ASHLEY M. DUNGAN, PH.D.

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EDUCATION

Doctor of Philosophy in Biosciences, Graduation December 2020
University of Melbourne (UoM), School of Biosciences, Melbourne, VIC, Australia
Thesis: "Feasibility of bacterial probiotics for mitigating coral bleaching"
Advisors: Prof's. Madeleine van Oppen and Linda Blackall

Masters of Science in Marine Biology - Final GPA: 3.97, Graduation November 2015
Nova Southeastern University, Oceanographic Center, Dania Beach, FL, USA
Thesis: "Species specific microcalcification for reef building Caribbean corals in ocean acidification conditions"
Advisors: Dr's. Nicole Fogarty, Pat Blackwelder, and Justin Campbell

Bachelor of Science in Biology, Minor in Chemistry – Final GPA: 3.31, Graduation May 2011
State University of New York, College at Brockport, Brockport, NY, USA
Thesis: "Identification of the microbial population found in water sources in and around San Salvador Island, Bahamas"

RESEARCH EXPERIENCE

Research Fellow Marine Symbiosis Laboratory, The University of Melbourne, Melbourne, VIC, Australia
April 2021 – present (1FTE)

- Use advanced microbiology strategies to purify bacteria from coral samples and conduct metagenomic sequencing
- Apply for internal and external research grants to supplement research activities
- Supervise Master's and PhD students including wet laboratory training, editing proposals and manuscripts, and marking

Research Assistant and Laboratory Manager Marine Symbiosis Laboratory, University of Melbourne, Melbourne, VIC, Australia
March 2017 – September 2020 (0.2 FTE), September 2020 – March 2021 (1 FTE)

- Develop experimental methodologies for the manipulation of prokaryotic symbionts to enhance thermal tolerance in corals
- Source and order consumables, reagents, and equipment for the laboratory
- Train undergraduate and Masters students in basic research skills including experimental design, wet laboratory procedures and data analysis

Staff Chemist Ocean Acidification Program, Mote Marine Laboratory, Summerland Key, FL, USA
March 2015 – February 2017 (1 FTE)

- Design and conduct innovative climate change research on coral reef ecosystems
- Assist engineering and building of NSF funded experimental raceway units for studies on ocean acidification and climate change
- Manage laboratory including ordering supplies and maintaining marine aquaria
- Train undergraduate interns in advanced laboratory techniques
- Prepare grant documents and manuscripts of research for publication

Research Assistant Evolutionary Ecology Laboratory, Nova Southeastern University, Dania Beach, FL
September 2013 – March 2015 (0.3 FTE)

- Trained in electron microscopy and histology techniques
- Ran larval ecology experiments with multiple species of scleractinian corals and sea urchins
- Assisted on large scale paternity experiment as a scientific diver
- Monitored seasonal spawning of branching coral species *in situ*

TEACHING EXPERIENCE

Demonstrator University of Melbourne, Melbourne, VIC, Australia
March 2017 – May 2020 (0.1 FTE)

- Demonstrator for: Earth's Microbiomes (2nd year BSc), Microscopy for Biological Sciences (MSc), Biometry (3rd year BSc, MSc), Thinking Scientifically (2nd year BSc), Experimental Marine Biology (Field subject, 3rd year BSc), Animal Structure and Function (2nd year BSc), and Introductory Biology II (1st year BSc).
- Responsible for supporting instruction by assisting students with practical skills
- Assist in recording attendance and assessment tasks

Adjunct Professor Florida Keys Community College, Key West, FL
January 2016 – December 2016 (0.2 FTE)

- Instruct Introduction to Marine Biology course
- Develop and integrate curriculum and mentor/advise students
- Devise weekly lessons to cover designated material and current issues in marine science
- Maintain a thorough knowledge of instructional standards, practices, and methodologies.

Lab Assistant Nova Southeastern University – Main Campus, Davie, FL
August 2012 – May 2014 (0.2 FTE)

- Covered courses in General Chemistry (1st year BSc), General Biology (1st year BSc), and Microbiology (3rd year BSc)
- Instructed 20-24 students on proper laboratory procedures while reinforcing concepts learned in lecture
- Completed entire set-ups of laboratory equipment including the preparation and safe storage of hazardous chemicals

AWARDS AND FELLOWSHIPS

Melbourne Research Scholarship (UoM) 2017-2020 - 105,000 AUD
Drummond Travel Grant (UoM) 2019 - 2,000 AUD
MacBain Research Scholarship in Biology (UoM) 2018 - 1,005 AUD
Margaret Catto Scholarship (UoM) 2018 - 523 AUD
Ethel McLennan Award (UoM) 2018 - 900 AUD
Native Australian Animal Trust (UoM) 2018 - 2,500 AUD
Science Abroad Travelling Scholarship (UoM) 2018 - 1,500 AUD
BioSciences Research Higher Degree Travel Grant (UoM) 2018 - 2,000 AUD
Long Talk winner, BioSciences Postgraduate Symposium (UoM) 2018 - 100 AUD
Mote's "Protect Our Reefs" Grants (Mote) 2014, 2016, and 2017 - 10,000 USD each
Lerner-Gray Memorial Fund for Marine Research (NSU) 2015 – 1000 USD
Association of the Marine Laboratories of the Caribbean Travel Grant (NSU) 2015 – 1000 USD
Southern Association of Marine Laboratories Travel Grant (NSU) 2015 – 1000 USD

ACTIVITIES AND POSITIONS OF SERVICE

Member, International Society for Microbial Ecology Early Career Scientist Committee, July 2021-present
Co-Chair, BioSciences Early Career Academic committee, March 2021-present
Member, UoM People and Culture committee, January 2021-present
Chair, Gordon Research Symposium on Marine Molecular Ecology, 2019-present
Chair, International Symbiosis Society Student Committee, 2018-present
Volunteer, Seeing Eye Dogs, Vision Australia, 2018-present
Member, International Society for Reef Studies Student Committee, 2016-2018
Vice President, UoM Biosciences Postgraduate Society, 2017-19
Student Representative, UoM Advancement Committee, 2018-19
Student Representative, UoM Research Training Committee, 2017-18

PUBLICATIONS

Muller EM, **Dungan AM**, Million WC, Eaton KR, Petrik C, Bartels E, Hall ER, Kenkel, CD (2021) Heritable variation and lack of tradeoffs suggest adaptive capacity in *Acropora cervicornis* despite negative synergism under climate change scenarios. (Submitted to *Proc R Soc Lond [Biol]*)

Dungan AM, Maire J, Peres-Gonzalez A., Blackall LL, van Oppen MJH (2021) Lack of evidence for the oxidative stress theory of bleaching in the sea anemone, *Exaiptasia diaphana*. (Submitted to *Coral Reefs*)

Dungan AM, Hartman LM, Blackall LL, van Oppen MJH (2021) Assessment of a free radical scavenging bacterial consortium aimed at improving thermal tolerance in a coral model (Submitted to *J. Appl. Microbiol.*)

Dungan AM, Bulach D, Lin H, van Oppen MJH, Blackall LL (2021) Development of a free radical scavenging bacterial consortium to mitigate oxidative stress in cnidarians. *Microb Biotechnol*, 0, 1-16. http://doi.org/10.1111/1751-7915.13877

Dungan AM, van Oppen MJH, Blackall LL (2021) Short-term exposure to sterile seawater reduces bacterial community diversity in the sea anemone, *Exaiptasia diaphana*. *Front. Mar. Sci.*, 7. http://doi.org/10.3389/fmars.2020.599314

Ng EL, Silk YL, **Dungan AM**, Colwell J, Ede S, Lwanga EH, Meng K, Geissen V, Blackall LL, Chen D (2020) Microplastic pollution alters forest soil microbiome. *J. Hazard. Mater.,* http://doi.org/10.1016/j.jhazmat.2020.124606

Blackall LL, **Dungan AM**, Hartman LM, van Oppen MJH (2020) Probiotics for corals. *Microbiol. Aust.*, 41(2), 100-104.

Dungan AM, Hartman LM, Tortorelli G, Belderok R, Lamb AM, Pisan L, McFadden GI, Blackall LL, van Oppen MJH (2020) *Exaiptasia diaphana* from the Great Barrier Reef: a valuable resource for coral symbiosis research. *Symbiosis*, 80, 195–206.

Pelletier M, Haynes JM, **Dungan AM**, Kroeckel J (2014). Identification of the Microbial Population found in Water Sources in and around San Salvador Island, Bahamas. *The International Journal of Bahamian Studies*, 20(1), 27-37.

PRESENTATIONS

Australian Society for Microbiology Happy Hour, Zoom - invited 2021
"Identifying bacteria to mitigate the effects of climate change in cnidarians." - Talk
Dungan AM, Bulach D, Blackall LL, van Oppen MJH

Gordon Research Conference on Marine Molecular Ecology, Hong Kong, China - applied 2019
"The application of a bacterial probiotic to mitigate coral bleaching" - Poster
Dungan AM, Hartman LM, Blackall LL, van Oppen MJH

Gordon Research Symposium on Marine Molecular Ecology, Hong Kong, China - applied 2019
"Identifying probiotic bacteria to prevent bleaching" - Poster
Dungan AM, Philip G, Bulach D, van Oppen MJH, Blackall LL

Assisted Evolution Workshop, Townsville, QLD, Australia - invited 2019
"Developing a bacteria probiotic to mitigate bleaching in the coral model *Exaiptasia pallida*" - Talk
Dungan AM, Bulach D, van Oppen MJH, Blackall LL

School of BioSciences Postgraduate Symposium, Melbourne, VIC Australia - applied 2018
"*Exaiptasia pallida* as a model to explore probiotics for climate resilience in corals" - Talk
Dungan AM, van Oppen MJH, Blackall LL

Microbial Ecology - Environmental Microbiology Meeting, Melbourne, VIC, Australia - invited 2018
"The anemone *Exaiptasia pallida* as a model to explore probiotics for climate resilience in corals" - Talk
Dungan AM, Blackall LL, van Oppen MJH

International Symbiosis Society Congress, Corvallis, OR, USA - applied 2018
"*Exaiptasia pallida* as a model to explore probiotics for climate resilience in corals" - Talk
Dungan AM, Blackall LL, van Oppen MJH

7th Conference on Beneficial Microbes, Madison, WI, USA - applied 2018
"Identifying probiotic bacteria to mitigate thermal stress in corals" – Poster
Dungan AM, van Oppen MJH, Blackall LL

International Coral Reef Symposium, Honolulu, HI, USA - applied 2016
"Climate change studies can direct restoration techniques to enhance coral reef resilience" – Poster
Dungan AM, Hall ER

Mote Ocean Acidification Workshop, Summerland Key, FL, USA - invited 2015
"Which reef building Caribbean species will "win" in the future oceans" - Talk
Dungan AM, Hall ER, Blackwelder P, Fogarty N

Association of Marine Laboratories of the Caribbean Meeting, Willemstad, Curaçao - applied 2015
"Lesion recovery of Scleractinian corals under low pH conditions: Implications for restoration efforts" – Talk
Dungan AM, Hall ER

Aquatic Sciences Meeting, Granada, Spain - applied 2015
"Effects of ocean acidification on growth and microcalcification during coral life history stages in reef building Caribbean species" – Talk
Dungan AM, Blackwelder P, Fogarty N

Broward College Invited Lecturer, Davie, FL, USA - invited 2014
"Life Stage Calcification Responses for the coral *Porites astreoides* in low pH Environments" – Talk
Dungan AM, Blackwelder P, Fogarty N

Benthic Ecology Meeting, Jacksonville, FL, USA - applied 2014
"Ultrastructure and calcification in the coral *Porites astreoides* under ambient and low pH conditions" - Poster
Dungan AM, Blackwelder P, Fogarty N