

CURRICULUM VITAE

João Miguel Sousa da Silva
September 2016

1. Personal data

Name: João Miguel Sousa da Silva

Birth: Peniche, Portugal, March 24th, 1968

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2. Education

2004. Ph.D in Ecology, sub-theme Ecophysiology. Marine Sciences School, Algarve University.

1998. MSc degree in Aquaculture, Algarve University.

1995. BSc and Honours in Marine Biology, Algarve University.

3. Professional career

2006- Research scientist, CCMAR - Centre of Marine Sciences, Algarve, Portugal.

2004-2006 Post Doc research fellowship (Grant SFRH/BPD/11610/02), Centre of Marine Sciences (CCMAR), Portugal.

1999-2006 Invited assistant professor (partial time, 40%), Algarve University, Portugal.

1998-2003. Ph.D student (Grant PRAXIS XXI/BD/15782/98), Algarve University, Portugal.

1996-1998. Masters student (Grant PRAXIS XXI/BM/7239/95), Algarve University, Portugal.

1992-1996. Full-time permanent teacher at Escola Profissional de Gestão e Tecnologias Marítimas de Quarteira, Portugal.

4. Research projects, contracts and grants

4.1. Ongoing

- 2015-2018 GrassMet - Climate change effects on seagrass secondary metabolism: ecological implications (PTDC/MAR-EST/4257/2014) (coordinator).
- 2015-2018 Riavalue - Valuation of the ecosystem services delivered by Ria Formosa lagoon (PTDC/MAR-EST/3223/2014) (team member).
- 2015-2018 Seaox - Using acoustics for monitoring the metabolism of marine ecosystems (PTDC/EEI-PRO/2598/2014) (team member).
- 2014-2017 Metabolic feedbacks between rhodoliths and seagrasses in an acidified ocean. Special Visiting Researcher grant (407365/2013-3), Host researcher – Paulo Horta, UFSC - Universidade Federal de Santa Catarina, Brazil.

4.2. Concluded

2015. Restoration of seagrass habitats in Gibraltar. Research contract, Department of the environment, H.M. Government of Gibraltar/CCMAR (team member).
2015. Evaluation of algal removal impact in the area adjacent to the thermoelectric power plant in Sines bay. Research contract, Hidromod/CCMAR (team member).
- 2013-2015 Highgrass – High-CO₂ effects on seagrass photosynthetic ecology (PTDC/MAR-EST/3687/2012) (coordinator).
- 2011-2014 Mäerl calcification, photosynthesis and metabolism in an acidified ocean (PTDC/MAR/115789/2009) (coordinator).
- 2010-2014 COST action ES0906 - Seagrass productivity: From genes to ecosystem management (dissemination coordinator).
- 2010-2013 Shifts from seagrass to seaweed dominated systems (INVASEA) (PTDC/MAR/098069/2008) (team member).
- 2010-2013 Whole-system metabolism and CO₂ fluxes in a coastal lagoon dominated by saltmarsh and seagrass meadows (PTDC/AAC-CLI/103348/2008) (team member).
- 2009-2011 Gestion environnementale des zones lagunaires à vocation aquacole (ECO-LAGUNES) (Interreg-Sudoe SOE1/P2/F153) (team member).
- 2009-2011 Avaliação do Estado Ecológico das Massas de Água Costeiras e de Transição e do Potencial Ecológico das Massas de Água Fortemente Modificadas (EEMA). Research contract, INAG/CCMAR (team member).
- 2010 Carbon metabolism of a tropical seagrass community: The role of other community elements in the global carbon budget. ASSEMBLE Infrastructure

- Access, Interuniversity Institute for Marine Sciences in Eilat, Israel (coordinator).
- 2006-2009 Improvement of the cost effectiveness of marine land-based aquaculture facilities through use of Constructed Wetlands with *Salicornia* as an environmentally friendly biofilter and a valuable by-product - Envirophyte. EU CRAFT contract COOP-CT-2006 – 032167 (team member).
- 2006-2009 MAERLPICON - Estado de conservación de los fondos de maërl en el Atlántico de la Península Ibérica. Ministerio de Educación y Ciencia, Universidade de La Coruña, Spain (team member).
- 2006-2008 Volatile organic carbon emissions by marine vegetation (Cooperation Agreement GRICES/CSIC, with Carlos Duarte, IMEDEA, Islas Baleares) (team member).
- 2006-2008 Evaluation of algal removal impact in the area adjacent to the thermoelectric power plant in Sines bay. Research contract, Hidromod/CCMAR (team member).
- 2005-2008 Carbon uptake by Ria Formosa intertidal communities (POCTI/MAR/58172/2004) (coordinator).
- 2005-2008 Green algal blooms in Ria Formosa and adjacent beaches (POCTI/MAR/58427/2004) (team member).
- 2004-2007. Global change effects on the Portuguese marine flora on a long time scale (POCTI/BSE/48918/2002) (team member).
- 2004-2006. Determinación del índice $\delta^{13}\text{C}$ y su relación con la actividad anhidrasa carbónica en productores primarios de la costa sur de la Península Ibérica (CRUP/MCT Cooperation Agreement, with Jesus Mercado, Instituto Español de Oceanografía, Málaga) (team member).
2004. Characterization of the seagrass and macroalgae populations on Rio Arade estuary. Research contract, Instituto Português do Sul/CCMAR (team member).
2004. Evaluation of *Halopteris scoparia* stands on the southern Portuguese coast. Research contract, CODIF/CCMAR (team member).
- 2002-2003. DOM production in contrasting communities in the Ria Formosa (South Portugal) and export to the Atlantic Ocean (Cooperation Agreement ICCTI/CSIC, with Carlos Duarte, IMEDEA, Islas Baleares) (team member).
- 2001-2004. M&MS – Monitoring and management of European seagrasses (EVK3-CT-2000-00044) (colaborator).
- 2001-2004. EPICAH – Ecological and population impact of commercial agarophyte harvesting (FCT – PDCT/P/Mar/15299/1999) (colaborator).
- 2000-2004. SEAPURA – Species diversification and improvement of aquatic production in seaweeds purifying effluents from integrated fish farm (EC-QLRT-1999-3133) (colaborator).

1999-2000. F-ECTS, Feed-back of estuarine circulation and transport of sediment on phytobenthos (MAS3-CT97-0145) (team member).

5. Publications

5.1. Papers

Sordo L, Santos R, Reis J, Shulika A, Silva J (2016) A direct CO₂ control system for ocean acidification experiments: testing effects on the coralline red algae *Phymatolithon lusitanicum*. *Peer J* 4:e2503, doi: 10.7717/peerj.2503

Olivé I, **Silva J**, Costa MM, Santos R (2016) Estimating seagrass community metabolism using benthic chambers: the effect of incubation time. *Estuaries and Coasts* 39:138-144, doi: 10.1007/s12237-015-9973-z

Sandoval-Gil JM, Barrote I, **Silva J**, Olivé I, Costa MM, Ruiz JM, Marín-Guirao L, Sánchez-Lizaso JL, Santos R (2015). Plant-water relations of intertidal and subtidal seagrasses. *Marine Ecology*, doi: 10.1111/maec.12230

Felisberto P, Jesus SM, Zabel F, Santos R, **Silva J**, Gobert S, Beer S, Bjork M, Mazzuca S, Procaccini G, Runcie JW, Champenois W, Borges AV (2015) Acoustic monitoring of O₂ production of a seagrass meadow. *Journal of Experimental Marine Biology and Ecology* 464: 75-87, doi: 10.1016/j.jembe.2014.12.013

Costa MM, Barrote I, **Silva J**, Olivé I, Alexandre A, Albano S, Santos R (2015) Epiphytes modulate *Posidonia oceanica* photosynthetic production, energetic balance, antioxidant mechanisms and oxidative damage. *Frontiers in Marine Science*. doi: 10.3389/fmars.2015.00111

Lauritano C, Ruocco M, Dattolo E, Buia MC, **Silva J**, Santos R, Olivé I, Costa MM, Procaccini G (2015) Response of key stress-related genes of the seagrass *Posidonia oceanica* in the vicinity of submarine volcanic vents. *Biogeosciences*, doi: 10.5194/bgd-12-4947-2015

Silva J, Barrote I, Costa MM, Albano S, Santos R (2013). Physiological responses of *Zostera marina* and *Cymodocea nodosa* to light-limitation stress. *PLoS ONE*, doi: 10.1371/journal.pone.0081058

Rotini A, Belmonte A, Barrote I, Micheli C, Peirano A, Santos R, **Silva J**, Migliore L (2013) Effectiveness and consistency of a suite of descriptors for assessing the ecological status of seagrass meadows (*Posidonia oceanica* L. Delile). *Estuarine, Coastal and Shelf Science*, doi: 10.1016/j.ecss.2013.06.015.

Mazzuca S, Bjork M, Beer S, Felisberto P, Gobert S, Procaccini G, Runcie J, **Silva J** et al. (2013) Establishing research strategies, methodologies and technologies to link genomics and proteomics to seagrass productivity, community metabolism and ecosystem carbon fluxes. *Frontiers in Plant Science* 4, doi: 10.3389/fpls.2013.00038

Vieira VMNCS, Martins F, **Silva J**, Santos R (2013) Numerical tools to estimate the flux of a gas across the air–water interface and assess the heterogeneity of its forcing functions, *Ocean Science* 9: 355-375, doi: 10.5194/os-9-355-2013

García-Marín P, Cabaço S, Hernández I, Vergara JJ, **Silva J**, Santos R (2013) Multi-metric index based on the seagrass *Zostera noltii* (ZoNI) for ecological quality assessment of coastal and estuarine systems in SW Iberian Peninsula. *Marine Pollution Bulletin* 68: 46-54

Alexandre A, **Silva J**, Buapet P, Björk M, Santos R (2012) Effects of CO₂ enrichment on photosynthesis, growth and nitrogen metabolism of the seagrass *Zostera noltii*. *Ecology and Evolution* 2: 2625-2635

Alexandre A, **Silva J**, Bouma TJ, Santos R (2011) Inorganic nitrogen uptake kinetics and whole-plant nitrogen budget in the seagrass *Zostera noltii*. *Journal of Experimental Marine Biology and Ecology* 401: 7-12

Alexandre A, **Silva J**, Santos R (2010) Inorganic nitrogen uptake and related enzymatic activity in the seagrass *Zostera noltii*. *Marine Ecology* 31: 539-545

Silva J, Sharon Y, Santos R, Beer S (2009) Measuring seagrass photosynthesis: Methods and applications. Invited review. *Aquatic Biology* 7: 127-141

Runcie JW, Paulo D, Santos R, Sharon Y, Beer S, **Silva J** (2009) Photosynthetic responses of *Halophila stipulacea* to a light gradient: I – In situ Energy Partitioning of Non-photochemical Quenching. *Aquatic Biology* 7: 143-152

Sharon Y, **Silva J**, Santos R, Runcie J, Chernihovsky M, Beer S (2009) Photosynthetic responses of *Halophila stipulacea* to a light gradient: II – Plastic Acclimations Following Transplantations. *Aquatic Biology* 7: 153-157

Silva J, Santos R (2009) Reply to comments on “Underwater measurements of carbon dioxide evolution in marine plant communities: a new method” by Gwenaél Abril. *Estuarine, Coastal and Shelf Science* 82: 361–362

Silva J, Feijóo P, Santos R (2008) Underwater measurements of carbon dioxide evolution in marine plant communities: a new method. *Estuarine, Coastal and Shelf Science* 78: 827–830

Mata L, **Silva J**, Schuenhoff A, Santos R (2007) Is the tetrasporophyte of *Asparagopsis armata* (Bonnemaisoniales) limited by inorganic carbon in integrated aquaculture? *Journal of Phycology* 43: 1252–1258

Mateos-Naranjo E, Redondo-Gómez S, **Silva J**, Santos R, Figueros ML (2007) Effect of prolonged flooding on the invader *Spartina densiflora* Brong. *Journal of Aquatic Plant Management* 45: 121-123

Figueroa FL, Santos R, Alvarez RC, Mata L, Pinchetti JLG, Huovinen P, Matos J, Schuenhoff A, **Silva J** (2006) The use of chlorophyll fluorescence for monitoring photosynthetic conditions of two tank cultivated red macroalgae using fishpond effluents. *Botanica Marina* 49: 275-282

Mata L, **Silva J**, Schuenhoff A, Santos R (2006) The effects of light and temperature on the photosynthesis of the *Asparagopsis armata* tetrasporophyte cultivated in tanks. *Aquaculture* 252: 12-19

Silva J, Santos R, Calleja, ML, Duarte CM (2005) Submerged versus air-exposed intertidal macrophyte productivity: from physiological to community-level assessments. *Journal of Experimental Marine Biology and Ecology* 317: 87-95

Santos R, **Silva J**, Alexandre A, Navarro N, Barrón C, Duarte CM (2004). Ecosystem metabolism and carbon fluxes of a tidal-dominated coastal lagoon. *Estuaries* 27: 977-985

Alexandre A, **Silva J**, Santos R. (2004) The maximum nitrate reductase activity of the seagrass *Zostera noltii* (Hornem.) varies along its vertical distribution. *Journal of Experimental Marine Biology and Ecology* 307: 127-135

Silva J, Santos R (2004) Can chlorophyll fluorescence be used to estimate photosynthetic production in the seagrass *Zostera noltii*? *Journal of Experimental Marine Biology and Ecology* 307: 207-216

Mercado JM, Niell FX, **Silva J**, Santos R (2003) Use of light and inorganic carbon acquisition by two morphotypes of *Zostera noltii* Hornem. *Journal of Experimental Marine Biology and Ecology* 297: 71-84

Silva J, Santos R (2003) Daily variation patterns of seagrass photosynthesis along a vertical gradient. *Marine Ecology Progress Series* 57: 37-44

Silva J, Santos R, Serôdio J, Melo R (1998) Light response curves for *Gelidium sesquipedale* from different depths, determined by two methods: O₂ evolution and chlorophyll fluorescence. *Journal of Applied Phycology* 10: 295-301

5.2. Book chapters

Horta PA, Berchez FAS, Nunes JMC, Scherner F, ..., Hall-Spencer J, Riosmena-Rodriguez, **Silva JMS**, Figueiredo M (2015) Monitoramento de bancos de rodolitos. In: Turra A, Denadai MR (eds.) Protocolos para o Monitoramento de Habitats Bentônicos Costeiros. Rede de Monitoramento de Habitats Bentônicos Costeiros (ReBentos), Instituto Oceanográfico da Universidade de São Paulo, São Paulo, Brazil, p 48-61, ISBN: 978-85-98729-25-1

Silva J, Santos R (2003b) Comparative ecophysiology of *Gelidium sesquipedale* (Rhodophyta) erect fronds and prostrate system. In: Chapman ARO, Anderson RJ, Vreeland VJ, Davison IR (eds.) *Proceedings of the 17th International Seaweed Symposium*. Oxford University Press, Oxford, England, p 417-424, ISBN: 978-01-98507-42-0

6. Scientific communications

6.1. Invited oral communications

Silva J (2014) Chlorophyll *a* fluorescence: the potential of continuous measurements. Brazilian Phycological Congress, São Lourenço MG, Brazil.

Silva J (2012) High CO₂ research in marine mesocosm systems: key points of the experimental design. National Botanical Congress, Joinville, Brazil.

Silva J (2012) Fotossíntese e metabolismo de máerl na Península Ibérica: situação presente e respostas à acidificação oceânica. Universidade Federal do Rio de Janeiro, Brazil.

Silva J, Santos R (2012) European seagrass network: “Seagrass productivity, from genes to ecosystem management”. Mediterranean Seagrass Workshop, Essaouira, Morocco.

Silva J, Santos R (2012) High CO₂ research in mesocosm systems: key points in the experimental design. COST Action ES0906 Workshop: CO₂/OA effects on seagrass meadows, Nottingham, UK.

Silva J (2010) From seagrass photosynthesis to community metabolism. Interuniversity Institute for Marine Sciences, Eilat, Israel.

Silva J (2008) Seagrass photosynthesis: levels of approach (an ecologist view). 8th GAP International Workshop on Gross and Net Primary Production: Closing the Gap between Concepts and Measurements, Eilat, Israel.

6.2. Other oral communications

Ruocco M, Musacchia F, Olivé I, Costa MM, Barrote I, Santos R, **Silva J**, Sanges R, Procaccini G (2015) Transcriptome profiling and differential expression analysis of *Cymodocea nodosa* response to simulated CO₂-driven ocean acidification: a first insight. Twelfth Annual Meeting of the Bioinformatics Italian Society, Milan, Italy.

Ruocco M, Procaccini G, Musacchia F, Sanges R, Olivé I, Costa MM, Barrote I, Santos R, **Silva J** (2015) *Cymodocea nodosa* response to simulated CO₂-driven ocean acidification: a first insight from global transcriptome profiling. Mediterranean Seagrass Workshop, Oristano, Italy.

Sordo L, Santos R, Barrote I, **Silva J** (2015) Long-term effects of ocean acidification on free-living coralline algae. Third International Symposium on the Effects of Climate Change on the World's Oceans, Santos, Brasil.

Olivé I, Costa MM, Barrote I, Santos R, **Silva J** (2015) Productivity of the seagrass *Posidonia oceanica* near volcanic vents: two different case studies. 2015 Aquatic Sciences Meeting, Association for the Sciences of Limnology and Oceanography, Granada, Spain.

Silva J, Costa MM, Olivé I, Barrote I, Ruocco M, Lauritano C, Procaccini G, Santos R (2015) Seagrass photosynthetic responses to a natural high-CO₂ environment: physiology meets gene expression. Aquatic Sciences Meeting, Association for the Sciences of Limnology and Oceanography, Granada, Spain.

Silva J, Olivé I, Costa MM, Barrote I, Procaccini G, Mazzuca S, Vizzini S, Santos R (2014) Seagrass photo-physiological responses in a natural high-CO₂ environment. Seagrasses in Europe: Threats, Responses and Management, Olhão, Portugal.

Olivé I, **Silva J**, Costa MM, Santos R (2014) Estimation of seagrass community metabolism using benthic chambers: effects of incubation duration. Seagrasses in Europe: Threats, Responses and Management, Olhão, Portugal.

Migliore L, Barrote I, Buia MC, Peirano A, Santos R, **Silva J** (2014) Total phenol content and foliar pigments are promising monitoring tools of plant physiological stress and environmental disturbance. Seagrasses in Europe: Threats, Responses and Management, Olhão, Portugal.

Olivé I, **Silva J**, Costa M, Santos R (2013) CO₂ effects on the seagrass *Cymodocea nodosa*: two different approximations. Coastal and Estuarine Research Federation's 22th Biennial International Conference, San Diego CA, USA.

Santos R, **Silva J**, Olivé I, Costa MM, Cabaço S, Borges AV, Champenois W, Runcie J (2013) Seagrass production: linking individual, community and ecosystem carbon fluxes. Coastal and Estuarine Research Federation's 22th Biennial International Conference, San Diego CA, USA.

Silva J, Runcie J, Barrote I, Costa, MM, Santos R (2012) Compared photophysiology of native seagrasses with an invasive macroalga in Sydney Harbour, Australia. 10th International Seagrass Biology Workshop, Búzios, Brasil.

Olivé I, **Silva J**, Sordo L, Fragoso B, Santos R (2012) Methodological inter-comparison for net community production estimates in seagrass meadows. 10th International Seagrass Biology Workshop, Búzios, Brasil.

Alexandre A, **Silva J**, Buapet P, Björk M, Santos R (2012) Effects of CO₂ enrichment on photosynthesis, growth and nitrogen metabolism of the seagrass *Zostera noltii*. 3rd Mediterranean Seagrass Workshop, Essaouira, Morocco.

Alexandre A, **Silva J**, Buapet P, Björk M, Santos R (2012) Effects of CO₂ enrichment on photosynthesis, growth and nitrogen metabolism of the seagrass *Zostera noltii*. COST Action ES0906 Workshop: CO₂/OA effects on seagrass meadows, Nottingham, UK.

Olivé I, Alexandre A, Martínez-Gregó B, Barrón C, Hernández I, **Silva J**, Santos R (2012) Practical problems of measuring CO₂ and O₂. COST Action ES0906 Workshop: CO₂/OA effects on seagrass meadows, Nottingham, UK.

Silva J, Santos R (2011) Seasonal variations of *Phymatolithon calcareum* (mäerl) photosynthesis in southern Portugal. 5th European Phycological Congress, Rhodes, Greece.

Barrote I, Santos R, **Silva J** (2011) Physiological stress indicators in seagrasses. COST ES0906 Workshop Linking ecophysiology and ecogenomics in seagrass systems, Stazione Zoologica Anton Dohrn, Naples, Italy.

Silva J, Barrote I, Albano S, Costa M, Neves P, Graça G, Sharon Y, Beer S, Santos R (2010) Effects of in situ shading on the photophysiology of *Zostera marina* and *Cymodocea nodosa*. World Seagrass Conference, Phuket, Thailand.

García-Marín P, Hernández I, Cabaço S, Brun FG, **Silva J**, Santos R, Vergara JJ (2010) Seagrass Indicator for South Iberian Peninsula (SISIP): first steps to fulfill the WFD requirements. ECSA 47 Symposium, Estuarine Coastal Sciences Association, 14th-19th September, Figueira da Foz, Portugal.

Santos R, Costa R, **Silva J**, Coelho H and Leitão JC (2010). Management of a *Sphaerococcus coronopifolius* bed that causes considerable economic losses. XX International Seaweed Symposium, Ensenada, Mexico.

Silva J, Barrote I, Santos R (2009) Oxidative stress and quantum use efficiency in the intertidal seagrass *Zostera noltii*. Coastal and Estuarine Research Federation's 20th Biennial International Conference, Portland OR, USA.

Santos R, **Silva J** (2009) *Spartina maritima* community production in southern Europe. Coastal and Estuarine Research Federation's 20th Biennial International Conference, Portland OR, USA.

Silva J, Barrote I, Santos R (2009) Quantum use efficiency in the intertidal seagrass *Zostera noltii*. Mediterranean Seagrass Workshop, Hvar, Croatia.

Sharon S, **Silva J**, Santos R, Runcie J, Chernihovsky M, Beer S (2009) Photosynthetic responses of *Halophila stipulacea* to a light gradient: Acclimation following transplantation. Mediterranean Seagrass Workshop, Hvar, Croatia.

Sharon Y, Chernihovsky M, **Silva J**, Runcie J, Beer S (2009) Photosynthetic responses of the tropical seagrass *Halophila stipulacea* to light along a depth gradient. II: Plastic acclimations following transplantation. ASLO Aquatic Sciences Meeting, Nice, France.

Silva J, Santos R (2008) Daily carbon budgets of intertidal *Zostera noltii* meadows. 8th International Seagrass Biology Workshop, Bamfield BC, Canada.

Silva J, Santos R (2007) Short-term and long-term carbon budgets of the intertidal seagrass *Zostera noltii* in South Portugal. Estuarine Research Federation's 19th Biennial International Conference, Providence RI, USA.

Silva J, Calleja ML, Duarte CM, Santos R (2006) Submerged versus air-exposed intertidal macrophyte productivity: from plant to community. Mediterranean Seagrass Workshop, Marsascala, Malta.

Santos R, **Silva J**, Alexandre A, Navarro N, Barrón C, Duarte CM (2005). Ecosystem metabolism and carbon fluxes of a tidal-dominated coastal lagoon. ASLO Summer meeting, Santiago de Compostela, Spain.

Santos R, **Silva J**, Alexandre A, Navarro N, Barrón C, Duarte CM (2004) Ecosystem metabolism and carbon fluxes of a tidal-dominated coastal lagoon. Seminar on Global Change and Sustainability, IGBP, Universidade de Évora, Portugal.

Silva J, Santos R (2001) Comparative ecophysiology of *Gelidium sesquipedale* erect fronds and prostrate system. XVIIth International Seaweed Symposium, Cape Town, South Africa.

Silva J, Santos R (1998) Light and temperature effects on the photosynthesis of *Gelidium sesquipedale*. 3rd Algal Photobiology Conference, Sigtuna, Sweden.

Silva J, Santos R (1998) Efeitos da luz e da temperatura na fotossíntese de *Gelidium sesquipedale*. 3^o Encontro Nacional de Ecologia, Faro, Portugal.

Silva J, Santos R, Serôdio J, Melo R (1997) Light response curves for *Gelidium sesquipedale* from different depths, determined by two methods: O₂ evolution and chlorophyll fluorescence. II International Gelidium Workshop, Las Palmas, Gran Canaria, Spain.

7. *Student supervision*

- 2014- Cátia Freitas. Effect of elevated carbon dioxide (CO₂) concentrations and different irradiances on the photosynthetic performance on the seagrass *Cymodocea nodosa*. Masters in Marine Biology, Algarve University (co-supervisor).
- 2013-2014 Al'ona Shulika. Effects of high CO₂ on growth, photosynthesis and respiration of *Phymatolithon calcareum*. Masters in Marine Biology, Algarve University (supervisor, concluded).
- 2012- Laura Nieves. Mäerl calcification, photosynthesis and metabolism in an acidified ocean. PhD in Marine Sciences, Algarve University (supervisor).
- 2011- Irene Olive Samarra. Ocean acidification effects on seagrass productivity. Post Doc researcher, CCMar-Centre of Marine Sciences (supervisor).
- 2009-2014 Monya Costa. Increased CO₂ and ocean acidification effects on oxidative stress responses in seagrasses. PhD in Marine Sciences, Algarve University (co-supervisor, concluded).
- 2008-2009 Liliana Teixeira. Mäerl calcification in an acidified ocean. Masters thesis in Marine Biology, Algarve University (co-supervisor).
- 2008-2009 Diogo Paulo. The invasive alga *Sargassum muticum* and the native macrophytes of southern Portugal – compared photosynthetic performances. Masters thesis in Marine Biology, Algarve University (co-supervisor, concluded).
- 2005-2006 Ana Saavedra. Field Guide of the Intertidal Macroalgae of Praia da Vigia. Masters thesis in Biology and Geology, Algarve University (co-supervisor, concluded).
- 2005-2006 André Possante. Intertidal macroalgae of São Vicente island, Cabo Verde. Honours thesis in Marine Biology, Algarve University (co-supervisor, concluded).
- 2003-2004 Rodrigo Delgado. Non-structural carbohydrate metabolism of *Zostera noltii*. Honours thesis in Marine Biology, Algarve University (co-supervisor, concluded).

8. *Academic evaluation committees*

8.1. *PhD thesis committees*

- 2016 Carla Monteiro. Role of spawning synchrony on hybridization barriers in sympatric intertidal furoid algae. Universidade do Algarve, Portugal.
- 2016 Yan Xiang Ow. Interactive effects of ocean acidification and declining water quality on tropical seagrass physiology. James Cook University, Australia.
- 2015 Paula Celis Plá. Vulnerability and acclimation of Mediterranean Sea macroalgae to environmental stress related to climate change: use of indicator physiological state indicators. Universitat de Barcelona, Spain.

- 2015 Guillem Roca Carceller. Tracking environmental change in seagrass meadows: understanding indicator behaviour across space and time. Universitat de Barcelona, Spain.
- 2014 Miriam Ruiz Nieto. Incorporación de carbono inorgánico en *Bostrychia scorpioides* (Hudson) Montagne ex Kutzing y *Catenella caespitosa* (Withering) L.M. Irvine. Universidad de Málaga, Spain.
- 2014 Beatriz Villazán Peñalosa. Ecophysiological responses to ammonium enrichment in seagrasses. Universidad de Cádiz, Spain.
- 2012 Jose Miguel Sandoval Gil. Ecophysiological responses of the Mediterranean seagrasses (*Posidonia oceanica* and *Cymodocea nodosa*) under hypersaline stress conditions. Universidad de Alicante, Spain.
- 2012 Silvia Oliva Perez. Seagrass systems under human pressure: responses and assessment tools. Universitat de Barcelona, Spain.
- 2011 Oriol Mascaró Vidal. From the physiology to the seascape: a multi-scale approach to the ecology of the seagrass *Cymodocea nodosa*. Evaluation report for the “Doctor Europaeus” mention. Universitat de Barcelona, Spain.
- 2008 Irene Olivé Samarra. Ecofisiología de la aclimatación a la luz, los nutrientes y la materia orgánica en angiospermas marinas. Universidad de Cádiz, Spain.
- 2007 Susana Cabaço. Impact of anthropogenic activities on the seagrass *Zostera noltii*. Universidade do Algarve, Portugal.

8.2. Masters thesis committees

- 2015 Lidiane Pires Gouvêa. Avaliação dos efeitos de temperatura e nutrientes sobre a ecofisiologia de *Laurencia catarinensis* (Ceramiales, Rhodophyta). Mestrado em Biologia de Fungos, Algas e Plantas, Universidade Federal de Santa Catarina.
- 2014 Renato Martins. Caracterização temporal e espacial da pradaria marinha na Ria de Alvor (Portugal) aplicando Sistemas de Informacao Geográfica. Mestrado em Biologia Marinha, Universidade do Algarve.
- 2014 Geniane Schneider. Efeitos do aumento de CO₂ na fisiologia, anatomia e ultraestrutura de *Halodule wrightii* Ascherson. Mestrado em Biologia Vegetal, Universidade Federal de Santa Catarina.
- 2009 Carmen Mateus. Análise do efeito da halófito *Salicornia ramosissima* na remoção de nutrientes em substrato sólido e em meio hidropónico. Mestrado em Biologia Marinha, Universidade do Algarve.
- 2009 Maria João Tavares. Composição dos ninhos de Labrídeos do género *Symphodus* na costa da Arrábida. Mestrado em Ecologia Marinha, Universidade de Lisboa.

9. Organization and coordination of scientific meetings

- 2014 “Seagrasses in Europe: Threats, Responses and Management”. Final conference of the European COST Action ES0906 "Seagrass productivity from genes to ecosystem management". March 4-6, 2014, Olhão, Portugal. Organizing committee member.
- 2013 “Effects of CO₂/Ocean Acidification on Seagrass Meadows”. Training school under the framework of the European COST Action ES0906 "Seagrass productivity from genes to ecosystem management". Aeolian Islands, Italy. Organizing committee member.
- 2012 9th GAP International Workshop on Gross and Net Primary Production. Malaga, Spain. Coordinator of the seagrass working group.
- 2012 3rd Mediterranean Seagrass Workshop, Essaouira, Morocco. Organizing committee member.
- 2008 8th GAP International Workshop on Gross and Net Primary Production: Closing the Gap between Concepts and Measurements, Eilat, Israel. Coordinator of the seagrass working group.

10. Scientific revision

10.1. Project evaluator

2010. Agence Nationale de la Recherche, France. Programme Blanc.

10.2. Editor

2005-2008. Editorial Board Member at *Botanica Marina*

10.3. Manuscript reviewer

Aquatic Biology
Aquatic Botany
Botanica Marina
Deep Sea Research
Global Change Biology
Journal of Applied Phycology
Limnology and Oceanography
Marine Biology
Marine Ecology
Marine Ecology Progress Series
Oecologia
PLoS ONE

11. Courses and training

2011. Linking seagrass productivity, community metabolism and ecosystem carbon fluxes. Training School, COST-SCHOOLS-ES0909-00318, STARESO, Corsica.
2011. Bioptical Model Workshop, COST Action ES0906 Training School. National Oceanic and Atmospheric Administration (NOAA), Beaufort NC, United States.
2010. Advanced Science Communication Training Course. COST/ECSITE, Lisbon, Portugal.
2009. SeagrassNet workshop. CCMar, Faro, Portugal.
2002. Field-related techniques for the use of stable isotopes in the study of ecosystem functioning. NETCARB Summer-School, ITQB, Oeiras, Portugal.
2001. Ecological modelling: Approaches and attitudes. Advanced course by William Silvert. CCMAR, Universidade do Algarve, Faro, Portugal.
2000. Experimental methods in marine macrophytes ecophysiology. Lab course by Xavier Niell. Ecology Department, Malaga University, Malaga, Spain.
1999. IVth European marine macroalgal photobiology working group meeting. A comparison of measuring techniques for estimating rates of macroalgal photosynthesis. Biological Station, Roscoff, France.
1999. International Symposium: Photosynthesis, a landmark in the history of life. Fundación Ramón Areces/CSIC-Universidad de Sevilla, Seville, Spain.

12. Awards

2002. 5th International Seagrass Biology Workshop, Ensenada, México. Best poster presentation by a student: “The circadian evolution of photosynthesis in *Cymodocea nodosa* and *Zostera noltii* along a vertical gradient in Ria Formosa (South Portugal)”.

13. Scientific spin-off

2004. Production and valorisation of marine macroalgae. Winner of a Business Ideas Contest envisaging the establishment of innovative companies. Regional Center for Innovation in the Algarve CRIA/INOVALGARVE.

14. Teaching

2013. Trainer at the training school “Effects of CO₂/Ocean Acidification on Seagrass Meadows”, European COST Action ES0906 "Seagrass productivity from genes to ecosystem management". 6-11 May 2013. Aeolian Islands, Italy.
2008. Marine Plant Ecophysiology advanced course (as invited scientist) to Marine Biology students at Algarve University, Portugal.

2002. Supervision of the module “Photosynthesis measurements”, included in the “Advanced Study Course in Ecohydrology and Coastal Management: From Catchment to Coastal Areas”. UNESCO IHP-VI, Algarve University, Portugal.
- 1999-2006 Plant Biology lab classes to Marine Biology students at Algarve University, Portugal.
- 1999-2001 Marine Botany lab classes to Marine Biology students at the Superior School of Engineering and Marine Sciences (ISECMAR), Cape Verde.
- 1999-2000. General Botany lab classes to Biology and Geology students at Algarve University, Portugal.
- 1997-2006 Field instructor on Marine Botany field courses to Marine Biology students at Algarve University, Portugal.
- 1992-1996. Teacher of Oceanography, Earth and Life Sciences, Aquaculture and Navigation (high-school level) at Escola Profissional de Gestão e Tecnologias Marítimas, Quarteira, Portugal.

15. Scientific and professional associations

World Seagrass Association (former Steering Committee Member)

American Society of Limnology and Oceanography (ASLO)

Estuarine Research Federation

16. Outreach and science dissemination

- 2009, 2011 “Ervas marinhas: Biologia, Ecologia, monitorização e investigação” (“Seagrasses: Biology, ecology, monitoring and research”). Theoretical and practical training programme for high-school teachers. Project LABO, CCMar, Faro, Portugal.
2010. “Sampling Protocol of *Zostera* in l’etang de Thau”. Training workshop for high-school teachers. Sète, France
2009. “Ervas marinhas: Ecologia e produção primária” (“Seagrasses – Ecology and primary production”). Training lecture for high-school teachers. “Explorando o Mar na Escola” Workshop. NOAA, Agência Nacional para a Cultura Científica e Tecnológica, Ciência Viva and CCMar, Faro, Portugal
- 2007- Supervision of high-school students in the “Science in the Summer” programme. Ciência Viva – CCMar, Faro, Portugal.
- 2006- “Plantas marinhas num oceano em mudança” (“Marine plants in a changing ocean”). Educational talk for elementary and high-school students, offered year-round as part of CCMar’s outreach program.

