

**Dr. Giulia Ghedini** ([gghedini@igc.gulbenkian.pt](mailto:gghedini@igc.gulbenkian.pt))

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Publications: [Google Scholar](#)

[Website](#)

## POSITIONS

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- 12/2021 – present    **Group Leader, Functional Ecology Group**  
Gulbenkian Science Institute (IGC), Portugal
- 01/2019 – 11/2021    **Australian Research Council (ARC) DECRA Fellow**  
School of Biological Sciences, Monash University, VIC, Australia.  
*Host*: Prof. Dustin Marshall
- 07/2016 – 12/2018    **Postdoctoral Researcher**  
Marine Evolutionary Ecology Group & Centre for Geometric Biology, Monash University, VIC, Australia  
*Supervisor*: Prof. Dustin Marshall

## EDUCATION

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- 02/2013 – 12/2016    **PhD in Ecology** (Dean's Commendation for Doctoral Thesis Excellence)  
Southern Seas Ecology Laboratories, The University of Adelaide, SA, Australia  
*Supervisors*: Prof. Sean D. Connell, Prof. Bayden Russell  
*Thesis*: Ecological resistance and buffers of environmental change.
- 09/2011 – 10/2012    **M.Sc. in Marine Biology** (awarded with 110/110)  
Department of Biology, The University of Pisa, Italy  
*Supervisors*: Prof. Lisandro Benedetti-Cecchi, Prof. Fabio Bulleri  
*Thesis*: Impacts of invasive species on native macroalgal communities.
- 01/2010 – 01/2011    **B.Sc. Honours in Marine Ecology** (awarded with First Class Honours)  
Centre for Research on Ecological Impacts of Coastal Cities, The University of Sydney, NSW, Australia  
*Supervisor*: Prof. Ross A. Coleman  
*Thesis*: Effects of stormwater pollution on marine invertebrate assemblages.
- 09/2006 – 07/2009    **Bachelor Degree in Biological Sciences** (awarded with 110/110 *cum laude*)  
Department of Biology and Evolution, University of Ferrara, Italy.

## PUBLICATIONS

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- Ghedini G**, Marshall DJ (2023). Metabolic evolution in response to interspecific competition in a eukaryote. *Current Biology*, 33:2952-2961.e5. DOI: 10.1016/j.cub.2023.06.026.
- Ghedini G**, Marshall DJ, Loreau M (2022). Phytoplankton diversity affects biomass and energy production differently during community development. *Functional Ecology*, 36, 446-457. doi:10.1111/1365-2435.13955.
- Nørgaard LS, **Ghedini G**, Phillips BL, Hall MD (2021). Energetic scaling across different host densities and its consequences for pathogen proliferation. *Functional Ecology*, 35:475-484, <https://doi.org/10.1111/1365-2435.13721>.
- Lovass M, Marshall DJ, **Ghedini G** (2020). Conspecific chemical cues drive density-dependent metabolic suppression independently of resource intake. *Journal of Experimental Biology*, jeb.224824, doi:10.1242/jeb.224824.
- Ghedini G**, Malerba ME, Marshall DJ (2020). How to estimate community energy flux? A comparison of approaches reveals that size-abundance trade-offs alter the scaling of community energy flux. *Proceedings of the Royal Society B*, 287(1933):20200995, <https://doi.org/10.1098/rspb.2020.0995>.

6. Malerba ME, **Ghedini G**, Marshall DJ (2020). Genome size affects fitness in the eukaryotic alga *Dunaliella tertiolecta*. *Current Biology*, 30:3450-3456.e3, <https://doi.org/10.1016/j.cub.2020.06.033>.
7. **Ghedini G**, Loreau M, Marshall DJ (2020). Community efficiency during succession: a test of MacArthur's minimisation principle in phytoplankton communities. *Ecology*, 101:e03015, <https://doi.org/10.1002/ecy.3015>.
8. **Ghedini G**, Loreau M, White CR, Marshall DJ (2018). Testing MacArthur's minimisation principle: do communities minimise energy wastage during succession? *Ecology Letters*, 21:1182-1190, <https://doi.org/10.1111/ele.13087>.
9. **Ghedini G**, White CR, Marshall DJ (2018). Metabolic scaling across succession: do individual rates predict community-level energy use? *Functional Ecology*, 32: 1447–1456, <https://doi.org/10.1111/1365-2435.13103>.
10. **Ghedini G**, Craig R. White, Dustin J. Marshall (2017). Does energy flux predict density dependence? An empirical field test. *Ecology*, 98: 3116–3126, <https://doi.org/10.1002/ecy.2033>.
11. **Ghedini G** & Connell SD (2017) Moving ocean acidification research beyond a simple science: Investigating ecological change and their stabilizers. *Food Webs*, 13: 53-59, <http://doi.org/10.1016/j.fooweb.2017.03.003>. Invited review.
12. Provost EJ, Kelaher BP, Dworjanyn SA, Russell BD, Connell SD, **Ghedini G**, Gillanders BM, Figueira W, Coleman M A (2016) Climate-driven disparities among ecological interactions threaten kelp forest persistence. *Global Change Biology*, 23:353-361, <https://doi.org/10.1111/gcb.13414>.
13. **Ghedini G** & Connell SD (2016) Organismal homeostasis buffers the effects of abiotic change on community dynamics. *Ecology*, 97(10): 2671-2679, <https://doi.org/10.1002/ecy.1488>.
14. Connell SD, Nimmo DG, **Ghedini G**, Mac Nally R, Bennett AF (2016) Ecological Resistance – Why Mechanisms Matter: A Reply to Sundstrom et al. *Trends in Ecology & Evolution*, 31(6):413-414, <https://doi.org/10.1016/j.tree.2016.03.015>.
15. Connell SD & **Ghedini G** (2015) Resisting regime-shifts: the stabilising effect of compensatory processes. *Trends in Ecology and Evolution*, 30(9):513-515, <https://doi.org/10.1016/j.tree.2015.06.014>. Cover photo.
16. **Ghedini G**, Russell BD, Connell SD (2015) Trophic compensation reinforces resistance: herbivory absorbs the increasing effects of multiple disturbances. *Ecology Letters*, 18(2):182-187, <https://doi.org/10.1111/ele.12405>. Cover photo.
17. Falkenberg LJ, Connell SD, Coffee OI, **Ghedini G**, Russell BD (2015) Species interactions can maintain resistance of subtidal algal habitats to an increasingly modified world. *Global Ecology and Conservation*, 5:549-558, <https://doi.org/10.1016/j.gecco.2015.10.003>.
18. **Ghedini G**, Russell BD, Falkenberg LJ, Connell SD (2015) Beyond spatial and temporal averages: ecological responses to extreme events may be exacerbated by local disturbances. *Climate Change Responses*, 2(6):1-8, <https://doi.org/10.1186/s40665-015-0014-8>.
19. **Ghedini G**, Russell BD, Connell SD (2013) Managing Local Coastal Stressors to Reduce the Ecological Effects of Ocean Acidification and Warming. *Water*, 5(4):1653-1661. <https://doi.org/10.3390/w5041653>. Invited review.
20. Maggi E, Benedetti-Cecchi L, Castelli A, Chatzinikolaou E, Crowe T, **Ghedini G**, Kotta J, Lyons D, Ravaglioli C, Rilov G, Rindi L, Bulleri F (2014) Ecological impacts of invading seaweeds: a meta-analysis of their effects at different trophic levels. *Diversity & Distributions*, 21(1):1-12, <https://doi.org/10.1111/ddi.12264>.
21. Tamburello L, Benedetti-Cecchi L, **Ghedini G**, Alestra T, Bulleri F (2012) Variation in the structure of subtidal landscapes in the NW Mediterranean Sea. *Marine Ecology Progress Series*, 457:29-41. <https://doi.org/10.3354/meps09703>.
22. **Ghedini G**, Klein JC, Coleman RA (2011) Potential effects of storm-water runoff on assemblages of mobile invertebrates. *Marine Ecology Progress Series*, 439:169-180. <https://doi.org/10.3354/meps09307>.

## RESEARCH GRANTS AND FELLOWSHIPS AS PI

<i>As group leader</i>		
2024 – 2028	ERC Starting Grant 2023 (project META_FUN)	1.5 mil EUR
2021 – 2023	“la Caixa” Junior Leader Incoming Fellowship	300.000 EUR
<i>As postdoc</i>		
2021 – 2022	Marie Skłodowska-Curie Widening Fellowship (declined)	160.000 EUR
2019 – 2021	Australian Research Council DECRA Fellowship	410.000 AUD
2019	Advancing Diversity in Biology Grant, Monash University	2.000 AUD
<i>As PhD student</i>		
2015	Lirabenda Endowment Fund, The Field Naturalists Society of South Australia	3.000 AUD
2015	Conchological Society of Great Britain & Ireland Research Grant	1.000 GBP
2014	Conservation Biology Grant, Nature Conservation Society of South Australia	1.000 AUD
2013	Ecological Society of Australia Student Research Grant	1.500 AUD
2013	Dr. Paris Goodsell Marine Ecology Research Grant	1.500 AUD
2013	Nature Foundation of South Australia Research Grant	3.000 AUD
<i>Pre-PhD</i>		
2013 – 2016	International Postgraduate Research Scholarship, University of Adelaide	160.000 AUD
2013 – 2016	President's Scholarship, University of Technology of Sydney (declined)	
2013 – 2016	Macquarie University Research Excellence Scholarship (declined)	

## PRIZES AND AWARDS

2019	Career Development Award, School Biological Sciences, Monash University	10.000 AUD
2019	Australian Academy of Science, JG Russell Award for top-ranked DECRA	6.000 AUD
2018	Commendation for Science Award Research Excellence by an ECR, Monash University	2.000 AUD
2017	Mike Cullen Award, School of Biological Sciences, Monash University	5.000 AUD
2016	Dean's Commendation for Doctoral Thesis Excellence, The University of Adelaide	
2016	School of Biological Sciences Postgraduate Achievement Award, The University of Adelaide	500 AUD
2016	Best student presentation, 11 <sup>th</sup> International Temperate Reef Symposium, Pisa, Italy	500 EUR
2015	Best student presentation, Australian Marine Science Association Symposium, Adelaide	500 AUD
2008	Overseas Exchange Program Scholarship, University of Ferrara, Italy	1.800 EUR

## INVITED SEMINARS

<i>Upcoming</i>		
TBA/12/2023	School of the Environment, <b>The University of Queensland</b> , Australia. Host: Dr. Simon Hart.	
28/11/2023	School of BioSciences, <b>The University of Melbourne</b> , Australia. Host: Dr. Vanessa Marcellino.	
10/11/2023	Centre of Functional Ecology and Evolution (CEFE), <b>CNRS Montpellier</b> , France. Host: Dr. Luis-Miguel Chevin.	
<i>Past</i>		
15/09/2023	Department of Fundamental Microbiology, <b>University of Lausanne</b> , Switzerland. Host: Prof. Sara Mitri.	

13/01/2023	Centre for Ecology, Evolution and Environmental Changes, Faculty of Science, <b>University of Lisbon</b> , Portugal. Host: Prof. Sara Magalhães.
02/12/2022	Institute of Marine Ecosystem and Fishery Science, <b>University of Hamburg</b> , Germany. Host: Prof. Elisa Schaum.
11/03/2021	<b>Leibniz-Institute of Freshwater Ecology and Inland Fisheries (IGB)</b> , Berlin, Germany. Host: Prof. Thomas Mehner.
16/10/2020	School of Biological Sciences, <b>The University of Sydney</b> , NSW, Australia. Host: Dr. Ezequiel Marzinelli.
05/05/2020	<b>Eawag, Department of Aquatic Ecology</b> , Zurich, Switzerland. Host: Prof. Florian Altermatt.
13/03/2020	School of Biological Sciences, <b>The University of Adelaide</b> , Australia. Host: Prof. Sean D. Connell.
05/09/2019	<b>Centre for Biodiversity Theory and Modelling</b> , CNRS Moulis, France. Host: Prof. Michel Loreau.
26/08/2019	Institute for Chemistry and Biology of the Marine Environment (ICBM), <b>Carl-von-Ossietzky University Oldenburg</b> , Germany. Host: Prof. Helmut Hillebrand.
15/05/2019	School of Biological Sciences, <b>Macquarie University</b> , NSW, Australia. Host: Dr. Chris Reid.
10/07/2018	Department of Biological Science, <b>Florida State University</b> , Tallahassee, Florida, US. Host: A/Prof. Sophie McCoy.
20/06/2016	<b>Centre for Biodiversity Theory and Modelling</b> , CNRS, France. Host: Prof. Michel Loreau.
16/06/2016	Institute of Biology, <b>École Normale Supérieure</b> , Paris. Hosted by Prof H�el�ene Morlon
15/10/2015	School of Biological Sciences, <b>Melbourne University</b> , Australia. Host: Prof. Steve Swearer.

## INVITED CONFERENCE TALKS

### *Upcoming*

TBA/07/2024	<b>Gordon Research Conference “Unifying Ecology Across Scales”</b> , US. Chair: Prof. John DeLong.
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### *Past*

03/07/2022	<i>Invited keynote</i> : <b>Society for Experimental Biology</b> satellite meeting “ <i>Why and how does metabolic rate scale with body size?</i> ”. Montpellier, France. Chair: Dr. Tommy Norin.
25/07/2020	<b>Gordon Research Conference “Unifying Ecology Across Scales”</b> , Southern New Hampshire, US. Chairs: Prof. Angelica Gonzalez & John DeLong. (cancelled due to Covid-19).
22/07/2018	<b>Gordon Research Seminar “Unifying Ecology Across Scales”</b> , University of New England, US. Chairs: Dr. Julie Messier & Dr. Diego Barnache.
27/03/2017	<i>Opening keynote</i> : Berlin-Brandenburg Institute of Advanced Biodiversity Research annual meeting (BBIB). <b>Freie Universit�at</b> , Berlin. Host: Prof. Matthias Rillig.

## CONTRIBUTED CONFERENCE TALKS

- Ghedini G. “Metabolic evolution in response to competition in phytoplankton”. **6<sup>th</sup> Workshop on Trait-based Approaches to Ocean Life**, Copenhagen, Denmark, 15-17 August 2023.
- Ghedini G. “How metabolic plasticity affects community scaling patterns”. **Society for Experimental Biology Centenary conference**, Edinburgh UK, 4-7 July 2023.
- Ghedini G. “Metabolic evolution in response to intra- and inter-specific competition in phytoplankton”. **ASLO Aquatic Sciences meeting**, Palma, Spain, 5-9 June 2023. NOTE: Talk accepted but I cancelled it because conflicting with ERC interview.
- Ghedini G, White CR, Marshall DJ. “Can ecological interactions alter individual energy use?” **Gordon Research Seminar “Unifying Ecology Across Scales”**, University of New England, US, 22-27 July 2018.
- Ghedini G, White CR, Marshall DJ. “Population density alters *per capita* energy use: an energetic explanation of density-dependent growth.” **Ecological Society of America 102<sup>nd</sup> Annual Meeting**, Portland, US, 6-11 August 2017.

6. Ghedini G, Russell BD, Connell SD. "Exploring resistance to change." **11<sup>th</sup> International Temperate Reef Symposium**, Pisa, Italy, 26-30 June 2016.
7. Ghedini G, Russell BD, Connell SD. "Resisting regime-shifts: the stabilising effects of compensatory processes." **Ecological Society of Australia**, Adelaide, December 2015.
8. Ghedini G, Russell BD, Connell SD. "Resisting regime-shifts: the stabilising effects of compensatory processes." **Australian Marine Science Association (AMSA) SA Symposium**, Flinders University, Adelaide, 30<sup>th</sup> October 2015.
9. Ghedini G, Russell BD, Connell SD. "Loss of resistance to gradual and abrupt abiotic change: when compensatory mechanisms fail." **AMSA National Conference**, Geelong, VIC, Australia, 5-9 July 2015.
10. Ghedini G, Russell BD, Connell SD. "Ecosystem stability: how climate change can erode processes that counter the effects of disturbance." **Third International Symposium: Effects of Climate Change on the World's Oceans**, Santos City, Brazil, 23-27 March 2015.
11. Ghedini G, Russell BD, Connell SD. "Can compensatory mechanisms counterbalance the effects of multiple stressors?" **AMSA National Conference**, Canberra, Australia, 6-10 July 2014.
12. Ghedini G, Russell BD, Connell SD. "Compensatory mechanisms: a counter to multiple stressors?" **10<sup>th</sup> International Temperate Reefs Symposium**, Perth, WA, Australia, 12-17 January 2014.

## SUPERVISION OF RESEARCH STUDENTS AND STAFF

<i>As PI at the Gulbenkian Science Institute, Portugal</i>	
2023	Primary supervisor of 1 postdoc (Charlotte Briddon), 1 PhD candidate (Daniela Almeida), 1 master student of IMBRSea (International Master of Science in Marine Biological Resources) (Aurora Garcia), 1 summer school student (Carla Gomes), 1 technician (Ricardo Estevens).
2022 – 2023	Primary supervisor of 1 lab manager (Moritz Klaassen).
2022	Primary supervisor of 1 technician (Teresa Nobre), 1 summer school student (Mark Deleja), 1 undergraduate student intern (Carolina Rattner).
<i>As postdoc at Monash University, Australia</i>	
2019 – 2020	Primary supervisor of 2 B.Sc. Honours students (Jiaye Qin, Melanie Lovass). Both completed with First Class Honours. 1 co-authored publication (Lovass <i>et al.</i> 2020).
2019 – 2021	Primary supervisor of 2 research assistants (Mia Wansborough, Jiaye Qin).
2018 – 2019	Research project supervisor of third-year undergraduate students during the field course component of the unit " <i>Marine biology</i> " (Semester I, 2018 and 2019).
<i>As PhD student at the University of Adelaide, Australia</i>	
2014	Co-supervisor of Zach McIntosh, B.Sc. Honours student. Completed with Second Class Honours division A.

## TEACHING ACTIVITIES

2022 – 2023	Lecturer, <i>Evolutionary Biology &amp; Ecology</i> modules of PhD programme, Gulbenkian Science Institute, Portugal.
2018 – 2020	Guest Lecturer, B.Sc. unit <i>Marine Biology</i> (3 <sup>rd</sup> yr undergrad), Monash University, Australia.
2020	Evaluator of student assignments, B.Sc. unit <i>Life on Earth</i> (1 <sup>st</sup> yr undergrad) Monash University.
2015	Guest Lecturer, B.Sc. unit <i>Ecological Issues I</i> (1 <sup>st</sup> yr undergrad), The University of Adelaide, Australia.
2015	Tutor, B.Sc. unit <i>Principles &amp; Practice of Research II (Advanced)</i> (2 <sup>nd</sup> yr undergrad), The University of Adelaide.
2014 – 2015	Demonstrator, B.Sc. unit <i>Research Methods in Environmental Biology III</i> (3 <sup>rd</sup> yr undergrad), The University of Adelaide.

## INSTITUTIONAL RESPONSABILITIES AND EVALUATION PANELS

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2023 – present	<i>Member of PhD committee</i> of Melman Neill, Marine Science Institute, University of Texas at Austin. Supervisor: A/Prof. Simon Brandl
2022 – present	<i>Member of PhD committee</i> of Samuel Acheampong, Microbial Genomics & Symbiosis group, IGC. Supervisor Dr. Waldan Kwong.
11/2023	<i>Internal examiner</i> of PhD thesis by Hermina Ghenu, Gulbenkian Science Institute (IGC). Supervisors Dr. Claudia Bank & Dr. Isabel Gordo.
02/2023	<i>External examiner and reviewer</i> of PhD thesis by Soraya Alvarez-Codesal, Theoretical and Experimental Ecology Research Station, CNRS-University of Toulouse, France. Supervisor Dr. Jose Montoya.
11/2022	<i>Internal examiner</i> of PhD thesis by Massimo Amicone, Evolutionary Biology, IGC. Supervisor Dr. Isabel Gordo.
2022 – 2023	<i>Evaluator of applications</i> to the IBB PhD program, IGC.
2022 – 2023	<i>Co-organizer</i> of the <i>Ecology</i> module, PhD programme, IGC, Portugal.
09/2022	<i>Co-organizer</i> of PIs annual scientific retreat, IGC, Portugal.
2019 – 2020	<i>Examiner</i> of 3 Bc.S. Honours students (Biological Sciences), Monash University.

## REVIEWING ACTIVITIES

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2022	<b>Selection committee</b> , “la Caixa” Postgraduate Abroad Fellowships (interviewed 20 PhD and M.Sc. candidates in the life sciences panel).
Since 2020	<b>Associate Editor</b> for the journal <i>Functional Ecology</i> .
Since 2015	<b>Reviewer</b> for the major scientific journals in my field, including Ecology Letters, Ecology & Evolution, Proceedings Royal Society B, Journal of Ecology, Global Change Biology, Biological Reviews, Global Ecology and Biogeography, Ecography, Journal of Phycology.

## OUTREACH & ENGAGEMENT

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2023	Interview for the Portuguese newspaper <i>Publico</i> about Current Biology paper, <a href="#">article</a> .
2022	Interview for the Portuguese newspaper <i>Observador</i> about la Caixa project, <a href="#">article</a> .
2019	Panel member, “Early Career Researchers DECRA Panel Discussion 2020”, Monash University.
2019	Interview for International Day of Women in Science for Monash University, <a href="#">article</a>
2015 – 2021	Wrote and edited press releases for newly published articles as postdoc (examples: <a href="#">Ghedini et al. 2022</a> ; <a href="#">Lovass et al. 2020</a> ; <a href="#">Ghedini et al. 2020</a> ) and PhD student ( <a href="#">Ghedini et al. 2015</a> ). News coverage of published research: Australia and New Zealand Science Media Exchange ( <a href="#">article</a> ); Phys.org ( <a href="#">article 1</a> , <a href="#">article 2</a> ).
2015	Three Minute Thesis Competition, The University of Adelaide. Presentation of PhD research for general public. Title: “Looking beneath the surface: the invisible fight of nature against stress”.