

Postdoctoral Research Scientist
Carnegie Institution for Science
Department of Global Ecology
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EDUCATION

March 2012 – March 2016 PhD: *Acclimatisation and Adaptive Capacity of Sea Urchins in a Changing Ocean*, Advisor: Prof Maria Byrne, **University of Sydney**
2015 Marine Litter, **Open University of the Netherlands**
2007 – 2010 Bachelor of Science (Advanced) (First Class Honours)
 Majors: Biology, Anatomy & Histology, **University of Sydney**

EMPLOYMENT HISTORY

July 2016 – present Honorary Associate, **The University of Sydney**
April 2016 – Oct 2016 Endeavour Postdoctoral Research Fellowship, **Stazione Zoologica Anton Dohrn**
Jan 2010 – Dec 2015 Tutor, Laboratory Demonstrator and Exam Invigilator, **University of Sydney** (Junior courses: Molecular Biology; Intermediate courses: Invertebrate Biology, Medical Sciences, Principles of Histology, Comparative Primate Anatomy; Senior courses: Forensic Osteology, Visceral Anatomy, Musculoskeletal Anatomy; Postgraduate courses: First and second year medicine, Anatomy for Engineers; Other: High school Gifted and Talented Program)
Aug 2015 Lecturer for the senior course: Cells and Development, **University of Sydney**
June 2015 Tutor for the Coral Reef Science and Management Masters course, One Tree Island, **University of Sydney**
July 2011 – July 2013 Forensic Osteologist, **Shellshear Museum**
Dec 2010 – Dec 2014 Research Assistant, Byrne Lab, **University of Sydney**

GRANTS

- Doctoral Fellowship (Sydney Institute of Marine Science, 2012 - 2015)
- 2013 Research Grant Award (Golden Key Society, 2013)
- Research Support Grant (Golden Key Society, 2012)
- Honours and Masters Research Support Grant (Marine Adaptation Network, 2010)
- NSW Honours Student Award (AMSA, 2010)

AWARDS

- 2016 Endeavour Postdoctoral Research Fellowship (Merit-based scholarships that support Australian citizens to undertake research and professional development overseas, **Australian Government**)
- 2015 John Hunter Research Prize (Distinction in postgraduate research, **University of Sydney**)

- 2015 Tony Roach Prize in Marine Environmental Science (Best paper by a young scientist on any aspect of marine or estuarine environmental science, **Sydney Institute of Marine Science and NSW Government Office of Environment and Heritage**, 2015)
- Best Student Oral Presentation at the 8th New Zealand Acidification Workshop (Ocean Acidification Research Theme, **University of Otago**, 2015)
- 8th New Zealand Acidification Workshop Travel Award (Ocean Acidification Research Theme, **University of Otago**, 2015)
- Ron Kenny Premier Conference Award for Best Student Oral Presentation (**Australian Marine Sciences Association**, 2014)
- Marine Molecular Ecology Registration Award (**Hong Kong University of Science and Technology**, 2013)
- Larval invertebrate diversity, form, and function course support award (**Smithsonian Tropical Research Institute**, 2013)
- Student Travel Award Recipient (**SICB Multiple Stressors Symposium**, 2013)
- Advanced Microscopy Facility Micrograph of the Year Prize Winner (**Bosch Institute**, 2012)
- Best Student Presentation (**10th International Larval Biology Symposium**, Berkeley, 2012)
- Best Student Presentation (**14th International Echinoderm Conference**, Brussels, 2012)
- Merit Award (**University of Sydney**, 2012 - 2014)
- Australian Postgraduate Award (**University of Sydney**, 2012 - 2014)
- Honours Scholarship (**University of Sydney**, 2010)
- Dean's List of Excellence in Academic Performance (**University of Sydney**, 2009)

TRAINING AND CERTIFICATES

- Advanced Excel Course (**University of Sydney**, 2015)
- Design & Analysis of Ecological Experiments, Statistics Course (**University of Sydney**, 2015)
- Science, Networking & Career Skills, Moreton Bay Research Station (**Australian Marine Science Association**, 2014)
- Primer v6 Statistics Workshop (**La Trobe University**, Albury-Wodonga, 2013)
- Larval Proteomics (**University of Hong Kong**, 2013)
- Larval invertebrate diversity, form, & function course (**Smithsonian Tropical Research Institute**, 2013)
- Open Water Diver certificate, SSI (**Snorkel Safari Beverly Hills**, 2013)
- Macrophysiology Workshop (**Society of Integrative & Comparative Biology**, 2013)
- Marine Evolution under Climate Change, CeMEB Advanced Course (**University of Gothenburg**, 2012)
- Confocal Microscopy (**University of Sydney**, 2012)
- Faculty of Science Tutor & Demonstrator Development Program (**University of Sydney**, 2010)
- Presentation and Networking Course (**Sydney Talent**, 2010)

PROFESSIONAL ACTIVITIES

- Reviewer, **Proceedings of the Royal Society B, Environmental Science and Technology, National Science Centre in Poland, Marine Biology, Evolutionary Applications, Global Change Biology, Coral Reefs** (Ongoing)
- Ecotourism for students and adults, **Platypus Tours** (May - October, 2016)
- Fantasea Harbour Hike fundraiser, **Sydney Institute of Marine Science** (August, 2015)
- Advanced project coordinator for undergraduate students, **University of Sydney** (May - June 2015)
- Bosch Young Investigator's Committee, **School of Medical Sciences** (June 2012 - March 2015)
- Research Assistant, Training the Northern quoll to avoid consumption of cane toads, **University of Sydney** (February, 2009)

- Research Assistant, Seasonal effects on reproductive behaviour in the Java Sparrow, **Taronga Zoo** (March - December 2008)

PEER REVIEWED PUBLICATIONS

- **Foo, S. A.**, and Byrne, M. (2017) Marine gametes in a changing ocean: Impacts of climate change stressors on fecundity and the egg. *Marine Environmental Research* doi: 10.1016/j.marenvres.2017.02.004.
- Allen, J. D., Schrage, K. R., **Foo, S. A.**, Watson, S. A., Byrne, M. (2017) The effects of salinity and pH on fertilisation, early development and hatching in the Crown-of-Thorns Seastar. *Diversity* 9, 13.
- Sparks, K. M., **Foo, S. A.**, Uthicke, S., Byrne, M., Lamare, M. (2016) Paternal identity influences response of *Acanthaster planci* embryos to ocean acidification and warming. *Coral Reefs* 36, 325–338.
- Karelitz, S., Uthicke, S., **Foo, S. A.**, Barker, M., Byrne, M., Pecorino, D., Lamare, M. (2016) Ocean acidification has little effect on developmental thermal windows of echinoderms. *Global Change Biology* 23, 657–672.
- **Foo, S. A.**, Dworjanyn, S. A., Poore, A. G. B., Harianto, J., Byrne, M. (2016) Adaptive capacity of the sea urchin *Heliocidaris erythrogramma* to ocean change stressors: transgenerational responses from gamete performance to the juvenile. *Marine Environmental Progress Series* 556, 161–172.
- **Foo, S. A.**, and M. Byrne, Acclimatization and Adaptive Capacity of Marine Species in a Changing Ocean. In: Barbara E. Curry, editor, *Advances in Marine Biology, Vol. 74*, Oxford: Academic Press, 2016, pp. 69–116.
- **Foo, S. A.**, Sparks, K., Uthicke, S., Karelitz, S., Barker, M., Byrne, M., Lamare, M. (2016) Contributions of genetic and environmental variance in early development of the Antarctic sea urchin *Sterechinus neumayeri* in response to increased ocean temperature and acidification. *Marine Biology* 163, doi: 10.1007/s00227-016-2903-1.
- **Foo, S. A.**, Dworjanyn S., Khatkar, M., Poore A. & Byrne M. (2014) Increased temperature, but not acidification, enhances fertilization success and development in a tropical urchin: potential for adaptation to a tropicalized eastern Australia. *Evolutionary Applications* 7: 1226–1237.
- Uthicke S., Soars N., **Foo, S. A.**, & Byrne M. (2013) Effects of elevated $p\text{CO}_2$ and the effect of parent acclimation on development in the tropical Pacific sea urchin *Echinometra mathaei*. *Marine Biology* 160: 1913–1926.
- Byrne M., **Foo, S. A.**, Soars N., Wolfe K., Nguyen H.D., Hardy N. and Dworjanyn S. (2013) Ocean warming will mitigate the effects of acidification on calcifying sea urchin larvae (*Heliocidaris tuberculata*) from the Australian global warming hot spot. *Journal of Experimental Marine Biology and Ecology* 448: 250–257.
- Byrne M., Gonzalez-Bernat M., Doo S., **Foo, S. A.**, Soars N. & Lamare M. (2013) Effects of ocean warming and ocean acidification on embryos and non-calcifying larvae of the invasive sea star *Patiriella regularis*. *Marine Ecology Progress Series* 473: 235–246.
- **Foo, S. A.**, Dworjanyn S., Poore A. & Byrne M. (2012) Adaptive capacity of the habitat modifying sea urchin *Centrostephanus rodgersii* to ocean warming and ocean acidification: Performance of early embryos. *PLoS ONE* 7(8): e42497.
- Doo S., Dworjanyn S., **Foo, S. A.**, Soars N. & Byrne M. (2012) Impacts of ocean acidification on development of the meroplanktonic larval stage of the sea urchin *Centrostephanus rodgersii*. *ICES Journal of Marine Science*. 69, 460–464.

OTHER PUBLICATIONS

1. **Foo, S. A.** (2016) Climate Change and Sea pH – The Vents of Ischia. Online article for ecotourism company Platypus Tours, <http://en.platypustour.it/blog/2016/10/22/climate-change-and-sea-ph-the-vents-of-ischia-studied-by-shawna-foo/>.
2. **Foo, S. A.** (2015) PhD Thesis, The University of Sydney.
3. **Foo, S. A.** (2014) Ron Kenny Award for Best Oral Presentation. Article in the AMSA Marine Science Bulletin No. 194, Issue 2, page 25.
4. **Foo, S. A.**, and Byrne M. (2013) Effects of ocean warming and ocean acidification on the sea urchin *Heliocidaris tuberculata*. Integrative and Comparative Biology 53 (1) E71.
5. **Foo, S. A.** (2011) Impacts of climate change stressors on early development of the sea urchin *Centrostephanus rodgersii*. Policy and management information sheet published in the Marine Adaptation Bulletin, Volume 3, Issue 2, page 5.
6. **Foo, S. A.** (2010) Abstract published in the Australian Marine Science Bulletin 183, Issue 2, page 27.

PROFESSIONAL ASSOCIATIONS

- Australian Marine Sciences Association
- Sydney Institute of Marine Science
- Marine Adaptation Network
- Bosch Institute Young Investigators
- Society for Integrative and Comparative Biology
- Golden Key International Honour Society

REFEREES

Professor Maria Byrne (PhD supervisor) Developmental and Marine Biology, University of Sydney
Office: +61 2 9351 5166 **Email:** mbyrne@anatomy.usyd.edu.au

Lecturer Dr Richard Ward (Employer) Anatomy & Histology, School of Medical Sciences,
University of Sydney **Office:** 9351 4320 **Email:** rward@anatomy.usyd.edu.au

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University of New South Wales **Office:** +61 2 9385 2154 **Email:** a.poore@unsw.edu.au