

Academic Staff Resume

Name: André Guimarães Lemos Antunes

Title: Associate Professor

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Academic Qualification:

Ph.D. in Biochemistry (Microbiology), University of Coimbra (Portugal)/ University of Regensburg (Germany)

Licenciatura in Biology, University of Coimbra (Portugal)

Teaching Area

At MUST, teaching in the post-graduate module Comparative Planetology. Previous Teaching experience in a variety of life science modules (e.g. Microbiology, Cell Biology, Biochemistry, Molecular Biology).

Research Area

Dr André Antunes is the leader of the Astrobiology group at SKLplanet. He is an environmental microbiologist, having devoted most of his research life to the study of microbial communities in marine and extreme environments, including terrestrial analogue sites of Mars and the exoceans of Europa and Enceladus. He is particularly interested in microbial biodiversity, changes in microbial community structure across environmental gradients, adaptations to extreme conditions and in cross-disciplinary research in the fields of geomicrobiology and astrobiology.

Working Experience (selected)

2019- Present: Associate Professor and Leader of the Astrobiology Group- Macau University of Science and Technology (MUST), State Key Laboratory of Lunar and Planetary Sciences- Space Science Institute, Macau SAR, China

2016-2019: Senior Lecturer- Biology Department, Edge Hill University, Ormskirk, UK

2015: Research Consultant/ Researcher- Computational Bioscience Research Center (CBRC), Computer, Electrical and Mathematical Sciences and Engineering Division (CEMSE), King Abdullah University of Science and Technology (KAUST), Thuwal, Saudi Arabia

2012- 2014: Project Manager/ Post-doc Researcher- MIRRI EU project (Microbial Resource Research Infrastructure): Micoteca da Universidade do Minho, Centro de Engenharia Biológica, University of Minho, Braga, Portugal

Research Projects (selected)

2019: E-MELT: Exploration of Microbial Extremophiles in Lake Tirez (PI); funding by Europlanet 2020 RI

2018-2019: Microbial Diversity and Bioprospection of Unexplored and Threatened Coastal Environments (PI); funding by EMBRIC- European Marine Biological Research Infrastructure Cluster Transnational Access Programme

2018-2019: CHASE- Cabo Verde Hypersaline Environments: Analysis, Survey, and Exploration (PI); funding by GCRF (Global Challenge Research Fund)

Professional Certification and Awards (selected)

2019: People's Choice Poster Prize 2nd Place (Microbiology Society Annual Conference 2019)- Microbiology Society (UK)
 2018: Winner of the People's Choice Poster Prize (Microbiology Society Annual Conference 2018)- Microbiology Society (UK)
 2017: Winner of the Best Principal Investigator Poster Prize (Microbiology Society Annual Conference 2017)-Microbiology Society (UK)
 2011: SEDCO Research Excellence Award (awarded to research project)- SEDCO Holding Company

Professional Society Membership (selected)

Microbiology Society

Society for Applied Microbiology (SfAM)

The International Society for Extremophiles (ISE)

Federation of European Microbiological Societies (FEMS)

Academic Publication

Journal Articles:

- 51. Devaynes, A., Antunes, A., Bedford, A., Hipperson, H., Dawson, D. & Ashton, P. (2020).** Bacteria and ectoparasite presence in Blue tit nests. *Microbial Ecology* (submitted).
- 50. Alam, I., Kamau, A. A., Ngugi, D. K., Antunes, A., Gojobori, T., Duarte, C. & Bajic, V. B. (2020).** Enabling Access to Improved Analytics of Massive Metagenomics Data. *Microbiome* (submitted).
- 49. Al-Mahrouqi, N., Muthukrishnan, T., Nallusamy, S., Antunes, A., & Abed, R. M. M. (2020).** Utilization of food wastes for the production of bioethanol using moderately halophilic bacteria isolated from a hypersaline microbial mat. *Biofuels* (submitted).
- 48. Kelbrick, M., Abed, R., & Antunes, A. (2020).** *Motilimonas cestriensis* sp. nov., isolated from an Inland Brine Spring in the UK, and emended description of the genus *Motilimonas*. *Int J Syst Evol Microbiol* (submitted).
- 47. Zhang, G., Dong, X., Sun, Y., Antunes, A., Hikmawan, A., Haroon, M. F., Wang, J. & Stingl, U. (2019).** *Haloferax profundus* sp. nov. and *Haloferax marisrubri* sp. nov., isolated from the Discovery Deep brine-seawater interface in the Red Sea. *Microorganisms* (accepted).
- 46. Méndez, A., Rivera-Valentín, E. G., Schulze-Makuch, D., Filiberto, J., Ramírez, R., Wood, T. E., Dávila, A., McKay, C., Ceballos, K. O., Jusino-Maldonado, M., Torres-Santiago, N., Nery, G., Heller, R., Byrne, P., Malaska, M. J., Nathan, E., Simões, M. F., Antunes, A., Martínez-Frías, J., Carone, L., Izenberg, N. R., Atri, D., Chitty, H. I. C., Nowajewski-Barra, P., Rivera-Hernández, F., Brown, C., Lynch, K., Catling, D., Zuluaga, J. I., Salazar, J. F., Chen, H., González, G., Jagadeesh, M. K., & Haqq-Misra, J. (2020).** Habitability Models for Astrobiology. *Astrobiology* (accepted).
- 45. Antunes, A. (2020).** Out of this World: From the bottom of the Red Sea to the Red Planet. *Frontiers for Young Minds* (accepted).
- 44. Simões, M. F., Ottoni, C. A., & Antunes, A. (2020).** Mycogenic metal nanoparticles for the treatment of mycobacteriosis. *Antibiotics*, 9(9), 569.
- 43. McGenity, T. J., Gessesse, A., Hallsworth, J. E., Garcia Cela, E., Verheeecke-Vaessen, C., Wang, F., Chavarría, M., Haggblom, M. M., Molin, S., Danchin, A., Smid, E. J., Lood, C., Cockell, C. S., Whitby, C., Liu, S.-J., Keller, N. P., Stein, L. Y., Bordenstein, S. R., Lal, R., Nunes, O. C., Gram, L., Singh, B. K., Webster, N. S., Morris, C., Sivinski, S., Bindschedler, S., Junier, P., Antunes, A., Baxter, B. K., Scavone, P., & Timmis, K. (2020).** Visualizing the invisible: class excursions to ignite children's enthusiasm for microbes. *Microbial Biotechnology*, 13, 844-887.
- 42. Simões, M. F., Ottoni, C. A., & Antunes, A. (2020).** Biogenic Metal Nanoparticles: A New Approach to Detect Life on Mars?. *Life*, 10(3), 28.
- 41. DasSarma, P., Antunes, A., Simões, M. F., & DasSarma, S. (2020).** Earth's Stratosphere and Microbial Life. *Current Issues in Molecular Biology*, 38, 197-244.
- 40. Antunes, A., Olsson-Francis, K., & McGenity, T. (2019).** Exploring deep-sea brines as potential terrestrial analogues of oceans in the icy moons of the outer solar system. *Current Issues in Molecular Biology* 38, 123-162.
- 39. Jebbar, M., Hickman-Lewis, K., Cavalazzi, B., Taubner, R. S., Simon, K. M. R., & Antunes, A. (2020).** Microbial Diversity and Biosignatures: An Icy Moons Perspective. *Space Science Reviews*, 216(1), 10.

38. Taubner, R.S., Olsson-Francis, K., Vance, S.D., Ramkissoo, N.K., Postberg, F., de Vera, J.P., Antunes, A., Casas, E.C., Sekine, Y., Noack, L., & Barge, L. (2020). Experimental and simulation efforts in the astrobiological exploration of exooceans. *Space science reviews*, 216(1), 9.
37. Kelbrick, M., Abed, R. & Antunes, A. (2019). *Motilimonas cestriensis* sp. nov., isolated from a Cheshire Brine Spring. *Access Microbiology* 1(1A). doi:10.1099/acmi.ac2019.po0227
36. McCulloch, B., Rowson, J., da Moura, A., Rocha, H., Simões, M. F. & Antunes, A. (2019). Metabolic Profiling and Environmental Characterisation of Salterns in the Islands of Cabo Verde. *Access Microbiology* 1(1A). doi:10.1099/acmi.ac2019.po0517
35. Loftus, P. & Antunes, A. (2019). Genomic Trends on the Biogenic CaCO₃ production in the genus *Bacillus*. *Access Microbiology* 1(1A). doi:10.1099/acmi.ac2019.po0331
34. D'Arcy, J. & Antunes, A. (2019). Biomineralization of microbes in natural and restored saltmarshes: A missing link in restoration efforts? *Access Microbiology* 1(1A). doi:10.1099/acmi.ac2019.po0516
33. Rettberg, P., Antunes, A., Brucato, J., Cabezas, P., Collins, G., Haddaji, A., Kminek, G., Leuko, S., McKenna-Lawlor, S., Moissl-Eichinger, C., Fellous, J.-L., Olsson-Francis, K., Pearce, D., Rabbow, E., Royle, S., Saunders, M., Sephton, M., Spry, A., Walter, N., Schweingruber, R. W. & Treuet, J.-C. (2019). Biological contamination prevention for Outer Solar System moons of astrobiological interest– What do we need to know? *Astrobiology* 19, 1-24. doi.org/10.1089/ast.2018.1996
32. Devaynes, A., Antunes, A., Bedford, A. & Ashton, P. (2018). Bacterial species richness at three stages of the breeding season in *Cyanistes caeruleus* (Blue tit). *Journal of Avian Biology* 92, 123-130.
31. Othoum, G. K., Bougouffa, S., Razali, R. M., Bokhari, A., Alamoudi, S., Antunes, A., Gao, X., Hoehndorf, R., Arold, S. T., Gojobori, T., Hirt, H., Mijakovic, I., Bajic, V. B., Lafi, F. F. & Essack, M. (2018). *In Silico* Exploration of Red Sea *Bacillus* Genomes for Natural Product Biosynthetic Gene Clusters. *BMC Genomics* 19, 382.
30. Devaynes, A., Antunes, A., Bedford, A. & Ashton, P. (2018). Progression in the bacterial load of Blue tit occupied nest boxes during the breeding season and its potential impact upon hatching or fledging success. *Journal of Ornithology* 159(4), 1009-1017.
29. Kaartvedt, S., Antunes, A., Røstad, A. & Klevjer, T. A., Vestheim (2016). Zooplankton at deep Red Sea brine pools. *Journal of Planktonic Research* 38(3), 679-684.
28. Antunes, A., Stackebrandt, E. & Lima, N. (2016). Fueling the Bio-economy: European Culture Collections and Microbiology Education and Training. *Trends in Microbiology*. 24(2), 77-79.
27. Simões, M. F., Antunes, A., Ottoni, C., Alam, I., Amini, M. S. & Bajic, V. B. (2015). Fungi associated with soil and rhizosphere in grey mangroves (*Avicennia marina*) from the Red Sea- a metagenomic approach. *Genomics, Proteomics & Bioinformatics* 13(5), 310-320.
26. Salhi, A., Essack, M., Radovanovic, A., Marchand, B., Bougouffa, S., Antunes, A., Simões, M. F., Lafi, F. F., Motwalli, O. A., Bokhari, A., Malas, T., Al Amoudi, S., Othum, G., Alam, I., Mineta, K., Gao, X., Hoehndorf, R., Archer, J. A. C., Gojobori, T. & Bajic, V. B. (2015). DESM: portal for microbial knowledge exploration systems. *Nuc Acids Research*, gkv1147.
25. Antunes, A., Alam, I., Simões, M. F., Daniels, C., Siam, R., El-Dorry, H. & Bajic, V. B. (2015). First insights on the viral communities of the deep-sea anoxic brines of the Red Sea. *Genomics, Proteomics & Bioinformatics* 13(5), 304-309.
24. Alzubaidy, H., Essack, M., Malas, T. B., Bokhari, A., Motwalli, O., Kamanu, F. K., Jamhor, S. A., Mokhtar, N. A., Antunes, A., Simões, M. F., Alam, I., Bougouffa, S., Lafi, F. F., Bajic, V. B. & Archer, J. A.C. (2015). Rhizosphere microbiome metagenomics of grey mangroves (*Avicennia marina*) in the Red Sea. *Gene* 576(2), 626-636.
23. Guan, Y., Hikmawan, T., Antunes, A., Ngugi, D. & Stingl, U. (2015). Diversity of methanogens and sulfate-reducing bacteria in the interfaces of five deep-sea anoxic brines of the Red Sea. *Res Microbiol*. 166(9), 688-699.
22. Costa, S. R., Antunes, A. & Lima, N. (2015). Towards a strategic concept for innovative learning programmes and tools in the Microbial Resource Research Infrastructure (MIRRI). *Intrinsic Activity*. 3 (Suppl. 1): A1.1.
21. Oliver, P. G., Vestheim, H., Antunes, A. & Kaartvedt, S. (2015). Systematics, functional morphology and distribution of a bivalve (*Apachecorbula muriatica* gen. et sp. nov.) from the rim of the 'Valdivia Deep' brine pool in the Red Sea. *J Mar Biol Assoc U.K.* 95(3), 523-535.
20. Antunes, A., Piessens, V., Zuzuarregui, A., Perugini, I., Lima, N. & The MIRRI Consortium (2014). Offer, Demand, and Needs in Training and Education: A Study Focusing on Microbial Culture Collections within the MIRRI Consortium. *New Biotechnol* 31S, 155.
19. Ngugi, D. K., Blom, J., Alam, I., Rashid, M., Ba-Alawi, W., Zhang, G., Hikmawan, T., Guan, Y., Antunes, A., Siam, R., El Dorry, H., Bajic, V. & Stingl, U. (2014). Comparative genomics reveals niche adaptations of an abundant halotolerant thaumarchaeon in the brine-seawater interface of Red Sea's brine pools. *ISME J* doi:10.1038/ismej.2014.137.
18. Ferreira, A. J. S., Siam, R., Setubal, J. C., Moustafa, A., Sayed, A., Chambergo, F. S., Dawe, A. S., Ghazy, M., Sharaf, H., Ouf, A., Alam, I., Abdel-Aleem, A. M., Lehvaslaiho, H., Ramadasn, E., Antunes, A., Stingl, U., Archer, J. A. C., Jankovic, B. R., Sogin, M., Bajic, V. B. & El-Dorry, H. (2014). Core Microbial Functional Activities in Ocean Environments Revealed by Global Metagenomic Profiling Analyses. *PLoS One*. 9(6): e97338. doi:10.1371/journal.pone.0097338.

- 17. Werner, J., Ferrer, M., Michel, G., Mann, A. J., Huang, S., Juarez, S., Ciordia, S., Albar, J. P., Alcaide, M., La Cono, V., Yakimov, M. M., Antunes, A., Taborda, M., da Costa, M. S., Hai, T., Glöckner, F. O., Golyshina, O. V., Golyshin, P. N., Teeling, H. & The MAMBA Consortium (2014).** *Halorhabdus tiamatea*: Proteogenomics and glycosidase activity measurements identify the first cultivated euryarchaeon from a deep-sea anoxic brine lake as polysaccharide degrader. *Environ Microbiol.* doi: 10.1111/1462-2920.12393.
- 16. Alam, I., Antunes, A., Baalawi, W., Kamau, A., Stingl, U. & Bajic, V. B. (2013).** INDIGO – Integrated Data warehouse of mIcrobial GenOmEs with Examples from the Red Sea Extremophiles. *PLoS One* 8 (12): e82210. doi:10.1371/journal.pone.0082210.
- 15. Sagar, S., Esau, L., Hikmawan, T., Antunes, A., Stingl, U., Bajic, V. B. & Kaur, M. (2013).** Cytotoxic and Apoptotic Evaluations of Marine Bacteria from Brine-Seawater Interface of the Red Sea. *BioMed Central* 13, 29 doi:10.1186/1472-6882-13-29.
- 14. Holert, J., Alam, I., Larsen, M., Antunes, A., Bajic, V. B., Stingl, U. & Philipp (2013).** Genome sequence of *Pseudomonas* sp. Strain Chol1, a model organism for the degradation of bile salts and other steroid compounds. *Genome Announc* 1(1):e00014-12. doi:10.1128/genomeA.00014-12.
- 13. Siam, R., Mustafa, G. A., Sharaf, H., Moustafa, A., Ramadan, A., Antunes, A., Bajic, V. B., Stingl, U., Marsis, N, G. R., Coolen, M. J. L., Sogin, M., Ferreira, A. J. & El-Dorri, H. (2012)** Unique prokaryotic consortia in geochemically distinct sediments from Red Sea, Atlantis II, and Discovery Deep Brine Pools. *PLoS One* 7(8): e42872. doi:10.1371/journal.pone.0042872.
- 12. Ngugi, D. K., Antunes, A., Brune, A. & Stingl, U. (2012).** Biogeography of pelagic bacterioplankton across an antagonistic temperature-salinity gradient in the Red Sea. *Mol. Ecol.* 21, 388-405.
- 11. Antunes, A., Alam, I., Bajic, V. B. & Stingl, U. (2011).** Genome sequence of *Haloplasma contractile*, an unusual contractile bacterium from a deep-sea anoxic brine lake. *J Bacteriol.* 193, 4551-4552.
- 10. Antunes, A., Alam, I., Bajic, V. B. & Stingl, U. (2011).** Genome sequence of *Salinisphaera shabanensis*, a gammaproteobacterium from the harsh, variable environment of the brine-seawater interface of the Shaban Deep, Red Sea. *J Bacteriol.* 193, 4555-4556.
- 9. Antunes, A., Alam, I., Bajic, V. B. & Stingl, U. (2011).** Genome sequence of *Halorhabdus tiamatea*, the first archaeon isolated from a deep-sea anoxic brine lake. *J Bacteriol.* 193, 4553-4554.
- 8. Antunes, A., Ngugi, D. K. & Stingl, U. (2011).** Microbiology of the Red Sea (and other) deep-sea anoxic brine lakes. *Environ Microbiol Rep.* 3, 416-433 doi: 10.1111/j.1758-2229.2011.00264.x.
- 7. Antunes, C. L., Almeida, T. R., Raposeiro, N., Gonçalves, B., Almeida, P. & Antunes, A. (2010).** A Tubular Electrode for Radiofrequency Ablation Therapy. *World Acad Sci Eng Technol* 70.
- 6. Taborda, M., Antunes, A., Tiago, I., Veríssimo, A., Nobre, M. F. & da Costa, M. S. (2009).** Description of *Idiomarina insulalsae* sp. nov., isolated from the soil of a sea salt evaporation pond, proposal to transfer the members of the genus *Pseudidiomarina* to the genus *Idiomarina* and emended description of the genus *Idiomarina*. *Syst Appl Microbiol* 32, 371-378.
- 5. Antunes, A., Rainey, F., Wanner, G., Taborda, M., Pätzold, J., Nobre, M. F., da Costa, M. S., & Huber, R. (2008).** A new lineage of halophilic, wall-less, contractile bacteria from a brine-filled Deep of the Red Sea. *J Bacteriol* 190, 3580-3587.
- 4. Antunes, A., Taborda, M., Huber, R., Moissl, C., Nobre, M. F. & da Costa, M. S. (2008).** *Halorhabdus tiamatea* sp. nov., a non-pigmented, extremely halophilic archaeon from a deep-sea hypersaline anoxic basin of the Red Sea, and emended description of the genus *Halorhabdus*. *Int J Syst Evol Microbiol* 58, 215-220.
- 3. Antunes, A., França, L., Rainey, F. A., Huber, R., Nobre, M. F., Edwards, K. J. & da Costa, M. S. (2007).** *Marinobacter salsuginis* sp. nov., a novel species from the brine-seawater interface of the Shaban Deep, Red Sea. *Int J Syst Evol Microbiol* 57, 1035-1040.
- 2. Antunes, A., Eder, W., Fareleira, P., Santos, H. & Huber, R. (2003).** *Salinisphaera shabanensis* gen. nov., sp. nov., a novel, moderately halophilic bacterium from the brine-seawater interface of the Shaban Deep, Red Sea. *Extremophiles* 7, 29-34.
- 1. Antunes, A., Rainey, F. A., Nobre, M. F., Schumann, P., Ferreira, A. M., Ramos, A., Santos, H. & da Costa, M. S. (2002).** *Leuconostoc ficulneum* sp. nov., a novel lactic acid bacterium isolated from a ripe fig, and reclassification of *Lactobacillus fructosus* as *Leuconostoc fructosum* comb. nov. *Int J Syst Evol Microbiol* 52, 647-655.

Books, Book Chapters, and Reports:

- 25. Méndez, A., Rivera-Valentín, E. G., Schulze-Makuch, D., Filiberto, J., Ramírez, R., Wood, T. E., Dávila, A., McKay, C., Ceballos, K. O., Jusino-Maldonado, M., Nery, G., Heller, R., Byrne, P., Malaska, M. J., Nathan, E., Simões, M. F., Antunes, A., Martínez-Frías, J., Carone, L., Izenberg, N. R., Atri, D., Chitty, H. I. C., Nowajewski-Barra, P., Rivera-Hernández, F., Brown, C., Lynch, K., Catling, D., Zuluaga, J. I., Salazar, J. F., Chen, H., González, G., Jagadeesh, M. K., Barnes, R., Cockell, C. S., & Haqq-Misra, J. (2020).** Habitability Models for Planetary Sciences. White Paper for the Planetary Science and Astrobiology Decadal Survey 2023–2032. (submitted)
- 24. DasSarma, P., Antunes, A., Simões, M. F., & DasSarma, S. (2020).** In: *Astrobiology: Current, Evolving, and Emerging Perspectives*. Edited by A. Antunes. Wymondham, UK: Caister Academic Press.
- 23. Antunes, A., Olsson-Francis, K. & McGennity, T. (2020).** Exploring deep-sea brines as potential terrestrial analogues of oceans in the icy moons of the outer solar system. In: *Astrobiology: Life on the Edge*. Edited by A. Antunes. Wymondham, UK: Caister Academic Press.
- 22. Göker, M. & Antunes, A. (2019).** The genus *Haloplasma*, In: *Bergey's Manual of Systematic Microbiology*, 3rd Edition. Edited by B. Whitman. New York, NY: John Wiley & Sons.

21. Committee on Planetary Protection Requirements for Sample-Return Missions from Martian Moons (2019). Planetary Protection Classification of Sample-Return Missions from the Martian Moons. Edited by National Academies Press. Washington, DC.

20. Society for Applied Microbiology (2018). Science Policy Briefing: The marine microbiome. Science Notes for Policy. Edited by Society for Applied Microbiology. London, UK.

19. PPOSS (2018). The Planetary Protection of the Outer Solar System Research White Book- Deliverable of the PPOSS EU-Project, German Aerospace Center (DLR), Germany.

18. Antunes, A. (2018). The order *Haloplasmodiales*, In: *Bergey's Manual of Systematic Microbiology*, 3rd Edition. Edited by B. Whitman. New York, NY: John Wiley & Sons.

17. Antunes, A. (2018). The family *Haloplasmodaceae*, In: *Bergey's Manual of Systematic Microbiology*, 3rd Edition. Edited by B. Whitman. New York, NY: John Wiley & Sons.

16. Antunes, A., Simões, M. F., Crespo-Medina, M., Vetriani, C. & Shimane, Y. (2018). The genus *Salinisphaera*, In: *Bergey's Manual of Systematic Microbiology*, 3rd Edition. Edited by B. Whitman. New York, NY: John Wiley & Sons.

15. Antunes, A., Kaartvedt, S. & Schmidt, M. (2018). Geochemistry and Life at the Interfaces of Brine-filled Deep-sea in the Red Sea, In: *Oceanography and Environment of the Red Sea II*, Springer Earth System Sciences 2018. Springer: Berlin (**in press**).

14. Antunes, A., et al. (2017). Bioprospecting Archaea: focus on extreme halophiles, In: *Bioprospecting: Success, Potential and Constraints*. Springer: Berlin.

13. Antunes, A. (2017). Extreme Red Sea: Life in the Deep-Sea Anoxic Brine Lakes, In: *Red Sea VI Proceedings*. Edited by A. Agius, E. Khalil & E. Scerri. Leiden, The Netherlands: E.J. Brill.

12. Antunes, A. (2016). The genus *Halorhabdus*, In: *Bergey's Manual of Systematic Microbiology*, 3rd Edition. Edited by B. Whitman. New York, NY: John Wiley & Sons.

11. Antunes, A. (2014). The family *Haloplasmodaceae*, In: *The Prokaryotes- Firmicutes and Tenericutes*, 4th Edition, pp 179-184. Edited by E. Rosenberg et al. New York, NY: Springer. DOI 10.1007/978-3-642-30120-9_206

10. Vetriani, C., Crespo-Medina, M. & Antunes, A. (2014). The family *Salinisphaeraceae*, In: *The Prokaryotes- Gammaproteobacteria*, 4th Edition, pp 591-596. Edited by E. Rosenberg et al. New York, NY: Springer. DOI 10.1007/978-3-642-38922-1_296

9. MIRRI (2014). Task WP5.3 "Demonstration of the impact of MIRRI on society"- Mid-Term Report. Technical Report for the European Commission, Braga, Portugal: Universidade de Braga.

8. MIRRI (2014). Task WP3.4 "Demonstrate the impact of MIRRI on BRCs"- Mid-Term Report. Technical Report for the European Commission, Braga, Portugal: Universidade de Braga.

7. MIRRI (2013). Snapshot on Education and Training Needs by Customers of members of the MIRRI consortium- WP2 Survey. Technical Report, Braga, Portugal: Universidade de Braga.

6. MIRRI (2013). Panorama on Education and Training, Current Tools, and Contents produced and used within MIRRI- WP7 Survey. Technical Report, Braga, Portugal: Universidade de Braga.

5. MIRRI (2013). Monitoring and Evaluation M&E of MIRRI impact. Technical Report, Braga, Portugal: Universidade de Braga.

4. Antunes, A. (2011). 3rd KAUST/WHOI Red Sea Expedition (Leg 2)- Fall 2011. Cruise Report, Thuwal, Saudi Arabia: King Abdullah University of Science and Technology (KAUST).

3. Antunes, A. (2005). *Microbiology of the Northern brine-filled pools of the Red Sea*. PhD Thesis, Coimbra, Portugal: Universidade de Coimbra.

2. Antunes, A. (2003). Microbial life at the anaerobic brine/seawater and sediment/brine interfaces, In: *Black Sea- Mediterranean- Red Sea*, Cruise No. 52, Leg 3, January 2- March 27, 2002, pp 50-52. Edited by J. Pätzold, G. Bohrmann & C. Hübscher. Hamburg, Germany: Universität Hamburg.

1. Pätzold, J., Moammar, M., Al Farawati, R., Al Hazmi, Y.M.M., Al Oubi, A., Antunes, A., Arz, H.W., Berger, J., Botz, R., Donner, B., Ehrhardt, A., Garbe-Schönberg, C.-D., Ghandourah, M., Hübscher, C., Kahl, G., Klann, M., Klauke, S., Klitzke, U., Legge, H.L., Lichowski, F., Schewe, F., Schmidt, M., Schmitt, M., Seeberg-Elverfeldt, I. & Truscheit, T. (2003). *Black Sea- Mediterranean- Red Sea*, Cruise No. 52, Leg 3, January 2- March 27, 2002. Cruise Report, Hamburg, Germany: Universität Hamburg.

