

Unit Name

Marine Climate Change Unit
Professor Timothy Ravasi

Students Supervised:

- Ayse Haruka Oshima Acikbas (PhD Student)
- Johanna Linnea Johansson (PhD Student)
- Callum James Hudson (PhD Student)
- Yijin Lee (PhD Student)
- David Anthony Neary Ross (Research Intern)
- Joy Shana Yamila Scherrer (Research Intern)
- Olha Kilnitska (Research Intern)
- Marissa Maureen Bornn (Research Intern)
- Cocomi Inamura (Research Intern)
- Yuka Matsukawa (Research Intern)
- Guillermo Mironenko Castello (Research Intern)
- Aaron Matthew Hasenei (Visiting Research Student)

Scholarly Contributions and Creative Productions (by Faculty)

Journal Article

1. A Mitchell, C Hayes, CJ Hudson, SD Connell, BP Harvey, S Agostini et al. Marine Heatwaves, Ocean Warming and Acidification Reshape Reef Fish Gut Microbiomes. *Molecular Ecology* 35 (5), e70275. 2026
2. A Mitchell, EOC Coni, SD Connell, DJ Booth, BP Harvey, S Agostini et al. Range-extending fish become competitive dominants under ocean warming but not heatwaves or acidification. *Ecology* 107 (2), e70226. 2026
3. J Kang, I Nagelkerken, S Coppersmith, SD Connell, T Ravasi, C Schunter. Core Transcriptional Plasticity Pave the Way for Fish to Succeed in a High-CO₂ World. *Molecular Ecology* 35 (2), e70222
4. Hayes, C.; Mitchell, A.; Ravasi, T.; Nagelkerken, I.
Natural Analogues of Climate Change Can Reveal Fish Responses Across Multiple Levels of Biological Organisation. *Fish and Fisheries*.
<https://doi.org/10.1111/faf.70051>
5. Huerlimann, R.; McMahon, S. J.; Izumiyama, M.; Li, C.; Jolly, J.; Kawai, E.; Ravasi, T.
The Gut Microbiome and Host Molecular Response of a Grouper to Acute and Chronic Heat Stress. *Aquaculture* 2025, 599, 742141.
6. Ravasi, T.; Costa, K. A.; Harii, S.; Camacho, C. G.; Donaldson, J.; Jolly, J.; McMahon, S.; Bowden, J. A.

- Effects of PFOS on Larval Symbiont Acquisition, Lipidome, and Metamorphosis of an Acropora Coral. *Marine Biology* 2025, 172.
7. Wolfe, B. W.; Champion, C.; Gaston, T.; Brown, J.; Coleman, M. A.; Davis, T. R.; Frijlink, S.; Hatley, T.; Heather, F. J.; Jackson, G.; Keane, J. P.; Kjeldsen, S.; McGruther, M.; Moltschaniwskyj, N.; Moore, G.; Pearn, R.; Rodda, K. R.; Strugnell, J.; Stuart-Smith, J.; Turnbull, J. W.; Watson, S.-A.; Pecl, G. T.
Continental-Scale Assessment of Climate-Driven Marine Species Range Extensions Using a Decade of Citizen Science Data. *Diversity and Distributions* 2025, 31, e70022.
 8. Hudson, C. J.; Jolly, J.; Connell, S. D.; Ravasi, T.; Harvey, B. P.
Effects of Long-Term Ocean Acidification Exposure on the Structural, Mineralogical, and Mechanical Properties of Sea Urchin (*Echinometra* Spp.) Skeletons at a Natural Volcanic CO₂ Seep. *Environmental Science & Technology* 2025, 59, 26454–26468.
 9. Suresh, S.; Jarrold, M.; Ravasi, T.; Munday, P. L.; Schunter, C.
Ocean Acidification Induces Changes in Circadian Alternative Splicing Profiles in a Coral Reef Fish. *Scientific Reports* 2025, 15, 22107.
 10. Hayes, C.; Oshima, A.; Mitchell, A.; Booth, D. J.; Ravasi, T.; Nagelkerken, I.
Combining eDNA and Visual Surveys Improves Detection of Reef Fishes Across Their Biogeographic Ranges. *Diversity and Distributions* 2025, 31, e70089.
 11. Huerlimann, J. D.
Shifts in Coral Reef Holobiont Communities in the High-CO₂ Marine Environment of Iriomote Island. *PLOS Climate* 2025, 4, 1–19.
 12. Iwaki, Y.; Hamamoto, K.; Fabian, G.; Li, C.; Jolly, J.; Tang, S.-L.; Ravasi, T.; Reimer, J. D.
Bacterial Community Formation on Plastic and Glass in Coral Reefs. *Coral Reefs* 2025, 44, 2117.
 13. Moore, B.; McMahan, S.; Izumiyama, M.; Ryu, T.; Ravasi, T.
Ocean Warming Drives Tissue-Wide Metabolic Reprogramming in a Fish. *iScience* 2025, 28, 113395.
 14. Zhou, Y.; Trujillo-Gonzalez, A.; Nicol, S.; Huerlimann, R.; Sarre, S. D.; Gleeson, D.
Evaluation of DNA Barcoding Reference Databases for Marine Species in the Western and Central Pacific Ocean. *PeerJ* 2025, 13, e19674.
 15. Donnelly, L. F.; Kjeldsen, S. R.; Lott, M. J.; Leigh, K. A.; Field, M. A.; Cooke, I.; Wright, B. R.; Zenger, K. R.
Development and Validation of a Standardised Genomic Tool for Conservation Management of the Koala (*Phascolarctos Cinereus*). *Animals : an Open Access Journal from MDPI* 2025, 15.
 16. Bonzi, L. C.; Donelson, J. M.; Spinks, R. K.; Munday, P. L.; Ravasi, T.; Schunter, C.
Matching Maternal and Paternal Experiences Underpin Molecular Thermal Acclimation. *Molecular Ecology* 2025, 34, e17328.
 17. Hayes, C.; Mitchell, A.; Huerlimann, R.; Jolly, J.; Li, C.; Booth, D. J.; Ravasi, T.; Nagelkerken, I.
Stomach Microbiome Simplification of a Coral Reef Fish at Its Novel Cold-Range Edge Under Climate Change. *Molecular Ecology* 2025, 34, e17704.
 18. Costa, K. A.; Harii, S.; Camacho, C. G.; Donaldson, J.; Jolly, J.; McMahan, S.; Ravasi, T.; Bowden, J. A.
Effects of PFOS on Larval Symbiont Acquisition, Lipidome, and Metamorphosis of an Acropora Coral. *Marine Biology* 2025, 172, 91.
 19. Zhou, Y.; Trujillo-Gonzalez, A.; Nicol, S.; Boutigny, M.; Huerlimann, R.; Sarre, S. D.; Gleeson, D.
Impact of Degradation and Time of Sampling on Gut Microbiome Composition in Wild-Caught Marine Fish. *Scientific Reports* 2025, 15, 28947.
 20. Camacho, C.; Costa, K.; McMahan, S.; Jolly, J.; Ravasi, T.; Aufmuth, J.; Bowden, J.
PFAS Surveillance within a Highly Militarized Island: A Case Study of Okinawa, Japan. *Environmental Science: Processes and Impacts* 2024.
 21. Fiedler, B.; Montgomery, A.; Chong, F.; Miyagi, H.; Carletti, M.; Das, R.; Shintani, Y.; Ravasi, T.; Reimer, J.

- Delineation of Outbreak Stages of the Coral-Killing Sponge *Terpios Hoshinota*. *Regional Studies in Marine Science* 2024, 80.
22. Huerlimann, R.; Roux, N.; Maeda, K.; Piliieva, P.; Miura, S.; Chen, H.; Izumiyama, M.; Laudet, V.; Ravasi, T.
The Transcriptional Landscape Underlying Larval Development and Metamorphosis in the Malabar Grouper (*Epinephelus Malabaricus*). *eLife* 2024, 13.
23. Cipriani, V.; Goldenberg, S.; Connell, S.; Ravasi, T.; Nagelkerken, I.
Can Niche Plasticity Mediate Species Persistence under Ocean Acidification? *Journal of Animal Ecology* 2024, 93.
24. Ravasi, T.; Huerlimann, R.; McMahon, S. J.; Izumiyama, M.; Li, C.; Jolly, J.; Kawai, E.
The Gut Microbiome and Host Molecular Response of a Grouper to Acute and Chronic Heat Stress. *Aquaculture* 2024.
25. Ravasi, T.; Suresh, S.; Jarrold, M.; Munday, P. L.; Shunter, C.
Ocean Acidification Induces Changes in Circadian Alternative Splicing Profiles in a Coral Reef Fish. *CoLab* 2024.

Presentation at Conference

1. Ravasi, T.
Adaptation and Acclimation of Coral Reef Fish as a Response to Climate Change. Indo-Pacific Fish Conference 2025.

Scholarly Contributions (by Unit Members)

Name of Unit Member	Type	Title	Outlet	Year Pub
Roger Huerlimann, Chengze Li	Journal Article	Exploring the cobia (<i>Rachycentron canadum</i>) genome: unveiling putative male heterogametic regions and identification of sex-specific markers		
Shannon Kjeldsen	Journal Article	Page 1-31 Metagenomic insights into mechanisms of coral larval settlement induction and inhibition by marine biofilms	Research Square	2025
Callum Hudson	Other Scholarly Work	Analysis of Plant Hormone Dynamics During the Ripening Stages of Coffee. SUNTORY World Research Center Internship		
Ayşe Haruka Oshima Açıkbay	Poster Presentation at Conference	Long-term eDNA biomonitoring of the fish assemblage at the Mermaid's Grotto - "Apogama": The first year		
Chengze Li	Poster Presentation at Conference	The combined effects of ocean warming, suspended sediments and cross-generational thermal plasticity in a coral reef fish	The Japanese Coral Reef Society in Okinawa	
Joseph Proietti	Poster Presentation at Conference		"OIST x WPI-AIMEC (Tohoku U & JAMSTEC) Changing Marine Ecosystems" workshop at OIST	
Alexandeu Mihai	Poster Presentation at Conference	Tiling, clustering, and transfer learning: a scalable workflow for noisy plant species classification from ecological field images	GloBIAS Bioimage Analysis Conference	
Taewoo Ryu	Poster Presentation at Conference	1) Mobile elements landscape of intergenerational plasticity to ocean acidification in reef fish	IAMAS-IACS-IAPSO Joint Assembly, Busan, 2025	

Name of Unit Member	Type	Title	Outlet	Year Pub
Johanna Johansson	Presentation at Conference	Physiological Impacts of Suspended Sediments on Juvenile Coral Reef Fish	IPFC 2025	
Ayşe Haruka Oshima Acikbas	Presentation at Conference	日本全国の eDNA 調査による海洋魚類の生物地理学と生物多様性に関するデータギャップの解消	Okinawa Marine Science Workshop	2025
Yijin Lee	Presentation at Conference	Metabolic Responses of Clownfish (<i>Amphiprion ocellaris</i>) to Marine Heatwaves	Busan IAMAS–IACS–IAPSO Joint Assembly 2025 (BACO-25), Busan	
Alexandeu Mihai	Presentation at Conference	From Pixels to Insights: Unsupervised Learning in Tropical Fish Image Classification	2025 AIS & IPFC Clownfish Satellite Meeting	
Rikako Ozaki	Presentation at Conference	First Insights into Manta Ray Movement in Japan using Satellite Telemetry,	ASI & IPFC 12, Taipei, Taiwan.	
Ayşe Haruka Oshima Acikbas	Presentation at Conference	Japan-wide environmental DNA sampling complements existing data infrastructures and contributes occurrence records from the range margins	British Ecological Society	2025
Shannon Kjeldsen	Presentation at Conference	An Innovative Environmental Nucleic Acid Tools to Improve Sustainability of Fisheries and Aquaculture.	2025 ASI-IPFC 12: Sustainable Fisheries	
Roger Huerlimann	Presentation at Conference	Host molecular response of the malabar grouper (<i>Epinephelus malabaricus</i>) to a marine heatwave	the Indo-Pacific Fish Conference in Taipei, Taiwan	
Roger Huerlimann	Presentation at Conference	The transcriptional landscape underlying larval development and metamorphosis in the Malabar grouper (<i>Epinephelus malabaricus</i>)	Taipei, Taiwan	
Billy Moore	Presentation at Conference	Ocean Warming Drives Global Metabolic Reprogramming in Clownfish		
Billy Moore	Presentation at Conference			
Yijin Lee	Presentation at Conference	Evaluating 12S eDNA Primers for Monitoring Coral Reef Fish in Aquarium Setting		
Ayşe Haruka Oshima Açıkbaş	Presentation at Conference	OIST Marine Science Workshop, Okinawa. o Title: Long-term eDNA biomonitoring of the fish assemblage at the Mermaid's Grotto - "Apogama": The first two years		
Chengze Li	Presentation at Conference	The combined effects of ocean warming, suspended sediments and cross-generational thermal plasticity in a coral reef fish	Indo-Pacific Fish Conference	

Honors, Awards & Fellowships

Term 2 2021 - Ongoing

Appointment to work alongside researchers at the James Cook University's Australian Research Council (ARC) Centre of Excellence for Coral Reef Studies, 2021, James Cook University

Honors, Awards & Fellowships [By Unit Members Only]

Term 1 2025 - Term 3 2025	Rikako Ozaki, PADI Ambassador 2026, PADI Ambassador 2026, 2025-2026, PADI, na [Fiscal Year: 2025-04-01]
Term 2 2025 - Ongoing	Roger Huerlimann, Received a 2 year ECR industry engagement support grant., Received a 2 year ECR industry engagement support grant., 2025-2026, OIST, na [Fiscal Year: 2025-10-01]
Term 1 2024 - Term 3 2025	Callum Hudson, European Marine Biological Resource Centre Italy (EMBRC-IT) Funded Access Call Award, 将来の海洋状況の自然類似物を使用した海水酸性化がウニに与える影響理解, 2024, European Marine Biological Resource Centre Italy (EMBRC-IT), プロジェクト「将来の海洋状況の自然類似物を使用した海水酸性化がウニに与える影響理解」に対して欧州海洋生物資源センターイタリア (EMBRC-IT) よりアワード受賞 [Fiscal Year: 2024-04-01]
Term 2 2024 - Ongoing	Callum Hudson, Kyushu University Preparation for Faculty Position (PFFP) Teaching Fellow, 九州大学にて Teaching Fellow, Kyushu University, Kyushu University, 九州大学にて Teaching Fellow [Fiscal Year: 2024-04-01]

Outreach Activities [For Unit Members Only]

Term 2 2026	Joseph Proietti, • Gave a ~1 hour lecture to high school students from Okinawa International School about marine biology and climate change. [Fiscal Year: 2025-12-01]
Term 2 2026	Rikako Ozaki, ClubMed x Manta Trust Workshop [Fiscal Year: 2025-11-01]
Term 2 2026	Rikako Ozaki, Kumejima Diving Association Manta Workshop [Fiscal Year: 2025-10-01]
Term 2 2026	Rikako Ozaki, ClubMed x Manta Trust Workshop [Fiscal Year: 2025-05-01]
Term 2 2026	Callum Hudson, OIST NetCafé Online Information Session. [Fiscal Year: 2025-10-01]
Term 2 2026	Callum Hudson, Impacts of Marine Climate Change and Ocean Acidification., Kanagawa Prefectural Odawara Senior High School [Fiscal Year: 2025-10-01]
Term 2 2026	Yijin Lee, OIST–Kyushu University Teaching Training Program [Fiscal Year: 2025-10-01]
Term 1 2025	Rikako Ozaki, Kubasaki High School Presentation [Fiscal Year: 2025-05-01]
Term 1 2025	Shannon Kjeldsen, Mentor for OIST-Keio International Research Summer Camp 2025 [Fiscal Year: 2025-09-02]
Term 1 2025	Rikako Ozaki, OIST SEED Program – Koyoo SSH [Fiscal Year: 2025-07-01]
Term 1 2025	Rikako Ozaki, Yaeyama Dive Association Marine Leisure Benkyoukai. [Fiscal Year: 2026-01-01]
Term 1 2025	Yijin Lee, OIST NetCafé Online Information Session. [Fiscal Year: 2025-07-23]
Term 1 2025	Rikako Ozaki, OIST SEED Program – Kadokawa Dwango High School [Fiscal Year: 2025-08-01]
Term 1 2025	Rikako Ozaki, . The Secret Lives of Manta Rays. OIST x Onna Children’s School of Science. [Fiscal Year: 2025-08-01]
Term 3 2025	Chengze Li, OIST science Challenge 2026, OIST [Fiscal Year: 2026-03-11]
Term 3 2025	Johanna Johansson, OIST Science Challenge hands-on activity, OIST [Fiscal Year: 2026-03-11]

Term 3 2025	Roger Huerlimann, Involvement in in the OIST Science Challenge through a 1-hour presentation together with Justin Foster on how to prepare for a 3-minute thesis talk., OIST [Fiscal Year: 2026-03-11]
Term 2 2025	Alexandru Mihai, Hackathon 1 at GloBIAS Bioimage Analysis Conference 2025 [Fiscal Year: 2025-10-01]
Term 2 2025	Callum Hudson, OIST SEED Kyushu University - Student Presentation Feedback Session [Fiscal Year: 2025-12-01]
Term 2 2025	Callum Hudson, Nihon TV: Waratte Koraete! (笑ってこらえて!) Student research showcase [Fiscal Year: 2024-09-01]
Term 2 2025	Callum Hudson, Using Natural Analogues to Investigate the Responses of Sea Urchins to Climate Change, Musashi Gakuen RED programme [Fiscal Year: 2025-02-01]
Term 2 2025	Rikako Ozaki, OIST SEED Program – Kanagawa Hakuyo SSH [Fiscal Year: 2025-10-01]
Term 2 2025	Callum Hudson, Sustainable Development Goals and Marine Climate Change, SHIMA Program, OIST [Fiscal Year: 2024-06-01]
Term 2 2025	Callum Hudson, Marine Climate Change and Ocean Acidification, SHIMA Program, OIST [Fiscal Year: 2024-08-01]
Term 2 2025	Taewoo Ryu, “Everything About Nemo Research! A Visit to the OIST Marine Station” [Fiscal Year: 2025-07-13]
Term 2 2025	Yijin Lee, Coral Future Fes, Invited Speaker [Fiscal Year: 2026-03-22]
Term 2 2025	Shannon Kjeldsen, Meeting with Mitsubishi to talk about the use of EbiSeq in an aquaculture setting [Fiscal Year: 2025-10-01]
Term 2 2025	Shannon Kjeldsen, Meeting with Panasonic to talk about the use of EbiSeq in an aquaculture setting in relation to their Nature Positive initiative [Fiscal Year: 2025-10-01]
Term 2 2025	Roger Huerlimann, Gave a career talk to a group of 30 students from the Haebaru High School. [Fiscal Year: 2025-11-01]
Term 2 2025	Joseph Proietti, • Mentored two students from Keio University internship program at OIST, OIST [Fiscal Year: 2025-10-01]
Term 2 2025	Roger Huerlimann, Carried out a campus tour for the Workplace Experience Program for Kin Junior High School students. [Fiscal Year: 2025-11-01]