Environmental Science Centre, Qatar University (QU), Doha, Qatar - PO Box 2713 | +974 3045-3870 (GMT +3:00) <u>giraldesbw.com</u> | <u>LinkedIn</u> | <u>brunoweltergiraldes@gmail.com</u>

Research Assistant Professor

PERSONAL PROFILE

A dynamic Lecturer and Researcher with over 8 years of experience post PhD, leading local, national and international researches, education and outreach activities, as well as advising undergraduate and postgraduate levels. Published over a dozen peer-reviewed scientific articles, co/authored 4 books, in addition to several patents and technical protocols. Proven expertise in attracting government grants and private funding for a range of research projects. Managed directly or indirectly to secure and further administer nearly \$7 million dollars in funds during my short career span for high quality scientific researches of local, regional, and global relevance. Proven success leveraging truly international experiences to navigate complex cross-cultural environments and build highly collaborative teams.

Areas of expertise include, but are not limited to:

- Taxonomy & Systematic
- Ecology
- Oceanography
- Marine Biology
- Ocean Instrumentation
- Population & Community DynamicsCoral reefs, Mangroves

Quantitative Research

- R&D Applied science
- TRL Improvement
- Technology Development
- Biomimicry
- Ecosystem Restoration
- Environmental Management
- Environmental Policy
- Scientific Communication

- Animal Behavior
- Underwater Monitoring
- Benthic Invertebrates
- Biogeography/
- Project Management
- Fisheries
- Ecosystem Processes
- Scientific Diving
- Underwater video and photo

EDUCATION

2012, Ph.D. in Biological Oceanography

Oceanographic Museum, Universidade Federal de Pernambuco – UFPE **Thesis Title:** *Subtidal decapods at coastal reefs, northeastern Brazil - an approach using nocturnal Underwater Visual Census* supervised by Prof. Petronio Alves Coelho.

2007, M.Sc. in Biological Oceanography

Oceanographic Museum, Universidade Federal de Pernambuco – UFPE **Thesis Title:** *Subtidal crustaceans decapod assemblage from reefs of Porto de Galinhas' beach* supervised by Prof. Petrônio Alves Coelho.

2003, B.A. and Teaching in Biological Sciences

Entomology Laboratory, Universidade Estadual de Londrina - UEL

Thesis Title: *Biology and susceptibility of Ascia monuste orseis to NIM at different concentrations in laboratory conditions.*

PROFESSIONAL APPOINTMENTS

Jan/2018 -Qatar University (QU) - Environmental Science Center - Doha, QatarPresentResearch Assistant Professor

After delivering exceptional results in my previous role, I was invited to lead several highprofile projects within the Environmental Science Department building important local and

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international partnerships with other researchers and professors across the globe. Although most projects were grounded in oceanography, marine biology, ecology and taxonomy of benthic invertebrates, I started driving initiatives to monetize projects by exploring new fields in marine drugs, phylogeography, marine ecosystem's restorations, subsea constructions and advisory on environmental policies.

- Secured approval and managed three projects as Lead Principal Investigator (LPI) and collaborated on another six by leading specific work packages as a Principal Investigator (PI).
- Authored 9 peer-reviewed scientific articles with another six currently being reviewed for publication.
- Built important local and international collaboration partnerships with professors and researchers across highly reputable institutions.
- Conducted a very successful collaborative research on restoration of coral reefs which led to a patent.
- Signed a long-term contract of external grants for the trading of new technologies, generating ongoing royalties for the university.

Sep/2014 – Qatar University (QU) - Environmental Science Center - Doha, Qatar

Dec/2017 Post-Doctor Research Fellow (Marine Biology)

Resulting from a very strict and thorough selection process, QU offered me an opportunity as a Fellow Researcher, where I provided direct expertise in support of major research projects related to marine biology, biogeography, ecology and taxonomy. I also delved into the impact of fishing activity over the historical oyster beds in the offshore zone of the country; and the ecological study of the hyperarid mangrove ecosystem of Qatar. Participated in several other projects covering the taxonomy and ecological patterns of benthic invertebrates.

- Co-authored 10 peer-reviewed scientific article publications, being first author for most.
- Directly supported three high profile projects related to fishing impact and mangroves ecosystem off the coast and offshore of Qatar.
- Discovered through a high-quality research a new species of crab, which led to a new patent of an environmentally friend fishery apparatus.
- Established the very first nationwide Marine Collection for the State of Qatar.
- Supervised and mentored theses for undergraduate students and contributed to instructional and outreach activities.

Jun/2012 –Universidade Federal de Santa Catarina (UFSC) - Santa Catarina, BrazilJul/2014Post-Doctor Associate Researcher

Upon completing my PhD studies, I was immediately asked to lead a work package under a multidisciplinary project for underwater monitoring and classification of decapods (maare.ufsc.br). Additionally, provided research expertise as a SME to an ongoing study on Demersal Plankton.

- Led a multidisciplinary sub-project responsible for biogeography, taxonomy and ecology of decapods.
- Authored two peer-reviewed scientific articles as a first author and published two technical protocols.
- Co-authored entire chapters for three books.
- Steered end-to-end preparation of an application for a patent on bongo-net frame fixed in DPV (Dive Propulsion Vehicles) for demersal plankton survey.
- Conducted scientific research that led to the discovery of a new species of shrimp.

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PUBLICATIONS

Books	Giraldes, B.W . & Freire, A.S. (2017). Crustáceos (<i>Crustacean</i>). – A Biodiversidade marinha das ilhas da Rebio Arvoredo e entorno. In. Segal,B et al MAArE : Monitoramento ambiental da Reserva Biológica Marinha do Arvoredo e entorno.222-229p. ISBN: 978-85-64093-48-5.
	Giraldes, B.W. & Freire, A.S. (2016). Crustáceos (<i>Crustacean</i>). (52-61pp). <i>In</i> . Lindner, A. <i>Vida marinha de Santa Catarina</i> (Vol.2). (<i>Marine Life at Santa Catarina</i>). Editora UFSC. ISBN: 978-85.328.0600-0.
	Giraldes, B.W. (2014) Sessão Invertebrados (Invertebrate Section) (36pp). In Pereira, H.C.P, Feitosa J.L.L & Chaves, L.C.T. Guia de Biodiversidade Marinha da APA costa dos Corais. (Marine Biodiversity guide from MPA "Coral coast". Technical books 204pp. ISBN: 978- 85-61368-44-9.
	Giraldes, B.W. & Freire, A.S. (2014). Crustáceos (Crustacean). (52-61pp). In. Lindner, A. Vida marinha de Santa Catarina. (Marine Life at Santa Catarina). (Vol.1). Editora UFSC, 128p. ISBN: 978-85.328.0600-0.
Articles	Liu, L., Aljathelah, N. M., Hassan, H., Giraldes, B. W., Leitão, A., & Bayen, S. (2021). Targeted and suspect screening of contaminants in coastal water and sediment samples in Qatar. Science of The Total Environment, 145043.
	Al-Khayat, J.A. & Giraldes B.W. (2020). Burrowing crabs in arid mangrove forests on the southwestern Arabian Gulf: Ecological and biogeographical considerations. Regional Studies in Marine Science, (39) 101416.
	Giraldes B.W, Goodwin C, Al-Fardi N.AA, Engmann A, Leitão A, Ahmed AA, et al. (2020). Two new sponge species (Demospongiae: Chalinidae and Suberitidae) isolated from hyperarid mangroves of Qatar with notes on their potential antibacterial bioactivity. PLoS ONE 15(5): e0232205. https://doi.org/10.1371/journal. pone.0232205
	Bean, T.P., Khatir, Z., Lyons, B.P., van Aerle, R., Minardi, D., Bignell, J.P., Smyth, D., Giraldes, B.W. & Leitão, A., (2020). De novo transcriptome assembly of the Qatari pearl oyster <i>Pinctada imbricata radiata</i> . Marine Genomics, p.100734.
	Giraldes, B.W., Leitão, A. & Smyth D. (2019) The benthic sea-silk-thread displacement of a sessile bivalve – the curious behavior of the pearl oyster <i>Pinctada imbricata radiata</i> (Leach, 1814) in the Arabian-Persian Gulf. <i>PLoS ONE</i> 14 (5): e0215865. https://doi.org/10.1371/journal. pone.0215865
	Giraldes, B. W. (2019). The first record of the Indo-Pacific benthic ctenophore <i>Coeloplana</i> (<i>Benthoplana</i>) meteoris (Ctenophora: Coeloplanidae) in the Arabian-Persian Gulf. Journal of Asia-Pacific Biodiversity, https://doi.org/10.1016/j.japb.2019.03.012
	Giraldes, B.W., Chatting, M. & Smyth D. (2019). The fishing behavior by <i>Metopograpsus messor</i> (Decapoda: Grapsidae) and the use of pneumatophore-borne vibrations for preylocalizing in an arid mangrove setting. <i>Journal of the Marine Biological Association of the United Kingdom</i> , 1-9 https://doi.org/10.1017/ S0025315419000146.
	Giraldes, B.W., Macedo, T., Brandão, M.C., Baeza, J.A. & Freire, A.S. (2018). <i>Lysmata arvoredensis</i> nov. sp. a new species of shrimp from the south coast of Brazil with a key to species of <i>Lysmata</i> (Caridea: Lysmatidae) recorded in the southwestern Atlantic. <i>PEERJ</i> 6:e5561; DOI 10.7717/peerj.5561.
	Al-Maslamani, I., Smyth, D., Giraldes, B., Chatting M., Al-Mohannadi M. & Le Vay L. (2018). Decline in oyster populations in traditional fishing grounds; is habitat damage by static

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fishing gear a contributory factor in ecosystem degradation? *Journal of Sea Research* 140: 40–51.

- Giraldes, B.W., Coelho Filho, P.A., Smyth, D.M. & Coelho, P.A. (2017). The nocturnal zonation of decapods in the subtidal zone within the reef seascape—abiotic factors defining habitats. *ICES Journal of Marine Science*, doi:10.1093/icesjms/fsx055.
- Giraldes, B.W., Al-Maslamani & Smyth, D. (2017). A new species of leucosiid crab (Decapoda: Brachyura: Leucosiidae) from the Arabian Gulf. *Zootaxa*, 250(4): 389–395. http://dx.doi.org/10.11646/zootaxa.4250.4.9.
- Smyth, D.M., Al-Maslamani, I., Chatting, M & Giraldes, B.W. (2016). Benthic surveys of the historic pearl oyster beds of Qatar reveal a dramatic ecological change. *Marine Pollution Bulletin*, http://dx.doi.org/10.1016/j.marpolbul.2016.08.085.
- **Giraldes, B. W.**, Chatting, M & Smyth, D. (2016). Modern problems in marine biodiversity records illustrated by the case of the Caribbean Pelia mutica (Gibbes, 1850) confirmed in Brazil. *Marine Biodiversity records*, 9(1)1.
- Giraldes, B.W. & Smyth, D.M. (2016). Recognizing *Panulirus meripurpuratus* sp. nov. (Decapoda: Palinuridae) in Brazil Systematic and biogeographic overview of *Panulirus* species in the Atlantic Ocean. *Zootaxa* 4107 (3): 353-366.
- Giraldes, B.W., Al-Maslamani, I., Chatting, M. and Smyth, D. (2016) Basic assessment of *Portunus segnis* (Forskål, 1775) The baseline for stock management of important decapod resource in Western Arabian Gulf. *Egyptian Journal of Aquatic Research* 42: 111-119.
- Smyth, D.M., Al-Maslamani, I., Giraldes, B.W., Chatting, M., Al-Ansari, E., Le Vay, L. (2016) Anthropogenic related variations in the epibiotic biodiversity and age structure of the "Pearl Oyster" *Pinctada radiata* within the eulittoral zone of Qatar. *Regional Studies in Marine Sciences*, 5: 87-96.
- Giraldes, B.W., Silva, A. Z., Corrêa, F. M., & Smyth, D.M. (2015). Artisanal fishing of spiny lobsters with gillnets—A significant anthropic impact on tropical reef ecosystem. *Global Ecology and Conservation*, 4, 572-580.
- **Giraldes, B.W.** & Freire, A.S. (2015). Extending the southern range of four shrimps (Crustacea: Decapoda: Stenopodidae, Hippolytidae and Alpheidae) in southwestern Atlantic (27° S) and confirming the presence of Mediterranean *Stenopus spinosus* Risso, 1827 in Brazil. *Zootaxa*, 3972(3), 419.
- Giraldes, B.W., Coelho Filho, P.A. & Smyth, D.M. (2015). Decapod assemblages in subtidal and intertidal zones Importance of scuba diving as a survey technique in tropical reefs, Brazil. *Global Ecology and Conservation*, *3*, 163-175.
- Giraldes B.W., Coelho-Filho, P.A. & Coelho, P.A. (2012). Composition and spatial distribution of subtidal Decapoda on the "Reef Coast", northeastern Brazil, evaluated through a low-impact visual census technique. *Nauplius*, 20(1): 187-201.
- Giraldes B.W., Coelho-Filho, P.A., Coelho, P.A. & Anker, A. (2012). Confirmation of the presence of *Janicea antiguensis* (Chace, 1972) (Decapoda: Barbouriidae) in northeastern and eastern Brazil. *Nauplius*, 20(2): 171-178.
- Coelho, P.A., Almeida, A.O., Souza-filho, J.F., Bezerra, L.E.A. & **Giraldes, B.W**. (2006). Diversity and distribution of the marine and estuarine shrimps (Dendrobranchiata, Stenopodidea and Caridea) from North and Northeast Brazil. *Zootaxa* (Online), 1221: 41 62.

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Patents	Giraldes B.W. (Filled/assigned.2020) Raft Sampling Bench. Attorney Docket No.: 432743.10170. Assinment document 506201828.
	Giraldes, B.W. (2020) The Mushroom Forest Artificial Reef – A new designed artificial reef for ecosystem restoration and fishing resource augmentation. No US20200236911A1.
	Al-Maslamani, I, Smyth, D., Mehmet, D. & Giraldes, B.W, Chatting, M. (2020). Marine Clutch Apparatus - A new material more environmentally friendly to retrieve fishing traps (gargour). Attorney Docket No.: 432743.10073.
Technical Protocols	Giraldes, B.W. & Freire, A.S. (2014) Protocolo de Monitoramento de Crustáceos (Crustacean Monitoring Protocol). In Monitoramento Ambiental da Reserva Biológica Marinha do Arvoredo e Entorno, Projeto MAARE – UFSC (Environmental Monitoring Program at Arvoredo's Marine No-Take Zone and surroundings, Project MAARE, – UFSC).
	Giraldes, B.W., Gorri, C & Freire, A.S. (2014) <i>Protocolo de Monitoramento de Plâncton</i> <i>Demersal (Demersal Plankton monitoring Protocol). In</i> Monitoramento Ambiental da Reserva Biológica Marinha do Arvoredo e Entorno, Projeto MAARE – UFSC <i>(Environmental Monitoring Program at Arvoredo's Marine No-Take Zone and</i> <i>surroundings, Project MAARE, – UFSC).</i>

AWARDED GRANTS

2020-2025	Coral Transplantation and coral nursery farm – Developing coral reef restoration facilities in Qatar. Position: * <u>Lead</u> Principal Investigator (Lead-PI). Fund - Source: ~U\$ 1.000,000 - Qatargas. No. STC/C/NFE/4967/20/ QUEX-ESC-QG-20/21-1 Institution: Environmental Science Centre, Qatar University, Qatar.
2020 - 2021	Identifying Qatar's marine fauna speciation using nanopore sequencing. Position: * Principal Investigator (PI). Lead-PI: Dr. Fatiha Benslimane. Fund - Source: ~U\$ 10,000 – Qatar Foundation - UREP26-102-1-011. Institution: Biomedical Research Center, Qatar University, Qatar.
2018 - 2022	 The Biomimicry of the "Mushroom Forest Artificial Reef" – Experimental strategies for coral reef restoration and fish stock augmentation in Qatar. Position: *Lead Principal Investigator (Lead-PI). Fund - Source: ~U\$ 500,000 - Qatar University (QU) Internal Funding Program. Co-Funding: Smeet Precast (building company); SIKA (cement and supplements brand); Qatar Petroleum (QP) Funding Program. Institution: Environmental Science Centre, Qatar University, Qatar.
2019 – 2022	 Innovative In situ Biotechnology for Continuous Water Quality Monitoring on the Qatari Marine Environment. Position: Principal Investigator (PI). Lead-PI: Dr. Alexandra Leitão-Ben Hamadou Fund - Source: ~U\$ 1,000,000 - Qatar Foundation – NPRP11S-0115-180308. Co-Funding: TOTAL Petroleum. Institution: Environmental Science Centre, Qatar University, Qatar.

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2019 – 2021	 Tar mats of Qatar Coast: Resilience to Weathering Processes and Quantification of Environmental Hazards. Position: Principal Investigator (PI). Lead-PI: Prof. Ponnumony Vethamony Fund - Source: ~U\$ 1,000,000 - Qatar Petroleum (QP) Funding Program. Institution: Environmental Science Centre, Qatar University, Qatar.
2019 – 2022	Qatari National Genetic Habitat and Environmental Biomonitoring Position: Principal Investigator (PI). Lead-PI: Prof. Asma Al-Thani Fund - Source: ~U\$ 1,500,000 - Qatar Petroleum (QP) Funding Program. Institution: Biomedical Research Centre, Qatar University, Qatar.
2018 – 2021	Does a seasonal biogeographic barrier dividing the Arabian Gulf exist? A study based in the Taxonomy, Phylogeny and Phylogeography of decapod's biodiversity in Qatar. Position: *Lead Principal Investigator (Lead-PI). Fund - Source: ~U\$ 30,000 - ESC-QU Funds. Institution: Environmental Science Centre, Qatar University, Qatar. Outcome: 2 articles.
2018 – 2020	Integrated monitoring of chemicals and their biological effects on four sentinel species <i>Pinctada</i> <i>imbricata radiata, Brachidontes variabilis, Pirinella conica</i> and <i>Petrolisthes tuerkayi</i> within Qatari coastal waters: A step forward in marine environmental monitoring in Qatar. Position: Principal Investigator (PI). Lead-PI: Dr. Alexandra Leitão-Ben Hamadou Fund - Source: ~U\$ 20,000 - ESC-QU Funds. Institution: Environmental Science Centre, Qatar University, Qatar. Outcome: 1 Report.
2018 – 2019	The potential antibacterial effect of the Marine Sponges of the Qatar Marine Zone. Position: * <u>Lead</u> Principal Investigator (Lead-PI). Fund - Source: ~ U\$20,000 - Qatar Foundation - UREP21-141-3-032. Institution: Environmental Science Centre, Qatar University, Qatar. Outcome: 1 article.
2018 – 2020	A study of Qatar Island. Position: Principal Investigator (PI). Lead-PI: Prof. Ekhlas M.M. Abdel Bari Fund - Source: ~U\$ 170,000 - ESC-QU Funds. "nd". Institution: Environmental Science Centre, Qatar University, Qatar. Outcome: 1 article
2016 – 2020	The pearl oysters: From national icon to guardian of Qatar marine environment. Position: Principal Investigator (PI). Lead-PI: Dr. Alexandra Leitão-Ben Hamadou Fund - Source: ~U\$ 800,000 - Qatar Foundation – NPRP 9-141-3-032. Institution: Environmental Science Centre, Qatar University, Qatar. Outcome: 4 articles, 1 patent.
2015 – 2018	Ecological processes underlying ecosystem function in arid mangroves. Position: Associate Researcher. Lead-PI: Dr. Ibrahim Al-Maslamani Fund - Source: ~U\$ 900,000 - Qatar Foundation - NPRP 7 - 1302 - 1 - 242. Institution: Environmental Science Centre, Qatar University, Qatar.

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Outcome: 1 article.

2014 - 2017The impact of static fishing gear over the offshore oyster beds in Qatar. **Position:** Associate Researcher. Lead-PI: Dr. Lewis Le Vay Fund - Source: ~U\$ 900,000 - Oatar Foundation - NPRP 6 - 1680 - 4 - 027. Institution: Environmental Science Centre, Qatar University, Qatar. **Outcome:** 1 article. 2012 - 2014MAArE - Monitoramento Ambiental da Reserva Biológica Marinha do Arvoredo e Entorno -(http://www.maare.ufsc.br/o-projeto/). Position: Post-Doctor Associate Researcher. Lead-PI: Dr. Andrea Santarosa Freire Fund - Source: ~U\$350,000 – Petrobras, National Oil Company in Brazil. Institution: Laboratório de crustáceos e Plânctons, Universidade Federal de Santa Catarina (UFSC) Brazil. Outcome: 2 Field Protocol; 1 Patent; 2 book chapters; and 2 articles. 2005 - 2012Decapods from Coastal Reefs at Pernambuco, Brazil. Position: MSc and PhD Student (Post-Gradation Projects). Advisor: Prof. Petrônio Alves Coelho Fund - Source: ~U\$30,000 - Capes and Facepe. Co-Funding: Mormaii, Zoae Diving Centre and Ecotourism; Acqua Viva (In Kind contribution) Institution: Laboratório de Carcinologia, Museu Oceanográfico, Universidade Federal de Pernambuco (UFPE) Brazil.

Outcomes: MSc and PhD Thesis; 7 articles.

ADDITIONAL ACTIVITIES

Scuba Diving Certification	 Scuba Diving Instructor, CMAS/PADI Scientific Diver and Distinctive Instructor - Underwater Visual Census Techniques, PADI
	 Emergency First Responder (EFR) Instructor, ILCOR/PADI
Scuba Diving Experience	 Scuba Dive Instructor, 1998 - Present Dive School Ownership, 2005 - 2012

SUPERVISED THESIS

Undergraduation

- Asmaa Ahmed (2018). Antibacterial activity of new Sponge species isolated from the Qatari marine zone. (Undergraduation in Biomedical Sciences) - College of Health Science Qatar University. Supervisor: Pejman Hanifi Moghaddam / Co-supervisor: Bruno Welter Giraldes
- Concluded Kamilia Ahmed (2018). Antibacterial activity of new Sponge species isolated from the Qatari marine zone. (Undergraduation in Biomedical Sciences) - College of Health Science Qatar University. Supervisor: Pejman Hanifi Moghaddam / Co-supervisor: Bruno Welter Giraldes
 - Thais Peixoto Macedo (2018). De limpadores a ornamentos de aquário: A diversidade de camarões recifais em Unidades de Conservação da costa brasileira. (Undergraduation in Biological Sciences) -Universidade Federal de Santa Catarina. Supervisor: Andrea Santarosa Freire / Co-supervisor: Bruno Welter Giraldes

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Ameera Ghassan Al-Masdi (2015). Gastropod assemblage on the intertidal zone of Qatar – spatial distribution and biodiversity checklist. (Undergraduation in Environmental Science) – College of Arts and Science, Qatar University. Supervisor: Ibrahim Al-Maslamani / Co-supervisor: Bruno Welter Giraldes

In PhD - Thesis Rihab Rasheed (2021). Exploitation of Microalgae for aquaculture. Co-supervisor: Bruno Welter Giraldes Doctorat Génie des procédés et bioprocédés Universite De Nantes, France Roshan Baladevan (2021). Upgrading the concept of probiotic concrete for subsea construction. College of Civil Engineer, Qatar University. Co-supervisor: Bruno Welter Giraldes MSc - Thesis Carla Schifino Robles Huber (2021). Qualitative and quantitative analyses of the Zooplankton community from the Al Dakhira Mangroves in Qatar. Graduate Program in Ecology and Biodiversity Evolution. PUC-RS, Brazil. Co-supervisor: Bruno Welter Giraldes

LANGUAGES

English – Fully proficient

Spanish – Intermediary

Portuguese – Native

REFERENCES

Prof. Andrea Santarosa Freire - Professor

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Dr. Alexandra Leitão-Ben Hamadou - Research Assistant Professor

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