterivory rates under the ice-covered coastal Arctic Ocean. *Limnology and Oceanography* 53(6): 2427-2438.
- Berdalet, E., Peters, F., Koumandou, V., Roldán, C., **Guadayol, Ò.**, Estrada, M. 2007. Species-specific physiological response of dinoflagellates to quantified small-scale turbulence. *Journal of Phycology* 43 (5), 965–977.
- Bolli, L., Llaveria, G., Garcés, E., **Guadayol, Ò.**, van Lenning, K., Peters, F., Berdalet, E. 2007. Modulation of ecdysal cyst and toxin dynamics of two *Alexandrium* (Dinophyceae) species under small-scale turbulence. *Biogeosciences* 4: 559-567.
- Guadayol, Ò.**, Peters, F. 2006. Analysis of wind events in a coastal area: a tool for assessing turbulence variability for studies on plankton. *Scientia Marina* 70: 9-20.
- Sala, M.M., Arin, L., Balagué, V., Felipe, J., **Guadayol, Ò.**, Vaqué D. 2005. Functional diversity of bacterioplankton assemblages in western Antarctic seawaters during late spring. *Marine Ecology Progress Series* 292: 13-21.
- Malits, A., Peters, F., Bayer-Giraldi, M., Marrasé, C., Zoppini, A., **Guadayol, Ò.**, Alcaraz, M. 2004. Effects of small-scale turbulence on bacteria: A matter of size. *Microbial Ecology*

48: 287-299.

Pinhassi, J., Sala, M.M., Havskum, H., Peters, F., **Guadayol, Ò.**, Malits, A., Marrasé, C. 2004. Changes in bacterioplankton composition under different phytoplankton regimes. *Applied and Environmental Microbiology* 70: 6753-6766.

Outreach:

Guadayol, Ò. 2009. Capes fines de plàncton. *Omnis Cellula* 22 : 8. (In Catalan).

Guadayol, Ò. 2004. Un mar de hielo. *Revista Meda*, 23: 60-66. (In Spanish).

Non-SCI:

Peters, F., **Guadayol, Ò.**, Marrasé, C., Bayer, M., Sabata, A., Felipe, J., Egge, J. 2004. An assessment of the annual variability in a coastal plankton community in relation to turbulence forcing and nutrient load. *ICES CM Documents* 2004: 31-30.

Submitted and in preparation:

Guadayol, Ò., Thornton, K.L., Humphries S. Shape governs directional control in swimming bacteria. In review in Scientific Reports.

Guadayol, Ò., Thomas, F.I.M. Scales of variability of chlorophyll *a* in response to environmental stressors in a tropical bay. In preparation.

Guadayol, Ò., Silbiger, N., Donahue, M., Thomas, F.I.M. Turbulent scales along a gradient of environmental variability on a coral reef. In preparation.

Guadayol, Ò. Nash, J., Moum, J., Cowles, T. Observations of phytoplankton thin layers in the Columbia river tidal plume. In preparation.

Contributed Presentations

2016

Guadayol, Ò., Humphries, S. 2016. Bacterial chemotactic patterns and cell shape. *Microscale Ocean Biophysics, Eilat, Israel*. Oral.

Peters, F., Romero, E., Gallisai, R., **Guadayol, Ò.** 2016. Seasonality of chlorophyll in the Mediterranean. *Planet Ocean, a tribute to Drs. Marta Estrada, Jordi Font and Jordi Salat, pioneers of modern Mediterranean oceanography*. Maó, Spain. Oral.

2015

Guadayol, Ò., Thornton, K.L., Humphries, S. 2015. Experimental exploration of the role of shape and size in swimming performance of motile bacteria. *Microscale Ocean Biophysics, Aspen Winter Meeting*. Aspen Center for Physics, Aspen, Colorado. Poster. **Best postdoctoral poster prize winner.**

2014

Guadayol, Ò., Silbiger N.J., Donahue, M.J., Thomas, F.I.M. 2014. Turbulent scales along a gradient of environmental variability on a coral reef. *2014 Ocean Sciences Meeting*. Honolulu, Hawaii. Oral.

Silbiger, N.J., **Guadayol, Ò.**, Thomas, F.I.M., Donahue, M.J. 2014. Reefs shift from Net

accretion to net erosion with rising ocean acidity. 2014 Ocean Sciences Meeting. Honolulu, Hawaii. Oral.

2013

- Peters, F., Romero, E., Gallisai, R., **Guadayol, Ò.** 2013. The seasonal variability of chlorophyll in the Mediterranean and its relation to nutrient seasonality in coastal areas . Integrating New Advances in Mediterranean Oceanography and Marine Biology (MEDOCEAN). Barcelona, Spain. Poster.
- Romero, E. Peters, F., Marrasé, C., **Guadayol, Ò.** 2013. The interplay between nutrient load, N partitioning and turbulence: three key factors in the dynamics of coastal plankton. Integrating New Advances in Mediterranean Oceanography and Marine Biology (MEDOCEAN). Barcelona, Spain. Poster.
- Guadayol, Ò.**, Silbiger N.J., Donahue, M.J., Thomas, F.I.M. 2013. Revealing patterns in fine-scale temporal variability along an environmental gradient in a tropical coral reef. *Microscale Interactions in Aquatic Environments*. Les Houches, France. Oral.
- Guadayol, Ò.**, Silbiger N., Donahue, M., Thomas, F. 2013. The temporal distribution of small fluctuations in temperature, pH and O₂ is defining spatial heterogeneity in a tropical coral reef. *ASLO 2013 Aquatic Science Meeting*. New Orleans, Louisiana. Oral.
- Peters, F., Romero, E., Gallisai, R. **Guadayol, Ò.** 2013. The seasonal variability of chlorophyll with special emphasis in the Mediterranean. *The 45th Liège colloquium. Primary Production in the ocean: from the synoptic to the global scale*. Liège, Belgium. Oral.
- Romero, E. Peters, F., Marrasé, C., **Guadayol, Ò.** 2013. The interplay between nutrient load, N partitioning and turbulence: three key factors in the dynamics of coastal plankton. *The 45th Liège colloquium. Primary Production in the ocean: from the synoptic to the global scale*. Liège, Belgium. Oral.
- Thomas, F.I.M., **Guadayol, Ò**; Lemus, J. 2013. Partnerships linking education and science in community based management. *ASLO 2013 Aquatic Science Meeting*. New Orleans, Louisiana. Oral.
- Thomas, F.I.M., **Guadayol, Ò.**, Silbiger, N., Toonen, R. J., Donahue, M. 2013. High frequency data reveal small-scale temporal and spatial variations in microhabitats across a coral reef. *ASLO 2013 Aquatic Science Meeting*. New Orleans, Louisiana. Oral.

2012

- Guadayol, Ò.**, Donahue, M., Silbiger N., Thomas, F. 2012. The temporal distribution of small fluctuations in temperature, pH and O₂ is defining spatial heterogeneity in a tropical coral reef. *Pacific Congress on Marine Science and Technology PACON 2012*. Kailua-Kona, Hawai'i. Oral. **Invited presentation.**
- Guadayol, Ò.**, Thomas, F. 2012. Scales of variability of water column parameters in a subtropical coral reef system (Kāneʻohe Bay, Hawai'i). *2nd Joint Symposium on Ocean, Coastal, and Atmospheric Sciences*. Honolulu. Poster.
- Guadayol, Ò.**, Donahue, M., Silbiger N., Thomas, F. 2012. Spatial and temporal analysis of physical stressors on coral reefs in Papahānaumokuākea. *5th Hawaiian Islands Symposium*. Honolulu. Oral.
- Marrasé, C., Peters, F., **Guadayol, Ò.** 2012. Experiments with enclosed natural plankton

communities. When and why are they suitable? *Recent achievements and future directions in Aquatic Mesocosm Research*. Heraklion Crete-Greece. Oral.

Silbiger N., Donahue, M., **Guadayol, Ò.**, Thomas, F. 2012. A multi-scale analysis of bioerosion in the Hawaiian Archipelago. *5th Hawaiian Islands Symposium*. Honolulu. Oral.

Silbiger, N., Donahue, M., **Guadayol, Ò.**, Thomas, F. 2012. Will the accretion-erosion balance persist? Effects of microhabitat variation on bioerosion. *12th International Coral Reef Symposium (ICRS 2012)*. Cairns, Queensland, Australia. Oral.

Silbiger, N., **Guadayol, Ò.**, Thomas, F., Donahue, M. 2012. A fine-scale analysis of bioerosion rates in response to natural environmental variability. *3rd International Symposium on the ocean in a High CO₂ World*. Monterey, California. Oral.

Thomas, F., **Guadayol Ò.** 2012. Spatial and Temporal Analysis of Physical Stressors in Near Shore Environments. *2nd Joint Symposium on Ocean, Coastal, and Atmospheric Sciences*. Honolulu. Oral.

2011

Guadayol, Ò., Cowles, T.J., Wingard, C. 2010. High-resolution velocity shear in relation to thin layers of a vertically migrating dinoflagellate. *2010 Ocean Sciences Meeting*, Portland, U.S. Poster.

2010

Romero, E., Peters, F., **Guadayol, Ò.**, Flo, E., Garcés, E., Camp, J. 2010. Plankton response to natural forcing factors modified by anthropogenic influence in the NW Mediterranean coast. *EUTRO2010*. Nyborg, Denmark. Poster.

2009

Berdalet, E., Llaveria, G., **Guadayol, Ò.**, Peters, F., Marrasé, C., Estrada, M. 2009. What Have We Learned About The Physiology Of Dinoflagellates Under Small Scale Turbulence? *ASLO Aquatic Sciences Meeting 2009*. Nice, France. Oral presentation.

Guadayol, Ò., Marrasé, C., Peters, F., Berdalet, E., Roldán, C., Sabata, A. 2009. Responses of coastal osmotrophic planktonic communities to simulated events of turbulence and nutrient load throughout a year. *ASLO Aquatic Sciences Meeting 2009*. Nice, France. Poster.

Marrasé, C., Peters, F., **Guadayol, Ò.**, Romera, C., Berdalet, E., Pinhassi, J., Gasol, J.M. 2009. Carbon-to-nutrient coupling: what we can learn from seasonal dynamics in a coastal site. *ASLO Aquatic Sciences Meeting 2009*. Nice, France. Poster.

Romero, E., Peters, F., Marrasé, C., **Guadayol, Ò.**, Gasol, J.M., Weinbauer, M.G. 2009. Phytoplankton stimulation dynamics through a NW Mediterranean dust storm event: an experimental simulation. *ASLO Aquatic Sciences Meeting 2009*. Nice, France. Oral.

2007

Guadayol, Ò., Peters, F., Marrasé, C., Berdalet, E., Roldán, C., Gasol, J.M., Massana, R., Sabata, A. 2007. Episodic meteorological and nutrient load events as drivers of a NW Mediterranean coastal ecosystem. *European Geosciences Union General Assembly 2007*. Vienna, Austria. Poster

Guadayol, Ò., Peters, F., Roldán, C., Marrasé, C., Berdalet, E., Gasol, J.M., Sabata, A. 2007.

- Episodic meteorological and nutrient load events as drivers of coastal ecosystem dynamics: a time series analysis. *EUROMECH Colloquium 488. The Influence of Fluid Dynamics on the Behaviours and Distribution of Plankton*. Liverpool, U.K. Oral.
- Guadayol, Ò.**, Peters, F., Roldán, C., Marrasé, C., Berdalet, E., Gasol, J.M., Sabata, A. 2007. Episodic meteorological and nutrient load events as drivers of coastal ecosystem dynamics: A time series analysis. *Simposio GLOBEC-IMBER España*. Valencia, Spain. Poster.
- Peters, F., Marrasé, C., **Guadayol, Ò.**, Alcaraz, M., Dolan, J., Egge, J., Havskum, H., Larsen, A., Stiansen, J.E., Thingstad, F., Vidal, M. 2007. Interaction of nutrient load and turbulence in coastal systems: an experimental simulation. *EUROMECH Colloquium 488. The Influence of Fluid Dynamics on the Behaviours and Distribution of Plankton*. Liverpool, U.K.
- Peters, F., Marrasé, C., **Guadayol, Ò.**, Alcaraz, M., Dolan, J., Egge, J., Havskum, H., Larsen, A., Stiansen, J.E., Thingstad, T.F., Vidal, M. 2007. Interaction of nutrient load and turbulence in coastal systems. *39 International Liège Colloquium on Ocean Dynamics and 3rd Warnemünde Turbulence Days - Turbulence Re-Revisited*. Liège, Belgium. Poster.
- Peters, F., Marrasé, C., **Guadayol, Ò.**, Alcaraz, M., Dolan, J., Egge, J., Havskum, H., Larsen, A., Stiansen, J.E., Thingstad, T.F., Vidal, M. 2007. Simulación experimental de la carga de nutrientes y la turbulencia en sistemas costeros. *Simposio GLOBEC-IMBER España*. Valencia, Spain. Poster.
- Peters, F., Marrasé, C., **Guadayol, Ò.**, Berdalet E., and the NTAP Team. 2007. Experimental simulation of nutrient enrichment and turbulence in coastal systems. *European Geosciences Union General Assembly 2007*. Vienna, Austria. Poster.
- Romero, E., **Guadayol, Ò.**, Peters, F. 2007. Short-term forecasting of Mediterranean coastal ecosystems. *The 6th European Conference on Ecological Modelling (ECEM 07)*. Trieste, Italy. Poster.
- Romero, E., Peters, F., Marrasé, C., **Guadayol, Ò.**, Sabata, A., Laguillo, E. 2007. Atmospheric dry deposition in coastal waters: a neglected key input? *Simposio GLOBEC-IMBER España*. Valencia, Spain. Poster.
- Romero, E., Peters, F., Marrasé, C., **Guadayol, Ò.**, Sabata, A., Laguillo, E. 2007. Atmospheric dry deposition in the NW Mediterranean. *Continental Margins Open Science Conference, IMBER-LOICZ meeting*. Shanghai, China.
- Vaqué, D., **Guadayol, Ò.**, Peters, F., Felipe, J., Angel-Ripoll, L., Terrado, R., Lovejoy, C., Pedrós-Alió, C. 2007. Changes of planktonic bacterivory rates during winter-spring transition under the Ice-covered coastal Arctic Ocean. *10th Symposium on Aquatic Microbial Ecology (SAME-10)*. Faro, Portugal. Oral.
- Vaqué, D., **Guadayol, Ò.**, Peters, F., Felipe, J., Angel-Ripoll, L., Terrado, R., Lovejoy, C., Pedrós-Alió, C. 2007. Seasonal changes in plankton bacterivory rates under the ice in Franklin Bay (Arctic Canada). *Simposio GLOBEC-IMBER España*. Valencia, Spain. Poster.

2006

- Guadayol, Ò.**, Peters, F., Vaqué, D., Felipe, J., Pedrós-Alió, C. 2006. Control of bacterial assemblages in polar oceans. *The Canadian Arctic Shelf Exchange Study 2005/2006 General Meeting*. Winnipeg, Canada. Poster.
- Llaveria, G., Garcés, E., Berdalet, E., Sampetro, N., Anglès, S., **Guadayol, Ò.** 2006. Response

to small-scale turbulence by natural microphytoplankton assemblages along a natural *Alexandrium minutum* bloom event. *12th International Conference on Harmful Algae*. Copenhagen, Denmark. Poster.

Masaló, I., **Guadayol, Ò.**, Peters, F., Oca, J. 2006. Biosolids resuspension in aquaculture tank is affected by disaggregation and consolidation time. *AQUA 2006*. Firenze, Italy. Poster.

Peters, F., **Guadayol, Ò.**, Romero, E., Marrasé, C. 2006. A first attempt to start to address short-term turbulence and nutrient load variability as factors to determine coastal production. *European Geosciences Union General Assembly 2006*. Vienna, Austria. Oral.

2005

Guadayol, Ò., Peters, F. 2005. Statistical models of wind events to determine turbulence in water. *International Cross-Disciplinary Symposium on Physics and Biology*. Oslo, Norway. Oral.

Guadayol, Ò., Peters, F., Marrasé, C., Sabata, A. 2005. Changes in the response of phytoplankton to turbulence during an annual cycle. *Unity in Diversity: A conference on Ecology after the legacy of Ramon Margalef*. Barcelona, Spain. Poster.

Guadayol, Ò., Peters, F., Vaqué, D., Felipe, J., Pedrós-Alió, C. 2005. Balance between bacterial growth and protozoan grazing in polar oceans. *ASLO Summer Meeting*. Santiago de Compostela, Spain. Oral.

Masaló, I., **Guadayol, Ò.**, Reig, L., Oca, J. 2005. Study of sedimentation dynamics of fish faeces using an oscillating grid. *Aquaculture Europe 2005*. Trondheim, Norway.

Peters, F., **Guadayol, Ò.**, Marrasé, C., Sabata, A. 2005. Plankton response to turbulence and nutrient load in an annual cycle: a tribute to Margalef. *ASLO Summer Meeting*. Santiago de Compostela, Spain. Oral.

Peters, F., **Guadayol, Ò.**, Romero, E., Marrasé, C. 2005. Turbulence and nutrient loads to determine production along a coastal planktonic ecosystem. *Unity in Diversity: A conference on Ecology after the legacy of Ramon Margalef*. Barcelona, Spain. Oral.

Roldán, C., Berdalet, E., Marrasé, C., Sabata, A., Vidal, M., **Guadayol, Ò.**, Peters, F. 2005. RNA/DNA and protein/DNA ratios: evaluation of the physiological state of plankton communities under different turbulence and nutrient conditions. *ASLO Summer Meeting*. Santiago de Compostela, Spain. Oral.

Vaqué, D., **Guadayol, Ò.**, Peters, F., Felipe, J., Pedrós-Alió, C. 2005. Effect of temperature on protist grazing on bacteria in Antarctic waters. *ASLO Summer Meeting*. Santiago de Compostela, Spain.

2004

Guadayol, Ò., Peters, F., Marrasé, C. 2004. Estimation of wind generated small-scale turbulence: statistical distributions in a coastal area and some implications for the planktonic community. *ICES Workshop on Future Directions in Modelling Physical-Biological Interactions*. Barcelona, Spain. Poster.

Marrasé, C., Bayer, M., **Guadayol, Ò.**, Roldán, C., Berdalet, E., Vidal, M., Felipe, J., Peters, F. 2004. Importance of initial conditions in determining the response of plankton to turbulence and nutrients: a time series approach. *European Geosciences Union 1st General Assembly*. Nice, France. Poster.

- Marrasé, C., Peters, F., Egge, J., Jacobsen, A., Vidal, M., **Guadayol, Ò.**, Roldán, C., Berdalet, E., Stiansen, J.E. Thingstad, T.F. 2004. Thresholds for plankton yield in coastal waters. Significance of integrated approaches to nutrient inputs and turbulence conditions. *ASLO/TOS Ocean Research Conference*. Honolulu, USA. Poster.
- Peters, F., **Guadayol, Ò.**, Marrasé, C., Bayer, M., Sabata, A., Felipe, J., Egge, J. 2004. An assessment of the annual variability in a coastal plankton community in relation to turbulence forcing and nutrient load. *ICES Annual Science Conference*. Vigo, Spain. Oral.
- Peters, F., Marrasé, C., Alcaraz, M., Dolan, J.R., Egge, J., **Guadayol, Ò.**, Havskum, H., Jacobsen, A., Stiansen, J.E., Vidal, M. 2004. Plankton community level responses to turbulence and nutrient load: experimental results. *ICES Workshop on Future Directions in Modelling Physical-Biological Interactions*. Barcelona, Spain. Oral.
- Peters, F., Marrasé, C., Alcaraz, M., Dolan, J.R., **Guadayol, Ò.**, Havskum, H., Jacobsen, A., Stiansen, J.E., Vidal, M. 2004. Plankton community level responses to turbulence and nutrient load: implications for coastal zones. *ASLO/TOS Ocean Research Conference*. Honolulu, USA. Oral.
- Vidal, M., Sabata, A., Roldán, C., Peters, F., Marrasé, C., **Guadayol, Ò.**, Bayer, M. 2004. Variable POM stoichiometry in Mediterranean plankton communities: Combined effects of turbulence and phosphorus limitation. *European Geosciences Union 1st General Assembly*. Nice, France.

2003

- Guadayol, Ò.**, Peters, F., Marrasé, C. 2003. Estimation of wind generated small-scale turbulence: statistical distributions in a coastal area and some implications for the planktonic community. *2003 EGS-AGU-EUG Joint Assembly*. Nice, France. Poster.

2002

- Malits, A., Peters, F., Bayer, M., Marrasé, C., Zoppini, A., **Guadayol, Ò.**, Alcaraz, M. 2002. Effects of small-scale turbulence on bacteria: a matter of size. *8th Symposium on Aquatic Microbial Ecology*. Taormina, Italy. Oral.

2001

- Peters, F., **Guadayol, Ò.**, Marrasé, C., Bayer, M., Sabata, A., Felipe, J., Egge, J. 2004. An assessment of the annual variability in a coastal plankton community in relation to turbulence forcing and nutrient load. *ICES Annual Science Conference*. Vigo, Spain. Oral.
- Peters, F., Marrasé, C., **Guadayol, Ò.** 2001. Multiple approach to study the effects of turbulence on plankton and nutrient dynamics. *ELOISE 4th Open Science Meeting*. Rende, Italy.

Oceanographic cruises

(10 cruises; total time at sea: 199 days.)

Papahānaumokuākea 2012 Maritime Heritage Expedition. Area: Papahānaumokuākea Marine National Monument (North Western Hawaiian Islands). 5-25 July 2012. Chief Scientist: Kelly Gleason. (PMNM Maritime Heritage Lead Scientist).

RAMP2011. Reef Assessment & Monitoring Program. Area: Papahānaumokuākea Marine National Monument (NorthWestern Hawaiian Islands). 23 July - 20 August 2011. Chief

- Scientist: Scott Godwin (Papahānaumokuākea Marine National Monument).
- ROV09-W0906B. ROV-based System for Sampling Planktonic Thin Layers. Area: Oregon coast. 16-26 June 2009. Research vessel: R/V Wecoma. Chief scientist: Timothy J. Cowles (College of Oceanic and Atmospheric Sciences, Oregon State University).
- SUCCE3-W0907B. Seasonal upwelling. Area: Oregon coast. 29 July – 11 August 2009. Research vessel: R/V Wecoma. Chief scientist: Burke Hales (College of Oceanic and Atmospheric Sciences, Oregon State University).
- CMOP-09. Science and Technology Center for Coastal Margin Observation and Prediction. Area: Oregon coast and the Columbia River. 1-14 September 2009. Research vessel: R/V Point Sur. Chief scientist: Christopher Wingard (College of Oceanic and Atmospheric Sciences, Oregon State University).
- CMOP-W0809B. Science and Technology Center for Coastal Margin Observation and Prediction. Area: Oregon coast and the Columbia River. 17 September-1 October 2008. Research vessel: R/V Wecoma. Chief scientists: Timothy J. Cowles and Steve Pierce (College of Oceanic and Atmospheric Sciences, Oregon State University).
- CASES. Canadian Arctic Shelf Exchange Study. Area: Beaufort Sea. 01/08/-02/18/2004. Research vessel: CCGS Amundsen. Chief scientist: Jody Demming (School of Oceanography, University of Washington).
- TEMPANO. Efecto de la temperatura sobre la estructura y el metabolismo de las comunidades planctónicas. Area: Southern Ocean. 24 November – 22 December 2002. Research vessel: BIO Hespérides. Chief scientist: Dolors Vaqué (Institute of Marine Sciences of Barcelona, CSIC, Spain).
- HIVERN-2000. Area: Catalan Sea (NW Mediterranean). 28 January- 11 February 2000. Research vessel: B/O García del Cid. Chief scientist: Jordi Salat (Institute of Marine Sciences of Barcelona, CSIC, Spain).
- HIVERN-1999. Area: Catalan Sea (NW Mediterranean). 20-28 February 1999. Research vessel: B/O García del Cid. Chief scientist: Jordi Salat (Institute of Marine Sciences of Barcelona, CSIC, Spain).

Experimental workshops

- NTAP (*Nutrient dynamics mediated through turbulence and plankton interactions*). Mesocosm experiment in the Marine Biology Station, University of Bergen. Espesrend, Norway. 8-29 July 2001. PI: Celia Marrasé (Institute of Marine Sciences of Barcelona, CSIC, Spain).
- NTAP (*Nutrient dynamics mediated through turbulence and plankton interactions*). Mesocosm experiments in the Marine Biology Station, University of Bergen. Espesrend, Norway. 17 June -7 July 2002. PI: Celia Marrasé (Institute of Marine Sciences of Barcelona, CSIC, Spain).

Participation in Scientific Projects

- ADEPT Aerosol Deposition and ocean Plankton dynamics. 2012-2014. Funding Agency: Spanish Ministry of Science and Innovation (CTM2011-23458). PI. Francesc Peters, Institute of Marine Sciences of Barcelona (ICM-CSIC), Spain.

VARITEC	Multiscale approach to the variability of turbulence and its effect on the dynamics and structure in the NW coastal ecosystem. 2004-2007. Funding agency: Plan Nacional del Ministerio de Ciencia y Tecnología (REN2003-08071-C02). PI: Francesc Peters, Institute of Marine Sciences of Barcelona (ICM-CSIC), Spain.
TURFI	Effect of small-scale turbulence on harmful algae proliferations. 2002-2005. Funding agency: Ministerio de Ciencia y Tecnología (REN2002-01591/MAR). Project coordinator: Elisa Berdalet, Institut de Ciències del Mar (CSIC), Spain.
NTAP	Nutrient dynamics mediated through turbulence and plankton interactions. 2001-2004. Funding agency: European Commission (EVK3-CT-2000-00022). PI: Cèlia Marrasé, Institut de Ciències del Mar (ICM-CSIC), Spain.
CASES	Canadian Arctic Shelf Exchange Study Area: Mar de Beaufort. 2002-2004. PI: Louis Fortier (Université Laval, Quebec, Canada).
CMOP	Science and Technology Center for Coastal Margin Observation and Prediction. 2006-2011. Funding agency: National Science Foundation (0424602). PI: António Baptista (Oregon Health & Science University, U.S.)
TEMPANO	Efecto de la temperatura sobre la estructura y el metabolismo de las comunidades planctónicas. 2002-2004. Funding agency: Ministerio de Ciencia y Tecnología (REN2001-0588/ANT). PI: Dolors Vaqué (Instituto de Ciencias del Mar , CSIC, España).
ROV09	ROV-based System for Sampling Planktonic Thin Layers. 2006-2010. Funding agency: National Science Foundation (0624092). PI: Timothy J. Cowles and Kelly Benoit-Bird (College of Oceanic and Atmospheric Sciences, Oregon State University, U.S.).
GEMM	Grup d'Ecologia Microbiana Marina 2005-2008. Funding agency: Comissió Interdepartamental de Recerca i Innovació Tecnològica, Generalitat de Catalunya (2005SGR/00872). PI: Carles Pedrós-Alió (Instituto de Ciencias del Mar , CSIC, España).
Form and function in a microbial world	2013-2018. Funding Agency: Leverhulme Trust. PI: Stuart humphries, University of Lincoln, UK.

Professional service

Scientific sessions organized

Pansch, C, **Guadayol, Ò.**, Havenhand, J., Thomas, F., Thomsen, J. 2014. Environmental variability and climate change: linking environmental variation and organism responses across scales. *Ocean Science Meeting 2014*. Honolulu, Hawaii.

Reviewer

Referee for Aquatic Sciences; Environmental Monitoring and Assessment; Limnology and Oceanography; Limnology and Oceanography- Fluids and Environments; Marine Ecology;

Marine Ecology – Progress Series; Methods in Oceanography; PLOS ONE; Scientia Marinañ Scientific Reports.

Departmental duties

Organizer of the Ecology and Environmental Research Group meetings at the University of Hull. 2013-2014.

Member of the Athena SWAN committee of the School of Life Sciences in the University of Lincoln since 2015.

Synergistic activities

Collaboration with NORTEK AS to design and test a customized laboratory ADV (Guadayol et al. 2009c) within the E.U. Project NTAP.

Further Studies

NAUI Master diver and NITROX diver. 2011. University of Hawai‘i Diving Safety Program.

Scuba Diver Rescue, and CPR and first Aid for Professional Divers certifications. 2011. University of Hawai‘i Diving Safety Program, 2011.

Advanced Course in Marine Ecology: *Spatial pattern in plankton distributions*, by Prof. Timothy J. Cowles, College of Oceanic and Atmospheric Sciences, Oregon State University. 11-22 June 2007.

Advanced Course in Marine Ecology: *Behavioural ecology of plankton organisms, small-scale physical-biological interactions in the plankton*, by Prof. Thomas Kiørboe, Danish Institute for Fisheries Research. 30 January-10 February 2006.

ICES Workshop on Future Directions in Modelling Physical–Biological Interactions. Institute of Marine Sciences, CSIC. 7-9 March 2004

Course on Biodiversity, by Prof. Gonzalo Halffter, Instituto de Ecología, Xalapa, México. 2000.

ACUC Open Water Diver. 1997. Club d'Immersion de Biologia, University of Barcelona.

References

Prof. Timothy J. Cowles (post-doctoral advisor)

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