

# Gerardo I. Zardi

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## EDUCATION

09/2002 - 04/2006: **Ph.D in Marine Biology**, Department of Zoology and Entomology, Rhodes University, South Africa. Thesis: A genetic and ecophysiological comparison of co-occurring indigenous (*Perna perna*) and invasive (*Mytilus galloprovincialis*) intertidal mussels. Supervisors: Prof. CD McQuaid and Prof. NP Barker.

09/1994 - 02/2000: **Degree (Laurea - 5 years) in Biological Sciences**, University of Genoa, Italy. Thesis work carried out at the Swiss Federal Institute of Technology, Zurich (ETH Zurich) in the framework of a joint project between the Department for the Study of the Territory and its Resources of the University of Genoa (Director, Prof. P Modenesi) and the ETH Zurich group of Plant Biochemistry and Physiology (Prof. N Amrhein). Thesis: Over expression of H<sup>+</sup>-ATPase in tomato root hairs.

## ACADEMIC TEACHING QUALIFICATION

2013: National Scientific qualification as Associate Professor in the sector 05/C1 – Ecology, Italy

## PROFESSIONAL TRAINING

Introduction to Geographic Information Systems (GIS) and its use in ecological studies. Faro (03/2012)

XVII International Summer School "Nicolás Cabrera": Frontiers in science and technology: self-organization patterns in nature, from molecules to humans. Madrid (09/2010)

The international course "Quantitative Marine Ecology". Vigo (10/2008)

04/2006: **10<sup>th</sup> expedition April 2006 Algoa Cruise** (African Coelacanth ecosystem programme) – Member of the scientific crew

03/2000 - 08/2002: **Trainee at ETH** (Swiss Federal Institute of Technology) Zurich, Switzerland in the group of Plant Biochemistry and Physiology (Prof. N Amrhein and Prof. M Bucher) - training in plant molecular biology and physiology techniques

1999 - 2000: **Trainee at Advanced Biotechnology Centre** (Genoa) in the Cell Biology laboratory - training in molecular biology

## **AWARDS**

2008: FCT Postdoctoral Research Fellowship, Portuguese Science Foundation, Portugal

2007: Claude Harris Leon Foundation Postdoctoral Research Fellowship, South Africa

2006: Rhodes University Postdoctoral Research Fellowship, South Africa

## **APPOINTMENTS**

03/2014 – present: **Senior Researcher** at Rhodes University, South Africa and associate member at CCMAR, Portugal

04/2008 – 02/2014: **Postdoctoral Fellow** at CCMAR, Portugal - BEE group

04/2006 – 03/2008: **Postdoctoral Fellow** at Rhodes University, South Africa - Department of Zoology and Entomology. Research activity focuses on the testing of the effects of biogeographic regions on selection and propagation of coastal marine animals through a genetic and physiological approach

## **TEACHING AND SUPERVISION EXPERIENCE**

2018: MSc in Science, *in progress* - Dievert, Alexia registered at University of Reunion Island (France). Co-supervisor.

2017: **MSc** in Marine Biology, *in progress* - Basto, Marta registered at University of Algarve (Portugal). Supervisor.

2016: **Ph.D.** in Marine Biology, *in progress* - Ndhlovu, Aldwin registered at Rhodes University (South Africa). Co-supervisor.

2016: **MSc** in Marine Biology, completed in 11/2017 - Velez, Nadja registered at University of Algarve (Portugal). Supervisor.

2015: **MSc** in Marine Biology, *in progress* - Nokukhanya, Noxolo registered at University of Johannesburg (South Africa). Co-supervisor.

2015: **Honours** student in Marine Biology, completed in 11/2015 - Micklem, Isabel registered at Rhodes University (South Africa). Co-supervisor.

2015: **Honours** student in Marine Biology, completed in 11/2015 - Weston, Mark registered at Rhodes University (South Africa). Co-supervisor.

2014: **Ph.D.** in Marine Biology, awaiting graduation in April 2018 - Lourenço, Carla registered at Rhodes University (South Africa). Co-supervisor.

2014: **MSc** in Marine Biodiversity and Conservation, completed in 06/2014 - Monteiro, Catia at University of Algarve (CCMAR) as part of EMBC-Ghent University, Belgium. Co-supervisor.

2014: **MSc** in Marine Biodiversity and Conservation, completed in 06/2014 - Saada, Gabriel at University of Algarve (CCMAR) as part of EMBC-Ghent University, Belgium. Supervisor.

2012: **MSc** in Marine Biology, completed in 10/2012 - Lourenço, Carla registered at University of Algarve (Portugal). Co-supervisor.

2011: **MSc** in Marine Biodiversity and Conservation, completed in 07/2011 - Marquet, Nathalie at University of Algarve as part of EMBC-Ghent University, Belgium. Supervisor.

2008 - 2015: **Demonstrator** in field and laboratory practicals **to MSc students** (Marine Biology) at University of Algarve, Portugal.

2007: **Guest lecturer** on coral reefs for third year students at the Department of Zoology and Entomology, Rhodes University, South Africa.

2002 - 2005: **Demonstrator** in laboratory and field practicals **to undergraduates** (Zoology) at the Department of Zoology and Entomology, Rhodes University, South Africa.

## RESEARCH GRANTS

**Coordinator** of the FCT project (PTDC/BIA/103916/2008) "Adaptation in action: comparing invasive and native populations to understand processes influencing species boundaries"\_ **141.370,00€\_status: completed**

**Coordinator** of the bilateral project (Acordo Portugal-Tunisia: 2010/11) "Tropicalizacao da biodiversidade do mar Mediterraneo: ecologia de uma zona de contacto entre especies de mexilhao de zonas temperadas e sub-tropicais"\_ **2.250,00€\_status: completed**

**Partner** of the FCT project (PTDC/MAR-EST/6053/2014) "Thermal adaptation of marine forests (GENEKELP)"\_ **199.941,00€\_status: in progress**

**Partner** of the FCT project (EXCL/AAG-GLO/0661/2012) "Extant or extinct tipping points – climate changes drive genetic diversity and dynamics of range edge populations as evolutionary hotspots"\_ **499.557,00€\_status: in progress**

**Partner** of the University of Portsmouth Research Development Fund project (2015) "Climate change in the Ocean: The resilience of marginal populations"\_ **15.000,00€\_status: completed**

**Partner** of the FCT project (EXPL/BIA-BIC/1471/2012) "Escape the heat: upwelling as current refugia from climate change"\_ **49.956,00€\_status: completed**

**Partner** of the FCT project (PTDC/MAR/110251/2009) "Adaptive potential at range edges: testing relationships between fitness-related traits and population structure near ecophysiological limits"\_ **181.752,00€\_status: completed**

**Partner** of the ASSEMBLE Transnational Access project (Call 3, September 2010) "Testing relationships between fitness-related traits and population structure of Fucus spp. near ecophysiological limits"\_ *On-site access to the Station Biologique Roscoff (France) for a period of one month* **1.100€\_status: completed**

## PROFESSIONAL MEMBERSHIPS

Member of the Marine Biological Association of the United Kingdom

## PEER-REVIEWED INTERNATIONAL PUBLICATIONS

*\*indicate equal contribution*

*underlined names indicate student co-authors*

### BOOK CHAPTERS

**1.** McQuaid CD, Porri F, Nicastro KR, Zardi GI. Simple, scale-dependent patterns emerge from very complex effects: an example from the intertidal mussels *Mytilus galloprovincialis* and *Perna perna*. In: Hughes RN, Hughes DJ, Smith IP, Dale AC (Eds). **Oceanography and Marine Biology - An Annual Review**, Volume 53: 127-156, 2015

### PEER-REVIEWED INTERNATIONAL JOURNALS

**41.** Nicastro KR, Lo Savio R, McQuaid CD, Madeira P, Lourenço C, Valbusa U, Azevedo F, Casero M, Zardi GI (2018). Plastic ingestion in aquatic-associated bird species in southern Portugal. **Marine Pollution Bulletin**, 126: 413-418.

**40.** Zardi GI, McQuaid CD, Jacinto R, Lourenço C, Serrão E, Nicastro KR. Reassessing the origins of the invasive mussel *Mytilus galloprovincialis* in southern Africa. **Marine and Freshwater Research**, Online Early, doi.org/10.1071/MF17132.

**39.** Monteiro C, Zardi GI, McQuaid CD, Serrão E, Pearson AP, Nicastro KR. Canopy microclimate modification in central and marginal populations of a marine macroalga. *Marine Biodiversity*, 2017, First Online, doi.org/10.1007/s12526-017-0824-y.

**38.** Lourenço C, Nicastro KR, McQuaid CD, Chefaoui RM, Assis J, Taleb MZ, Zardi GI. Evidence for rangewide panmixia despite multiple barriers to dispersal in a marine mussel. **Scientific Reports**, 7: 10279, 2017.

**37.** Lourenço C, Nicastro KR, McQuaid CD, Sabour B, Zardi GI. Latitudinal incidence of phototrophic self-degrading endoliths and their effects on mussels beds microclimates. **Marine Biology**, 164:129, 2017.

**36.** Almeida SC, Nicastro KR, Zardi GI, Pearson GA, Valero M, Serrão EA. Reproductive strategies and population genetic structure of *Fucus* spp. across a northeast Atlantic biogeographic transition. **Aquatic Living Resources**, 30, 16, 2017.

**35.** Helmuth, B., *et al.*, Nicastro KR, Zardi GI Long-term, high frequency in situ measurements of intertidal mussel bed temperatures using biomimetic sensors. *Scientific Data*, 3: 160087, 2016

**34.** Saada G, Nicastro KR, Jacinto R, McQuaid CD, Serrão EA, Pearson GA, Zardi GI. Taking the heat: distinct vulnerability to thermal stress of central and threatened peripheral lineages of a marine macroalga. **Diversity and Distribution**, 22: 1060–1068, 2016

- 33.** Lathlean JA, Seuront L, McQuaid CD, Ng TPT, Zardi GI, Nicastro KR. Size and position (sometimes) matter: small-scale patterns of heat-stress associated with two co-occurring mussels with alternate thermo-regulatory behaviours. **Marine Biology**, 163: 189, 2016
- 32.** Zardi GI, Nicastro KR, McQuaid CD, Ng TPT, Lathlean JA, Seuront L. Enemies with benefits: parasitic endoliths protect mussels against heat stress. **Scientific Reports**, 6: 31413, 2016
- 31.** Lourenço CR, Zardi GI, McQuaid CD, Serrão EA, Pearson GA, Jacinto R, Nicastro KR. Upwelling areas as climate change refugia for the distribution and genetic diversity of a marine macroalga. **Journal of Biogeography**, 43: 1595–1607, 2016
- 30.** Lathlean JA, Seuront L, McQuaid CD, Ng TPT, Zardi GI, Nicastro KR. Cheating the Locals: Invasive Mussels Steal and Benefit from the Cooling Effect of Indigenous Mussels. **PLoS ONE** 11(3): e0152556, 2016
- 29.** Assis J, Zupan M, Nicastro KR, Zardi GI, McQuaid CD, Serrão EA. Oceanographic conditions limit the spread of a marine invader along southern African shores. **PLoS ONE**, 10(6): e0128124, 2015
- 28.** Zardi GI, Nicastro KR, McQuaid CD, Castilho R, Costa J, Serrão EA, Pearson GA. Intraspecific genetic lineages of a marine mussel show behavioural divergence and spatial segregation over a tropical/subtropical biogeographic transition. **BMC Evolutionary Biology**, 15:100, 2015, Highly Accessed
- 27.** Lourenço C, Nicastro KR, Serrão EA, Castilho R, Zardi GI. Behind the mask: cryptic genetic diversity of *Mytilus galloprovincialis* along southern European and northern African shores. **Journal of Molluscan Studies**, 81: 380-387, 2015
- 26.** Zardi GI, Nicastro KR, Serrão EA, Jacinto R, Monteiro CA, Pearson GA. Closer to the rear-edge: ecology and genetic diversity down the core-edge gradient of a marine macroalga. **Ecosphere**, 6–art23, 2015
- 25.** Cunha RL, Nicastro KR, Costa JF, McQuaid CD, Serrão EA, Zardi GI. Wider sampling reveals a non-sister relationship for geographically contiguous lineages of a marine mussel. **Ecology and Evolution**, 4(11):2070–2081, 2014
- 24.** Zardi GI, Nicastro KR, Costa JF, Serrão EA, Pearson GA. Broad scale agreement between intertidal habitats and adaptive traits on a basis of contrasting population genetic structure. **Estuarine, Coastal and Shelf Science**, 131:140-148, 2013
- 23.** Teske PR, Zardi GI, McQuaid CD, Nicastro KR. Two sides of the same coin: extinctions and originations across the Atlantic/Indian Ocean boundary as consequences of the same climate oscillation. **Frontiers of Biogeography**, 5 (1), 2013
- 22.** Nicastro KR\*, Zardi GI\*, Teixeira S, Neiva J, Serrão EA, Pearson GA. Shift happens: trailing edge contraction associated with recent warming trends threatens a distinct genetic lineage in the marine macroalga *Fucus vesiculosus*. **BMC Biology**, 11:6, 2013
- 21.** Marquet N, Nicastro KR, Gektidis M, McQuaid CD, Pearson GA, Serrão EA, Zardi GI. Comparison of phototrophic shell-degrading endoliths in invasive and native populations of the intertidal mussel *Mytilus galloprovincialis*. **Biological Invasion**, 15:1253-1272, 2013.

20. Coelho NC, Zardi GI, Pearson GA, Serrão EA, Nicastro KR. Characterization of ten highly polymorphic microsatellite loci for the intertidal mussel *Perna perna*, and cross species amplification within the genus. **BMC Research Notes**, 5:2101791285670501, 2012
19. Nicastro KR\*, Zardi GI\*, McQuaid CD, Pearson GA, Serrão EA. Love thy neighbour: group properties of gaping behaviour in mussel aggregations. **PLoS ONE**, 7(10): e47382, 2012
18. Lourenço C, Nicastro KR, Serrão EA, Zardi GI. First record of the brown mussel (*Perna perna*) from the European Atlantic coast. **Marine Biodiversity Record**, 5:e39, 2012
17. Zardi GI, Nicastro KR, Canovas F, Costa JF, Serrão EA, Pearson GA. Adaptive traits are maintained on steep selective gradients despite gene flow and hybridization in the intertidal zone. **PLoS ONE**, 6(6):e19402, 2011
16. Zardi GI, Nicastro KR, McQuaid CD, Hancke L, Helmuth B. The combination of selection and dispersal helps explain genetic structure in intertidal mussels. **Oecologia**, 165:947-958, 2011
15. Nicastro KR, Zardi GI, McQuaid CD, Stephens L, Radloff S, Blatch GL. The role of gaping behaviour in habitat partitioning between coexisting intertidal mussels. **BMC Ecology**, 10:17, 2010
14. Nicastro KR, Zardi GI, McQuaid CD. Differential reproductive investment, attachment strength and mortality of invasive and indigenous mussels across heterogeneous environments. **Biological Invasion**, 12:2165-2177, 2010
13. Zardi GI, Nicastro KR, McQuaid CD, Gektidis M. Effects of endolithic parasitism on invasive and indigenous mussels in a variable physical environment. **PLoS ONE**, 4(8): e6560, 2009
12. Nicastro KR, Zardi GI, McQuaid CD. Movement behaviour and mortality in invasive and indigenous mussels: resilience and resistance strategies at different spatial scales. **Marine Ecology Progress Series**, 372: 119-126, 2008
11. Nicastro KR, Zardi GI, McQuaid CD, Teske PR, Barker NP. Coastal topography drives genetic structure in marine mussels. **Marine Ecology Progress Series**, 368: 189-195, 2008
10. Zardi GI, McQuaid CD, Nicastro KR, Erlandsson J. Sand and wave induced mortality in invasive (*Mytilus galloprovincialis*) and indigenous (*Perna perna*) mussels. **Marine Biology**, 153: 853-858, 2008
9. Teske PR, Papadopoulos I, Zardi GI, McQuaid CD, Griffiths CL, Edkins MT, Barker NP. Implications of life history on genetic structure and migration rates of five southern Africa coastal invertebrates: planktonic, abbreviated and direct development. **Marine Biology**, 152: 697-71, 2007
8. Porri F, Zardi GI, McQuaid CD, Radloff S. Tidal height, rather than habitat selection for conspecifics, controls settlement in mussels. **Marine Biology**, 152: 631-637, 2007
7. Zardi GI, Teske PR, McQuaid CD, Barker NP. Unexpected genetic structure of indigenous *Perna perna* and invasive *Mytilus galloprovincialis* mussel populations in South Africa. **Marine Ecology Progress Series**, 337: 153-144, 2007
6. Nicastro KR, Zardi GI, McQuaid CD. Behavioural response of invasive (*Mytilus galloprovincialis*) and indigenous (*Perna perna*) mussels exposed to risk of predation. **Marine Ecology Progress Series**, 336: 169-175, 2007

5. Zardi GI, McQuaid CD, Nicastro KR. Balancing survival and reproduction: seasonality of attachment strength and reproductive output in indigenous (*Perna perna*) and invasive (*Mytilus galloprovincialis*) mussels. **Marine Ecology Progress Series**, 334: 155-167, 2007
4. Zardi GI, Nicastro KR, McQuaid CD, Rius M, Porri F. Hydrodynamic stress and habitat partitioning between indigenous (*Perna perna*) and invasive (*Mytilus galloprovincialis*) mussels: constraints of an evolutionary strategy. **Marine Biology** 150: 79-88, 2006
3. Zardi GI, Nicastro KR, Porri F, McQuaid CD. Sand stress as a non-determinant of habitat segregation of indigenous (*Perna perna*) and invasive (*Mytilus galloprovincialis*) mussels in South Africa. **Marine Biology** 148: 1031-1038, 2006
2. Zimmermann P, Zardi G, Lehmann M, Zeder C, Amrhein N, Frossard E and Bucher M. Engineering the root-soil interface via targeted expression of a synthetic phytase gene in trichoblasts. **Plant Biotechnology Journal**, 1: 353-360, 2003
1. Bucher M, Brunner S, Zimmermann P, Zardi G, Amrhein N, Willmitzer L and Riesmeier JW. The expression of an extensin-like protein correlates with cellular tip growth in tomato. **Plant Physiology**, 128: 911-923, 2002

## CONFERENCES AND EVENTS

44. Zardi G.I., Nicastro K.R. Awareness raising night: Marine debris, 6th December 2017, University of Algarve, Portugal (invited speaker).
43. McQuaid C.D., Nicastro K.R., Ng T.P.T., Lathlean J., Seuront L., Zardi G.I. For better and for worse: shifting costs and benefits in a marine symbiosis. 52nd EMBS in Piran, Slovenia, October 2017 (oral).
42. Almeida S.C., Nicastro K.R., Zardi G.I., Pearson G.A., Valero M., Serrão E.A., "Contrasting patterns of genetic structure between sister species along a biogeographic transition zone", Frontiers in Marine Science Conference Abstract, IMMR | International Meeting on Marine Research 2016, Peniche, Portugal (oral).
41. Hoffman E, Tagliaro C, Zardi G, Ferreira CEL, Fernandes F, Silva EP, Nicastro K; Lourenco C, Calazans S. Impact of the human slave trade on the New World distribution of *Perna perna*. Evolution Meeting 17-21 Jun 2016 Austin Convention Center, Austin, USA (oral)
40. Almeida S.C., Nicastro K.R., Zardi G.I., Pearson G.A., Valero M., Serrão E.A., "Contrasting patterns of genetic structure between sister species along a biogeographic transition zone", International Meeting on Marine Research 2016, Peniche, Portugal, July 2016 (oral)
39. Zardi, G.I., Basto, M., Madeira, P., Lourenço, C.R., Lo Savio, R., Valbusa, U., Nicastro, K.R. Plastic ingestion in aquatic-associated bird species in Portugal. The 1st Portuguese congress on microplastics: environmental contamination by microplastics and its implications for environmental, animal and human health, December 19-20, 2016, Porto, Portugal (poster)
38. Nicastro KR, Zardi GI, Serrão EA, Pearson GA, Lourenço CR, McQuaid CD. Who is taking the heat? Recent warming trends threaten distinct genetic lineages and the adaptive potential of the species as a whole. 111th International Temperate Reefs Symposium (ITRS), June 26-30, 2016, Pisa, Italy (oral)

- 37.** Lourenço CR, Nicastro KR, Chefaoui RM, McQuaid CD, Zardi GI. Assessing native biogeographic boundaries and the invasive potential of the intertidal mussel *Perna perna*. 11th International Temperate Reefs Symposium (ITRS), June 26-30, 2016, Pisa, Italy (oral)
- 36.** Zardi GI, Nicastro KR, McQuaid CD. Intraspecific adaptive divergence of a marine mussel over a tropical/subtropical biogeographic transition 11th International Temperate Reefs Symposium (ITRS), June 26-30, 2016, Pisa, Italy (oral)
- 35.** Gandra M, Zardi GI, Nicastro KR. Shell discolouration in intertidal mussels due to endolithic parasitism: a cool phenotypic shift? Mares Conference – Marine Ecosystems Health and Conservation, February 1-5, 2016, Olhão, Portugal (poster)
- 34.** Ntuli NN, Teske PR, Zardi GI, Nicastro KR. An investigation of core-edge genetic diversity in a South African marine mussel. Ninth WIOMSA Symposium, October 26-31, 2015, Wild Coast Sun, South Africa (oral)
- 33.** Zardi GI, Nicastro KR, McQuaid CD, P.t. Ng T, Lathlean J, Seuront L. Cool parasites: indirect positive effects of endolithic parasitism on intertidal mussels. Aquatic Biodiversity and Ecosystems, August 30<sup>th</sup>-September 4, 2015, Liverpool, UK (oral)
- 32.** Lourenço CR, Zardi GI, McQuaid CD, Jacinto R, Pearson GA, Serrão EA, Nicastro KR. Upwelling areas as refugia from rising sea surface temperatures along the contracting southern range edge of the macroalga *Fucus guiryi*. Aquatic Biodiversity and Ecosystems, August 30<sup>th</sup>-September 4, 2015, Liverpool, UK (oral)
- 31.** Nicastro KR, Pearson GA, Monteiro C, Serrão EA Zardi GI. Global stress, local relief: an ecosystem engineer acts as a refugium for a keystone species undergoing range contraction. Aquatic Biodiversity and Ecosystems, August 30<sup>th</sup>-September 4, 2015, Liverpool, UK (oral)
- 30.** Ntuli NN, Teske PR, Zardi GI, Nicastro KR. An investigation of core-edge genetic diversity in a South African marine mussel. 37th Congress of the Zoological Society of Southern Africa, July 12-17, 2015, Grahamstown, South Africa (oral)
- 29.** Lathlean J, Seuront L, McQuaid CD, P.t. Ng T, Nicastro KR, Zardi GI. Cheating the locals: invasive mussels 'steal' the cooling effect of indigenous mussels. 52nd Australian Marine Science Association (AMSA) Annual Conference, July 5-9, 2015, Port Phillip Bay, Australia (oral)
- 28.** Monteiro C, Nicastro KR, Pearson GA, Serrão EA. Zardi GI. Importance of *Spartina maritima* canopies for the preservation of isolated populations of *Fucus vesiculosus* outside the recently contracted southern range. Mares Conference – Marine Ecosystems Health and Conservation, November 17- 21, 2014, Olhão, Portugal (poster)
- 27.** Saada G, Zardi GI, Jacinto R, Pearson GA, Serrão EA, Nicastro KR. Taking the heat: vulnerability of distinct macroalgal lineages to thermal stress. Mares Conference – Marine Ecosystems Health and Conservation, November 17- 21, 2014, Olhão, Portugal (poster)
- 26.** Jacinto R, Nicastro KR, McQuaid CD, Lourenço CR, Serrão EA, Zardi GI. More than meets the eye: cryptic genetic diversity of the invasive *Mytilus galloprovincialis* in southern Africa. Mares Conference – Marine Ecosystems Health and Conservation, November 17- 21, 2014, Olhão, Portugal (poster)
- 25.** Cunha RL, Nicastro KR, Costa JF, McQuaid CD, Serrão EA, Zardi GI. Wider sampling reveals a non-sister relationship for geographically contiguous lineages of a marine mussel. 7th Congress of



the European Malacological Societies, 7-11 September 2014, St. Catharine's College, Cambridge, UK (poster)

**24.** Lourenço CR, Zardi GI, McQuaid CD, Jacinto R, Serrão EA, Pearson G, Nicastro KR. Upwelling areas as refugia from rising sea surface temperatures along the contracting southern range edge of the macroalga *Fucus guiryi*. Heteroclim workshop, June 10-14, 2014, Loches, France (poster)

**23.** Zardi GI, Lourenço CR, McQuaid CD, Jacinto R., Serrão EA, Pearson GA, Nicastro KR. Upwelling areas as refugia from rising sea surface temperatures along the contracting southern range edge of the macroalga *Fucus guiryi*. Gordon Research Conference - Ocean Global Change Biology. July 06-11, 2014, WatervilleValley NH, Unites States, (poster)

**22.** Zupan M, Assis J, Nicastro KR, Zardi GI, Serrão EA. Dispersal or habitat availability: what is limiting the spread of an aggressive marine invader? ECSA 54 - Coastal systems under change: tuning assessment and management tools. May 12-16, 2014, Lisbon, Portugal (poster).

**21.** McQuaid CD, Nicastro KR, Porri F, Zardi GI. Simple patterns can emerge from complex interactions: habitat segregation between indigenous and invasive mussels. 10th International Temperate Reefs Symposium January 12-17, 2014, The University of Western Australia, Australia (theme keynotes)

**20.** Zardi GI, Nicastro KR, McQuaid CD. Simple behaviour can have critical consequences: interactions between invasive and indigenous mussels. 48th Annual European Marine Biology Symposium, August 19-23, 2013, National University of Ireland, Galway, Ireland (oral)

**19.** Nicastro KR, Zardi GI, Teixeira S, Neiva J, Serrão EA, Pearson GA. Trailing edge contraction associated with recent warming trends threatens a distinct genetic lineage in the seaweed *Fucus vesiculosus*. 48th Annual European Marine Biology Symposium. August 19-23, 2013, National University of Ireland, Galway, Ireland (poster)

**18.** Serrão EA, Alberto F, Assis J, Canovas F, Coelho N, Costa J, Neiva J, Nicastro KR, Pearson GA, Raimondi P, Reed D, Valero M, Zardi GI. Extant or extinct tipping points – range edge populations as evolutionary hotspots. 10<sup>th</sup> International Phycological Congress. 4-10 August 2013, Orlando, Florida (invited speaker)

**17.** Lourenço CR, Nicastro KR, Serrão EA., Zardi GI. First record of the intertidal mussel *Perna perna* along the European coast: long overlooked or a recent range expansion? 47th Annual European Marine Biology Symposium. September 3-7, 2012, Arendal, Norway (poster)

**16.** Zardi GI, Nicastro KR, McQuaid CD, Pearson GA, Serrão EA. Gaping behaviour in coexisting invasive and indigenous mussels in South Africa. Netherlands Institute of Ecology (NIOO-KNAW). 16 February 2011, Yerseke, Netherlands (oral, invited speaker)

**15.** Pearson GA, Serrão EA, Canovas F, Lago-Leston A, Neiva J, Nicastro KR, Zardi GI. Environmental genomics of *Fucus*: stress management, mergers and acquisitions in the intertidal zone. Ectocarpus 2010, a decade of algal genomics. April 7-9, 2010, Ghent University, Belgium (oral, invited speaker)

**14.** Serrão EA, Pearson GA, Canovas F, Neiva J, Nicastro KR, Zardi G.I Genetic signatures of evolutionary dynamics and range shifts in canopy-forming marine species. Nordic Marine Sciences Conference 2010. September 13-16, 2010, Stromstad, Sweden (oral, invited speaker)

- 13.** McQuaid CD, Nicaastro KR, Zardi GI, Porri F, Erlandsson J, Jordaan T. Predicted effects of global warming on indigenous and invasive mussels and their associated infauna. 43rd European Mar Biol Symp. 2008, Azores, Portugal (oral)
- 12.** Nicaastro KR, Zardi GI, McQuaid, CD Effects of coastal topography on indigenous (*Perna perna*) and invasive (*Mytilus galloprovincialis*) mussels: a bay/open coast comparison. 2008, University of Algarve, Portugal (oral, invited speaker)
- 11.** McQuaid CD, Zardi GI, Nicaastro KR, Roberts MJ, Hancke L. Selection and dispersal, twin drivers for genetic structure in intertidal mussels. Plenary Talk. 13<sup>th</sup> South African Marine Science Symposium. 2008, Cape Town, South Africa (oral)
- 10.** Nicaastro KR, Zardi GI, McQuaid CD, L Stephens, GL Blatch, Porri F, Rius M. Sand, waves, heat stress and habitat segregation between invasive (*Mytilus galloprovincialis*) and indigenous (*Perna perna*) mussels in South Africa. 42<sup>nd</sup> EMBS European Marine Biology Symposium. 2007, Kiel, Germany (oral)
- 9.** Zardi GI, McQuaid CD, Nicaastro KR, Teske PR, Barker NP. Larval dispersal, selection and the genetic structure of indigenous (*Perna perna*) and invasive (*Mytilus galloprovincialis*) mussels in South Africa. 42<sup>nd</sup> EMBS European Marine Biology Symposium. 2007, Kiel, Germany (oral)
- 8.** McQuaid CD, Zardi GI, Teske PR, Nicaastro KR, Barker NP. Adaptive genetic diversity in the intertidal mussel *Perna perna* on the southern African coast. 41<sup>st</sup> EMBS European Marine Biology Symposium. 2006, Cork, Ireland (oral)
- 7.** McQuaid CD, Bownes SJ, Zardi GI, Rius M, Erlandsson J, Porri F, Nicaastro KR, P Pal. Invasive/indigenous interactions: a case study of two intertidal mussels. Zoological Society of Southern Africa Symposium. 2005, Grahamstown, South Africa (oral)
- 6.** Nicaastro KR, Zardi GI, McQuaid CD. Sand inundation as a non-determinant factor in the zonation of two co-existing mussel species on South African rocky shores. 12th South African Marine Science Symposium. 2005, Durban, South Africa (oral)
- 5.** Zardi GI, Teske PR, Barker NP, McQuaid CD. Genetic structure of two mussel species, *Perna perna* and *Mytilus galloprovincialis*, along the coastline of Southern Africa. V South African Society of Systematic Biology Symp. 2005, Worcester, South Africa (oral)
- 4.** Zardi GI, McQuaid CD, Rius M, Porri F. Hydrodynamic stress as a determinant factor in habitat segregation between the indigenous mussel *Perna perna* and the invasive *Mytilus galloprovincialis* in South Africa. 12th S Afr Mar Sci Symp. 2005, Durban, South Africa (oral)
- 3.** McQuaid CD, Bownes SJ, Zardi GI, Rius M. Interaction between the indigenous mussel *Perna perna* and the invasive *Mytilus galloprovincialis* on the south coast of South Africa. World Congress of Malacology. 2004, Perth, South Africa (oral)
- 2.** McQuaid CD, Bownes SJ, Zardi GI, Rius M. Interaction between the indigenous mussel *Perna perna* and the invasive *Mytilus galloprovincialis* on the south coast of South Africa. World Congress of Malacology. 2004, Perth, South Africa (oral)
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