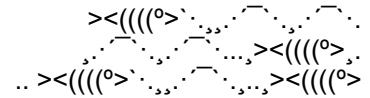


Celia Schunter



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EDUCATION

- 2018-current **Assistant Professor**, School of Biological Sciences, The University of Hong Kong & Swire Institute of Marine Science
- 2014-2018 **Postdoctoral Fellow**, Integrative Systems Biology Lab
KAUST Environmental Epigenetic Program (KEEP)
Division of Biological and Environmental Sciences & Engineering
King Abdullah University of Science and Technology, Saudi Arabia
- 2009-2013 **PhD Doctorate of Philosophy, Genetics** *Excellent (Summa) Cum Laude*
University of Barcelona / CSIC- Centro de Estudios Avanzados de Blanes
With International Recognition
Dissertation: Challenges in marine ecology: genomic investigations of dispersal patterns and phenotypic plasticity in Mediterranean Fishes
Advisors: Enrique Macpherson and Marta Pascual
- 2008-2009 **Master in Developmental Biology, Genetics and Evolution**
University of Barcelona
- 2007-2008 **Master in Biodiversity, Evolution and Conservation**
University of Barcelona
- 2003-2006 **Bachelor of Science**
Major in Marine Biology
James Cook University, Townsville, Australia
- 2002 **Abitur**
Werner-Heisenberg Gymnasium, Bad Durkheim, Germany

HONORS AND AWARDS

- 2016 Elected for KAUST Environmental Epigenetics Program Invited Lecture Committee
- 2014 Travel Grant by Tebu-bio for the SMBE meeting 2014
- 2013 Travel Grant for the Symposium on Epigenetics in Ecology and Evolution, Gif-sur-Yvette, France by the Soci t  Fran aise de G n tique
- 2012 Awarded 6 months Short-term research stay grant 2012 by Consejo Superior de Investigaciones Cientificas.
- 2012 Travel Grant to the Congenomics Workshop, Seville, by the European Science Foundation
- 2011 Awarded 6 months Short-term research stay grant 2011 by Consejo Superior de Investigaciones Cientificas.
- 2009 Four-year PhD Scholarship through the Consejo Superior de Investigaciones Cientificas
- 2006 Joe and Val Baker Prize for the student who best performed excellence in third year marine biology 2006
- 2005 Golden Key International Honours Society membership in recognition of outstanding scholastic achievement and excellence 2005

RESEARCH STAYS

- May – Nov 2012 With John Carlos Garza PhD, Molecular Ecology Team Leader, NOAA and University of California, Santa Cruz, USA
- Jan - July 2011 With Steve Vollmer PhD, Assistant Professor, Northeastern University, Marine Science Center, Boston, USA
- March - June 2006 With Gabriele Gerlach Prof. Dr., Marine Biological Laboratory, Woods Hole, USA (now Universit t Oldenburg, Germany)

GRANTS

- 2018- 2021 Marine Biodiversity and Genomics: from Populations to Communities (PopCOMics).
Financing entity: Spanish national Project CTM2017-88080 (AEI/FEDER, UE)
- 2016- 2019 Genomic evidence for adaptation of marine fishes to ocean acidification.
Financing entity: KAUST OCRF-2015-CRG

- 2015- 2018 Transcriptional program and the epigenome of transgenerational acclimation to climate change in reef fishes
Financing entity: KAUST OCRF-2014-CRG
- 2014- 2017 Addressing CHALLENGes in marine research with GENetic tools: introduced species, biodiversity assessment, adaptation to global warming. (CHALLENGEN).
Financing entity: Spanish national Project CTM2013-48163-C2-2-R
- 2012-2016 Towards COast to COast NETworks of marine protected areas (from the shore to the high and deep sea), coupled with sea-based wind energy wind potential. (COCONET)
European Union, 7th Framework Programme, Grant agreement no: 287844
- 2011-2013 Estimation of genetic diversity and effective population size of *Donax trunculus* in the Doñana National Park and its contribution to the surrounding not protected area.
National Parks, Spain
- 2011-2013 Detección de cambios en el bentos marino mediante herramientas moleculares: individuos, poblaciones, comunidades (BENTOMICS)
Translation: Detection of changes to the marine benthos using molecular tools: individuals, population and communities.
Financing entity: Spanish national Project CICYT. CTM2010-22218-C02-01

PUBLICATIONS

More details here: [GOOGLE SCHOLAR](#), [ORCID PROFILE](#)

16. Schunter C, Lehmann R, Bernal M, Ravasi T (2018) Unusual bilateral color pattern in a regal angelfish from the Red Sea. *Bulletin of Marine Science*. doi.org/10.5343/bms.2018.0050
15. Lehmann R, Lightfoot D, **Schunter C**, Mitchell CT, Ohyanagi H, Mineta K, Foret S, Berumen M, Miller DJ, Aranda M, Gojobori T, Munday P, Ravasi T (2018) Finding Nemo's Genes: A chromosome-scale reference assembly of the genome of the orange clownfish *Amphiprion percula*. *Molecular Ecology Resources*. doi.org/10.1111.1755-0998.12939
14. **Schunter C**, Welch M, Munday P, Ravasi T (2018) Behavioural tolerance to ocean acidification in the proteome. (in prep)

13. **Schunter C**, Macpherson E, Raventos N, Garriga J, Garza JC, Bartumeus F, Pascual M (2018) Seascape genetics at it's finest: dispersal patchiness within a well-connected population (in prep).
12. **Schunter C**, Bonzi L, Norstog J, Parkes S, McCabe M, Ravasi T (2017) Desert fish populations defy hydrological constraints via ecological and physiological adaptation. (*under review Scientific Reports*).
11. *****Schunter C**, Welch M, Nilsson G, Rummer J, Munday P, Ravasi T (2017) An interplay between plasticity and parental phenotype determines impacts of ocean acidification on a reef fish. *Nature Ecology & Evolution*. doi:10.1038/s42559/017-0428-8.
10. Boero F, Foglini F, Fraschetti S, Goriup P, Macpherson E, Planes S, Soukissian T, The CoCoNet Consortium (2017) CoCoNet: towards coast to coast networks of marine protected areas (from the shore to the high and deep sea), coupled with sea-based wind energy potential. *SCientific RESearch and Information Technology*, 6, 1-95.
9. Pascual M, Rives B, **Schunter C**, Macpherson E (2017) Impact of life history traits on gene flow: A multispecies systematic review across oceanographic barriers in the Mediterranean Sea. *PLoS One*. doi.org/10.1371/journal.pone.0176419
8. *****Schunter C**, Welch M, Ryu T, Zhang H, Nilsson G, Munday PL, Ravasi T (2016) Molecular signatures of transgenerational response to ocean acidification in a species of reef fish. *Nature Climate Change*, **6**, 1014-1018. doi:10.1038/ncimate3087. Altmetrics score (April 2017): 384.
7. Ryu T, Seridi L, Moitinho-Silva L, Oates M, Liew Y, Mavromatis C, Wang X, Haywood A, Lafi F, Kupresanin M, Sougrat R, Alzahrani M, Giles E, Ghosheh Y, **Schunter C**, Baumgarten S, Berumen M, Gao X, Aranda M, Foret S, Gough J, Voolstra CR, Hentschel U, Ravasi T (2016) Hologenome analysis of two marine sponges with different microbiomes. *BMC Genomics*, **17**, 158.
6. *****Schunter C**, Pascual M, Garza JC, Raventos N, Macpherson E (2014) Kinship analyses identify fish dispersal events on a temperate coast line. *Proceedings of the Royal Society B*, **281**, 20140556.
5. *****Schunter C**, Vollmer S, Macpherson E, Pascual M (2014) Transcriptome analyses and differential gene expression in a non-model fish species with alternative mating tactics. *BMC Genomics*, **15**, 167.
4. **Schunter C**, Garza C, Macpherson E, Pascual M (2014) SNP development from RNA-seq data in a non-model fish: how many individuals are needed for accurate allele frequency prediction? *Molecular Ecology Resources*, **14**, 157–165.

3. *****Schunter C**, Carreras-Carbonell J, Macpherson E, Tintoré J, Vidal-Vijande E, Pascual A, Guidetti P, Pascual M (2011) Matching genetics with oceanography: directional gene flow in a Mediterranean fish species. *Molecular Ecology*, **20**, 5167–81.
2. **Schunter C**, Carreras-Carbonell J, Planes S, Sala E, Ballesteros E, Zabala M, Harmelin J-G, Harmelin-Vivien M, Macpherson E, Pascual M (2011) Genetic connectivity pattern in an endangered species: the dusky grouper (*Epinephelus marginatus*). *Journal of Experimental Marine Biology and Ecology*, **401** (1-2), 126-133.
1. Gerlach G, Hotchkins-Davis A, Avolio C, **Schunter C** (2008) Kin recognition in Zebrafish: a 24-hour window for olfactory imprinting. *Proceedings of the Royal Society: Biological Sciences*. **275**: 1647, 2165 -2170

SUMMARY OF RECENT RESEARCH ACHIEVEMENTS

Over the last few years the research I have conducted and have collaborated and contributed to our understanding of transgenerational plasticity in the context of anthropogenic change in aquatic systems. The investigations have delivered important insight into the mechanisms of acclimation in a variety of aquatic organisms, from coral reef fish, to desert fish all the way to commercial fish species. The particular focus has been on the behavioural impairment of fishes with the CO₂ increase in the oceans where adaptation potential seems limited, but individual variation within populations might allow for population persistence. An additional field of research involves fish adapted to living in deserts and their immense salinity tolerance when being washed out to the highly saline Red Sea. Understanding the potential and the mechanism of acclimation and adaptation allows for better predictions of future changes to populations, species and ecosystems and is fundamental for management decisions.

INVITED TALKS, TEACHING & MENTORING

- 2018 Adaptation and Phenotypic Plasticity as a response to Global Change. University of Hong Kong, Hong Kong.
- 2017 Molecular signatures of transgenerational response to ocean acidification in a species of reef fish. Invited talk at SCRIPPS Oceanographic Institute, San Diego, USA
- 2017 Effects of ocean acidification on a species of coral reef fish. Invited talk at the University of California, Santa Cruz.
- 2016 Genome-wide patterns of tolerance to effects ocean acidification. Invited talk at the University of Oldenburg, Germany
- 2016 Teaching: ‘Genomics’ Master level course: The era of Next Generation Sequencing and it’s applications

- 2016 ‘Signatures of transgenerational molecular brain response to ocean acidification in a reef fish. Invited talk at the ARC Center of Excellence for Coral Reef Studies, Townsville, Australia. <https://www.youtube.com/watch?v=HvZkPquqyuk>
- 2015 Teaching: Marine Summer Course in KAUST
- 2015 ‘Molecular Responses to Ocean Acidification in Coral Reef Fish’ at the Biological and Environmental Sciences and Engineering division at KAUST.
- 2014 ‘Investigations of phenotypic plasticity and dispersal patterns in a Mediterranean Fish’ at the Centro de Estudios Avanzados de Blanes, National Research Council
- 2014 Teaching: ‘Introduction to next generation Sequencing and its application in marine species’ at the Genetics Department, University of Barcelona for the Master’s degree course ‘Population genetics and connectivity in marine organisms’
- 2014 ‘Genomic investigations of dispersal patterns and phenotypic plasticity in a Mediterranean fish species’. Invited talk at Washington State University, Pullman
- 2013 Teaching: ‘Conservation Genomics’ at the Genetics Department, University of Barcelona for the Master’s degree course ‘Population Genetics’
- 2012 ‘The mating genes, what determines dominance’ at the Genetics Department, University of Barcelona

I have created projects and officially mentored three invited visiting students (graduate and postgraduate level) and I am currently supervising three PhD students in the Integrative Systems Biology lab in KAUST.

CONFERENCE PARTICIPATIONS

- 2018 Marine Evolution 2018. Symposium leader. ‘Adaptation in Marine Species as a Response to Global Change’, Gothenburg, Sweden.
- 2017 The 10th Indo-Pacific Fish Conference. Symposium organizer & presenter: ‘Phenotypic plasticity and adaptation to anthropogenic environmental changes’.
& co-author on four further presentations on *Amphiprion percula* genome analysis, parental tolerance to CO₂ and Arabian killifish salt exposure experiments.
- 2017 Society of Experimental Biology Annual meeting.’ An interplay between plasticity, epigenetics, and parental phenotype determines impacts of ocean acidification on a reef fish’. Gothenburg, Sweden.
Oral presentation
- 2017 KAUST-UCI Symposium ‘Epigenetics and Environment’. ‘Epigenetic processes in Adaptation to Ocean Acidification’, KAUST, Saudi Arabia.
Oral presentation
- 2017 Society on NeuroImmune Pharmacology. Symposium on Systems Biology. The function of the brain in global warming. Philadelphia, USA.
Invited oral presentation

- 2016 Society of Molecular Biology and Evolution meeting 2016 symposium organizer and coordinator: ‘Mechanisms of transgenerational adaptation to environmental change’ on the Gold Coast, Australia.
- 2016 International Coral Reef Symposium, Hawaii
‘Molecular signatures of transgenerational response to ocean acidification in a coral reef fish’
Oral presentation
- 2015 Invited talk on seascape genetics at the International Association of Landscape Ecology in Portland, Oregon, USA.
- 2015 SMBE satellite meeting SMBEBA: Investigating biological adaptation with NGS: data and models, Hameau de l’etoile, France.
- 2014 XX Seminario de Genética de Poblaciones y Evolución
‘Fishy’ relationships: genomic investigations into dispersal patterns and family affairs.
Oral presentation
- 2014 Society of Molecular Biology and Evolution Meeting 2014, San Juan, Puerto Rico
‘Head’-ing towards the understanding of tissue expression differences in pooled and non-pooled data via RNAseq’
Poster presentation
SMBE Poster Judge
- 2014 2nd CNAG Symposium on Genome Research: Epigenomics, Barcelona, Spain
- 2013 Symposium on Epigenetics in Ecology and Evolution, Gif-sur-Yvette, France
‘Environmental Epigenomics: Plastic and heritable responses to social cues and environmental pollution’
Poster and short oral presentation
- 2013 IV Spanish Society for Evolutionary Biology meeting, Barcelona, Spain
‘Retention and fish larval dispersal potential on a highly connected open coast line’
Poster presentation
- 2013 GDRE (European Research Group): Comparative Genomics meeting, Barcelona, Spain
- 2013 XIV Congress of European Society of Evolutionary Biology, Lisbon, Portugal
‘Differential gene expression in a non-model fish species with alternative mating tactics’
Oral presentation
- 2013 XXIX Congreso de la Sociedad Española de Genética, Girona, Spain
‘Conectividad y conservación en organismos marinos: desafíos en un mundo cambiante’
Oral presentation
- 2013 XI Jornada Societat Catalana de Biología Evolutiva, Barcelona, Spain
‘Differential gene expression in a non-model fish species with alternative mating tactics’
Oral presentation
- 2013 1st CNAG Symposium on Genome Research, Barcelona, Spain
- 2012 Evolution, 1st joint Congress on Evolutionary Biology, Ottawa, Canada
‘The mating genes: what determines dominance?’
Poster Presentation
- 2012 Conservation Genomics Workshop, Seville, Spain
- 2012 Simposio Ibérico de Estudios en Biología Marina, Septiembre 2012, San Sebastián, Spain
‘The mating genes: what determines dominance?’
Oral presentation
- 2012 XIX Seminario de Genética de Poblaciones y Evolución, Urduña, Spain

- ‘Análisis genético y morfométrico en el cangrejo *Liocarcinus depurator* en la transición Atlanto-Mediterránea’
 Oral presentation
- 2011 Sociedad Española de Biología Evolutiva, Madrid, Spain.
 ‘Matching genetics with oceanography: directional gene flow in a Mediterranean fish species.’
 Oral Presentation
- 2010 XVIII Seminario de Genética de Poblaciones y Evolución, Lugo, Spain.
 ‘Discontinuidades genéticas y geográficas’
 Oral Presentation
- 2009 XXXVII Congreso de la Sociedad Española de Genética, Málaga, Spain
 ‘Efecto de las discontinuidades oceanográficas sobre la diferenciación genético-poblacional en especies litorales’
 Poster Presentation
- 2009 XII Congress of European Society of Evolutionary Biology, Turin
 ‘Genetic population structure and Atlanto-Mediterranean oceanographic discontinuities’
 Poster Presentation

FURTHER RESEARCH EXPERIENCE

- Oct 2013– May 2014 Research assistant for the *Drosophila subobscura* transcriptome project, analysis of RNAseq data.
 With Marta Pascual PhD, Genetics Department, University of Barcelona, Spain
- Sept – Dec 2006 Independent survey to establish a Marine Research Station Unified project with ECO Project Ltd. and the NGO Environment Tobago to establish a marine and terrestrial research Station in Charlotteville, Tobago
- March- June 2006 Laboratory Internship and Research Assistant
 With Gabriele Gerlach PhD, Marine Biological Laboratory, USA
- 2003-2005 Dive Club Secretary, Dive Club, James Cook University, Townsville, Australia
- July 2004 Research assistant James Cook University, Moreton Island, Australia
- June 2002-Sept 2002 Assistance with water analysis
 BASF Group water treatment plant, Ludwigshafen, Germany

REVIEWING

I have been invited to serve as an external referee for over 50 scientific papers and review articles, including service for: Molecular Ecology, Molecular Ecology Resources, Scientific Reports, Genetica, Conservation Genetics, Ecology and Evolution, PLOS ONE, Marine

Ecology, Frontiers in Genetics and Heredity. I am a Review Editor on the Marine Molecular Biology and Ecology Editorial Board for the Journal Frontiers in Marine Science as well as the Evolutionary and Population Genetics Editorial Board for Frontiers in Ecology and Evolution.

I am currently part of the Reviewer Circle of the Committee for Research and Exploration (CRE) of the National Geographic Society.

Please find my verified reviewer profile here: [PUBLONS](#)

I have reviewed grants and proposals for the Great Lakes Fishery Commission, la comisión sectorial de investigación científica and the National Science Foundation.

FURTHER SKILLS

Bioinformatics: Programming skills in R and PYTHON scripting.

Languages: I speak English, German, Spanish and Catalan fluently and basic French. I worked as a part-time English and German teacher for two years at Phonelearning Ltd. in Barcelona.

Field work: Rescue Diver PADI certificate and recreational boat licenses for Europe and Australia.

Social engagement and Outreach: Highschool award for social engagement; Organization of social events integrating international students at James Cook University; 2011 volunteer at the Science Fair, Boston; Saudi Research Science Institute (SRSI) summer research program mentor, Mentor for Women in Science (KAUST).