

EDUCATION & ACADEMIC APPOINTMENTS

Invited Lecturer on the ‘Marine Evolution Under Climate Change’ Advanced Course CeMEB, University of Gothenburg (Sweden) (since 2012)

Visiting Scientist at the Plymouth Marine Laboratory (UK) (2008-present)

Lecturer in Marine Ecophysiology Plymouth University (UK) (2012-2014)

Research Councils UK Senior Research Fellow Plymouth University (UK) (2007-2012)

Leverhulme Trust Post Doctoral Research Fellow in Physiological Ecology at Plymouth University (UK) (2006-2007)

Postdoctoral Research Assistant at Royal Holloway University of London (UK) (2004-2006)

PhD in Animal Ecology and Ethology with Prof. A Ugolini University of Florence (Italy) (26th May 2004).

BSc+MRes in Environmental Ecology at University of Florence (Italy). 110/110 - 1st Class Hons (13th December 2000).

RESEARCH PROGRAMME(S)

My research focuses on how physiological systems have evolved in marine and aquatic organisms, how such evolution helps defining their biogeography and vulnerability to complex global changes, and whether further adaptation to global drivers can occur rapidly enough to prevent local and global extinction (i.e. evolutionary rescue). I work at different levels of biological organisation (cellular to ecosystem), but favour the comparative investigation of strains, populations and species whole-organism and cellular physiological responses to environmental factors.

MODULES

BIO13099 – The Invertebrates.

BIO27213 – Biology and Ecology of Aquatic Vertebrates.

SELECTED PUBLICATIONS

MAGOZZI S, CALOSI P 2014. Integrating metabolic performance, thermal tolerance, and plasticity enables for more accurate predictions on species vulnerability to acute and chronic effects of global warming. *Global Change Biology*. In Press.

QUEIRÓS AM, FERNANDES JA, FAULWETTER S, NUNES J, RASTRICK SPS, MIESZKOWSKA N, ARTIOLI Y, YOOL A, **CALOSI P**, ARVANITIDIS C, FINDLAY HS, BARANGE M, CHEUNG WWL, WIDDICOMBE S 2014. Scaling up experimental climate change research to the ecosystem. *Global Change Biology*. In Press.

SUNDAY J, **CALOSI P**, DUPONT S, STILLMAN J, MUNDAY P, REUSCH T 2014. Evolution in an acidifying ocean. *Trends in Ecology and Evolution* 29, 2, 117-125.

CALOSI P, RASTRICK SPS, LOMBARDI C, **DEGUZMAN H, DAVIDSON L, MARLENE J**, GIANGRANDE A, HARDEGE JD, SHULZE A, SPICER JI, GAMBI MC 2013. Metabolic

adaptation and acclimatisation to ocean acidification in marine ectotherms: an *in situ* transplant experiment at a shallow CO₂ vent system. *Philosophical Transactions of the Royal Society B*. 368, 1627, 20120444. **Highlight on the New York Times blog Dot Earth + Selected by Faculty of 1000**

CALOSI P, RASTRICK SPS, GRAZIANO M, **THOMAS SC**, **BAGGINI C**, **CARTER HA**, HALL-SPENCER JM, MILAZZO M, SPICER JI 2013. Distribution of sea urchins living near shallow water CO₂ vents is dependent upon species acid-base and ion-regulatory abilities. *Marine Pollution Bulletin* 73, 470-484. **Cited in IPCC 2014 Report**

CALOSI P, TURNER LM, HAWKINS M, **BERTOLINI C**, **NIGHTINGALE G**, TRUEBANO M, SPICER JI 2013. Multiple physiological responses to multiple environmental challenges: An individual approach. *Integrative and Comparative Biology* 53, 660-667.

CHRISTEN N, **CALOSI P**, MCNEILL CL, WIDDICOMBE S 2013. Structural and functional vulnerability to elevated pCO₂ in marine benthic communities. *Marine Biology* 160, 2113-2128. **Cited in IPCC 2014 Report**

MELATUNAN S, **CALOSI P**, RUNDLE SD, WIDDICOMBE S, MOODY AJ 2013. Marine gastropod shell plastic responses to the combined effects of ocean acidification and elevated temperature. *Marine Ecology Progress Series* 472, 155-168.

BOZINOVIC F, **CALOSI P**, SPICER JI 2011. Physiological correlates of geographical range in animals. *Annual Review of Ecology, Evolution, and Systematic* 42, 155-179.

PISTEVOS JCA, **CALOSI P**, WIDDICOMBE S, BISHOP JDD 2011. Will variation among genetic individuals influence species responses to global climate change? *Oikos* 120, 5, 675-689.

HALE R, **CALOSI P**, McNEIL L, MIESZKOWSKA N, WIDDICOMBE S 2011. Predicted levels of future ocean acidification and temperature rise could alter community structure and biodiversity in marine benthic communities. *Oikos* 120, 5, 661-674. **Cited in IPCC 2014 Report**

CALOSI P, BILTON DT, SPICER JI, VOTIER S, ATFIELD A 2010. What determines a species geographical range? Thermal biology and latitudinal range size relationships in European diving beetles (Coleoptera: Dytiscidae). *Journal of Animal Ecology* 79, 194-204. **Most cited research paper of the year.**

GASTON K, CHOWN SL, **CALOSI P**, BERNARDO J, BILTON DT, CLARKE A, CLUSELLA-TRULLAS S, GHALAMBOR CK, KONARZEWSKI M, PECK LS, PORTER WP, POERTNER H-O, REZENDE EL, SCHULTE PM, SPICER JI, STILLMAN J, TERBLANCHE JS, VAN KLEUNEN M 2009 Macrophysiology: a conceptual re-unification. *American Naturalist* 174, 5, 595-612.

CALOSI P, BILTON DT, SPICER JI 2008b. Thermal tolerance, acclimatory capacity and vulnerability to global climate change. *Biology Letters* 4, 99-102. **Highlight research paper.**

 BSc student

 MSc/MRes student

 PhD student

PRESS REVIEWS & PUBLIC OUTREACH

2013

NEW YORK TIMES online http://dotearth.blogs.nytimes.com/2013/08/26/papers-find-mixed-impacts-on-ocean-species-from-rising-co2/?smid=fb-share&_r=2

SCIENCE DAILY <http://www.sciencedaily.com/releases/2014/01/140128094726.htm>

SCIENCE NEWSLINE BIOLOGY: www.sciencenewsline.com/articles/2013082600050022.html

EUREKA ALERT http://www.eurekaalert.org/pub_releases/2013-08/uop-iim082213.php

CALIFORNIA CURRENT ACIDIFICATION NETWORK <http://c-can.msi.ucsb.edu/news/theme-issue-ocean-acidification-and-climate-change-advances-in-ecology-and-evolution-compiled-and-edited-by-jasmin-a.-godbold-and-piero-calosi>

UK OA BENTHIC CONSORTIUM

http://www.oceanacidification.org.uk/latest_news/special_issue_pt_rs.aspx

WESTERN MORNING NEWS <http://www.westernmorningnews.co.uk/Plymouth-led-study-finds-sea-creatures-adapt/story-19711309-detail/story.html>

PLYMOUTH THE DAILY <http://plymouth.thedailyuk.co.uk/news/local-news/plymouth-scientists-reveal-how-marine-life-adapting-climate-change>

F1000PRIME <http://f1000.com/prime/718087517?subscriptioncode=75b5565c-c8d0-457c-8989-7b5f335aeb86>

CONSTANTINE ALEXANDER'S BLOG OUR SEA, OUR LIFE

<http://www.constantinealexander.net/2013/08/insight-into-marine-lifes-ability-to-adapt-to-climate-change.html>

2011

Outreach activity with pupils Hyde Park Infant School (Plymouth, UK)

http://www.hydepark-inf.plymouth.sch.uk/children_12-13/Holly/02_Biology/index.html,

http://www.hydepark-inf.plymouth.sch.uk/children_12-13/Sycamore/04_BrimptsFarm/01.html

WESTERN MORNING NEWS <http://www.westernmorningnews.co.uk/Study-looks-climate-affects-sea-life/story-11719728-detail/story.html>

PHYSORG PHYSORG.COM CAN MARINE LIFE ADAPT TO GLOBAL CHANGE?

EPOLINE BLOG EPONLINE.COM – CAN MARINE LIFE ADAPT TO GLOBAL CHANGE?

THIS IS DEVON BLOG [THIS IS DEVON - STUDY LOOKS AT HOW CLIMATE AFFECTS SEA LIFE](http://THIS_IS_DEVON_-_STUDY_LOOKS_AT_HOW_CLIMATE_AFFECTS_SEA_LIFE)

2010

BBC Radio Devon interview on ‘*Diving Beetles and Climate Change*’ with Gordon Sparks.

THIS IS DEVON BLOG [THIS IS DEVON - RESEARCHERS WIN MARINE LIFE GRANT](http://THIS_IS_DEVON_-_RESEARCHERS_WIN_MARINE_LIFE_GRANT)

CURRENT STUDENTS AND POSTDOCS

Postdoc

Turner, Lucy. Physiological and biochemical acclimation and adaptation in marine polychetes worms living around mediterranean shallow water CO₂ vents.

Doctorate students

Ms Maj Arnberg (first supervisor) - *PhD candidate*. Project: Combined effects of CO₂/acidified seawater, climate change and oil-related discharges on aspects of the development of marine invertebrates. In collaboration with IRIS Stavanger and Kristineberg Marine Station.

Ms Emilie Hall (first supervisor) - *PhD candidate*. Project: Vulnerability to Global Change in marine invertebrates living along a latitudinal and depth gradient: Marine Macrophysiology for a Changing Ocean. In collaboration with Aberystwyth University and University of British Columbia.

Ms Noelle Lucey (second supervisor) - *PhD candidate*. Project: The challenge of living in a High CO₂ World: life history and reproduction plasticity and evolutionary adaptation in marine polychaete worms living around Mediterranean shallow water CO₂ vent. Funding FP7 MARES MUNDUS. In collaboration with ENEA Lercici.

Ms Ruth Bibby Calder-Potts (fourth supervisor) - *PhD candidate*. Project: Combined effects of hypoxia, high CO₂, elevated temperature on benthic biotic communities. Funding NERC. In collaboration with PML.

Masters students

Ms Evelyn van der Ent – *visiting ERASMUS Master Research Project Student*. Project: Energy metabolism, shell composition and phylogeographic structure of multiple population of the periwinkle *Littorina littorea* along the North West European coast thermo-latitudinal gradient. Funding: NERC-Defra-DEC and Erasmus Mundus.

Ms Ella Guscelli – *visiting ERASMUS Master Research Project Student*. Project: Coelomic fluid homeostasis in sea urchins. Funding: Plymouth University and Erasmus Mundus.

Ms Theresa Venello – *Master Research Project Student*. Project: Metabolic responses of the krill *Thysanoessa inermis* from the Kongsfjord (Svalbard, Norway) to ocean acidification. Funding: Svalbard Research Forum-PML-Plymouth University.

Ms Saskia Ruhl – *Master Research Project Student*. Project: Shell plastic responses of juvenile of the whelk *Nucella lapillus* to elevated temperature and pCO₂. Funding: Marine Institute University of Plymouth-NERC-PML-Plymouth University.

Mr Spyridon Stamatias – *Master Research Project Student*. Project: Thermal plasticity of juvenile and adult of the copepods *Calanus finmarchicus* and *C. helgolandicus*. Funding: SAFHOS-Plymouth University.