

Sarah LEMER, Ph.D

Personal details			
Full name	Sarah Lemer		
Present position	Assistant Professor of Marine Invertebrate Genomics		
Organization	University of Guam		
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EDUCATION

- 2011** **Ph.D. Magna cum Laude: Genetic Biodiversity and Evolution**
Ecole Pratique des Hautes Etudes, Sorbonne - CRIOBE-USR3278 - LABEX CORAIL, France
- 2006** **M.Sc Magna cum Laude: Oceanography, Biology and Marine Ecology**
University of Aix-Marseille II, France
- 2004** **B.Sc Biology of Marine organisms**
University of Aix-Marseille II - University Louis Pasteur of Strasbourg, France

WORK EXPERIENCE and RELEVANT RESEARCH TOPICS

- March 2020** **Assistant Professor of Marine Invertebrate Genomics** – University of Guam Marine Laboratory, Guam, USA.
- 2019 - Present** **Research Associate** – Smithsonian, National Museum of Natural History, DC
- Sequencing and annotating the genome of *Leptastrea purpurea*
- 2016 - 2020** **Senior Research Faculty in Genomics** - University of Guam Marine Laboratory, Guam, USA.
- Population genomics of coral reef species under threat from global climate change
 - Transcriptomic and epigenomics of coral acclimation to heat stress
- 2014 – Present** **Research Associate** - Harvard University, Dept. of Organismic and Evolutionary Biology, MA.
- Phylogenomics of Cardiidae : Evolution of photosymbiosis in bivalves
 - Phylogenomics of phylum Mollusca
 - Phylogenomics of the Class Bivalvia
 - Population genomics of Nautilidae in the Indo-Pacific
 - Transcriptomics processes involved in shell regeneration in the pen-shell *Pinna carnea*
- 2012 – 2014** **Post-doctoral Fellow** - Harvard University, Dept. of Organismic and Evolutionary Biology, MA.
- Phylogenomics and population genomics of marine invertebrates.
- 2011 – 2012** **Post-doctoral Fellow** - French National Center of Scientific Research (CNRS), IFREMER, France
- Transcriptomic processes involved in shell color in the pearl oyster *Pinctada margaritifera*.
- 2008 – 2011** **Ph.D. Candidate** - Ecole Pratique des Hautes Etudes (Sorbonne), France
- Genetic connectivity and historical demography of fragmented populations: tools to evaluate the impact of aquaculture on wild populations of the pearl oyster *Pinctada margaritifera* in French Polynesia.
- 2006 – 2008** **Research assistant** - Research and Development Institute (IRD), ZONÉCO, New-Caledonia.
- Implementing genetic tools to identify commercial reef fish larvae of New Caledonia at the species level.
- 2004 – 2006** **Master research thesis** - Marine Station of Endoume, France & IRD Institute, New-Caledonia.
- Phylogeography of the reef fishes of the genus *Siganidae* in the Indo-Pacific

- 2004** **Bsc 3rd year research thesis** - Marine Station of Endoume, France.
- Histological identification of the different reproductive stages of sponges of the genus *Aplysina*.
- 2003** **Bsc 2nd year research thesis** - Marine Station of Endoume, France.
- Identification of genes from the Antennapedia family in Homoscleromorpha sponges: Evo-Devo approach

PUBLISHED PEER-REVIEWED PUBLICATIONS

Total number of citations 435 / h-index: 13 / i10-Index : 15

22. J. Li; **S. Lemer**; L. Kirkendale; R. Bieler; C. Cavanaugh; G. Giribet. 2020. Shedding light: A phylotranscriptomic perspective illuminates the origin of photosymbiosis in marine bivalves. *BMC Evolutionary Biology*. In press
21. C. Laumer, R. Fernandez, **S. Lemer**, D. Combosch, K. Kocot, A. Riesgo, S. Andrade, W. Sterrer, M. Sorensen, G. Giribet. 2019. Revisiting metazoan phylogeny with genomic sampling of all phyla. *Proceedings of the Royal Society B*: 286
20. **S. Lemer**, R. Bieler, G. Giribet. **2019**. Resolving the relationships of clams and cockles: dense transcriptome sampling drastically improves the bivalve tree of life. *Proceedings of the Royal Society B*: 283
19. T. Cunha, **S. Lemer**, P. Bouchet, Y. Kano, G. Giribet. **2019**. Putting keyhole limpets on the map: Phylogeny and biogeography of the global marine family Fissurellidae (Vetigastropoda, Mollusca). *Molecular Phylogenetics and Evolution*; 135:249-269
18. D. Combosch*, **S. Lemer***, N. Landman, P. Ward, G. Giribet. 2017. Genomic signatures of evolution in the living fossil Nautilus. *Molecular Ecology*, 26:5923-5938. * **Shared first authorship**
17. PUPA. Gilbert, KD. Bergmann, CE. Myers, RT. DeVol, CY. Sun, AZ. Blonsky, J. Zhao, EA. Karan, E. Tamre, N. Tamura, MA. Marcus, AJ. Giuffre, **S. Lemer**, G. Giribet, JE. Eiler, AH. Knoll. **2017**. Nacre tablet thickness records formation temperature in modern and fossil shells. *Earth and Planetary Science Letters*; 460:281-292
16. D. Combosch; TM. Collins; EA, Glover; DL. Graf; EM. Harper; JM. Healy; GY. Kawauchi; **S. Lemer**; E. McIntyre; EE. Strong; JD. Taylor; JD. Zardus; PM. Mikkelsen; G. Giribet, R. Bieler. **2017**. A family-level Tree of Life for bivalves based on a Sanger-sequencing approach. *Molecular Phylogenetics and Evolution*, 107: 191-208
15. **S. Lemer**, D. Combosch, D. Dumale, F. Sotto, V. Soliman, G. Giribet. **2016**. The family Pinnidae (Mollusca, Bivalvia) in the Philippine archipelago: observations on its distribution and phylogeography. *The Nautilus*, 130:4.
14. **S. Lemer**, V. González, R. Bieler, G. Giribet. **2016**. Cementing mussels to oysters in the pteriomorphian tree: phylogenomic approach. *Proceedings of the Royal Society B*, 283:1833
13. **S. Lemer**, D. Saulnier, Y. Gueguen, S. Planes. **2015**. Identification of genes associated with shell color in the black-lipped pearl oyster, *Pinctada margaritifera*. *BMC Genomics*, 16:568
12. **S. Lemer**, GY. Kawauchi, CS Andrade, MJ Boyle, G. Giribet. **2015**. Re-evaluating the phylogeny of Sipuncula through transcriptomics. *Molecular Phylogenetics and Evolution*, 83: 174-183
11. R. Fernandez*, **S. Lemer***, G. Giribet. **2015**. Comparative phylogeography and population genetic structure of three widespread mollusc species in the Mediterranean and near Atlantic. *Marine Ecology*, 36: 701-715.
* **Shared first authorship**
10. **S. Lemer** & G. Giribet. **2014**. Occurrence of a Bivalve-inhabiting marine hydrozoan (Hydrozoa, Hydroidolina, Leptothecata) in the amber pen-shell *Pinna carnea* Gmelin, 1791 (Bivalvia, Pteriomorpha, Pinnidae) from Bocas del Toro. *Journal of Molluscan Studies*, 80: 464-468

9. G. Giribet, **S. Lemer**. **2014**. On the occurrence of *Tuleocaris neglecta* Chace, 1969 (Decapoda, Palaemonidae, Pontoninae) in *Echinometra lucunter* (Linnaeus, 1758) (Echinodermata, Echinoidea, Echinometridae) in the archipelagos of Bocas del Toro, Panama. *Crustaceana*, 87: 634-638
8. **S. Lemer** & S. Planes. **2014**. Effects of habitat fragmentation on the genetic structure and connectivity of the black-lipped pearl oyster *Pinctada margaritifera* populations in French Polynesia. *Marine Biology*, 161: 2035-2049
7. **S. Lemer**, B Buge, A. Bemis, G. Giribet. **2014**. First molecular phylogeny of the circumtropical bivalve family Pinnidae (Mollusca, Bivalvia): evidence for high levels of cryptic species diversity. *Molecular Phylogenetics and Evolution*, 75: 11-23
6. **S. Lemer** & S. Planes. **2012**. Translocation of wild populations: conservation implications for the genetic diversity of the black-lipped pearl oyster *Pinctada margaritifera*. *Molecular Ecology*, 21: 2949-2962
5. A.C. Stier, M.A. Gil, C.S. McKeon, **S. Lemer**, M. Leray, S.C. Mills, C.W. Osenberg. **2012**. Housekeeping mutualisms: do more symbionts facilitate host performance? *PLoS ONE* 7(4):e32079. doi:10.1371/journal.pone.0032079
4. **S. Lemer**, E. Rochel, S. Planes. **2011**. Correction method for null alleles in species with variable microsatellite flanking regions, a case study of the black-lipped pearl oyster *Pinctada margaritifera*. *Journal of Heredity*, 102 (2) 243-246
3. S. Planes & **S Lemer**. **2011**. Individual-based analysis opens new insights into understanding population structure and animal behaviour. *Molecular Ecology*, 20: 187-189
2. P. Borsa, **S Lemer**, D. Aurelle. **2007**. Patterns of lineage diversification in rabbitfishes. *Molecular Phylogenetics and Evolution*, 44: 427-435.
1. **S. Lemer**, D. Aurelle, L. Vigliola, J.D. Durand, P. Borsa. **2007**. Cytochrome b barcoding, molecular systematics, and geographic differentiation in rabbitfishes (Siganidae). *Comptes Rendus Biologies*, 330 (1): 86-94.

PEER-REVIEWED PUBLICATIONS UNDER REVIEW

1. J. Fifer, B. Bentlage, **S. Lemer**, A. Fujimura, M. Sweet, L. Raymundo. 2019. Going with the flow: Corals in high-flow environments can beat the heat. *In review in Molecular Ecology*

TEACHING EXPERIENCE

- | | |
|---------------------------|--|
| 2017 Spring | Introduction to Biogeography , graduate level University of Guam Marine Lab, GU, USA |
| 2014 – Present | Certified Lecturer: for "Biology of Organisms" and "Biology of populations and Ecology": issued by the French Ministry of Advanced Education and Research |
| 2014 – 2016 Spring | Genetics, Genomics and Evolution , undergraduate level: Harvard University, MA, USA. |
| 2013 -2015 Spring | Invertebrate Zoology , graduate level: Harvard University, MA, USA |
| 2009– 2011 Fall | Introduction to population genetics , undergraduate level : Ecole Pratique des Hautes Etudes (Sorbonne), France |

STUDENT ADVISING EXPERIENCE

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| Present | 6 Graduate Student Committee Member: Franck Roberto, Julia Berg, Karim Primov, Dareon Rios, Melissa Gabriel, Colin Lock: University of Guam Marine Lab, GU, USA |
| 2019 | Committee member: PhD student (<i>Pierre Louis Stenger</i>): Université de Paris Science Lettre, France |
| 2019 Summer | Advisor: 1 Undergraduate student (<i>Joshua Cepeda</i>): University of Notre Dame, USA |
| 2019 Spring | Advisor: 4 Undergraduates students (<i>Vince Fabian, Jasmin Rotan, Naomi Borg, Mykel Lizama</i>): University of Guam Marine Lab, GU, USA |
| 2018 Fall | Advisor: 3 Undergraduates students (<i>Vince Fabian, Jasmin Rotan, Charles Hambley</i>): University of Guam Marine Lab, GU, USA |

- 2018 Summer** **Advisor:** 4 Undergraduates students (*Vince Fabian, Jasmin Rotan, Charles Hambley, Joanna Panaguigon*): University of Guam Marine Lab, GU, USA
- 2017- Present** **Advisor:** 2 Graduate students (*Victoria Moscato, Constance Sartor*): University of Guam Marine Lab, GU, USA
- 2013 - 2019** **Co-advisor:** PhD student (*Tauana Junqueira Cuhna*): Harvard University, MA, USA
- 2010** **Advisor:** Master student (*Celia Mathot*): Ecole Pratique des Hautes Etudes, Sorbonne, France

CONFERENCES

- 2019** World Congress of Malacology, Monterey, CA: Lemer, Combosch, Giribet. Talk 1
- 2019** World Congress of Malacology, Monterey, CA: Lemer, Bieler, Giribet. Talk 2
- 2019** Gordon Research Conference: Marine Molecular Ecology, Hong Kong. **Lemer**; Poster
- 2019** Evolution meeting, Providence. RI. **Lemer**, Combosch, Giribet. Talk
- 2019** CIS X conference, Guam: **Lemer**, Marine Science session. Chair
- 2018** SACNAS 2018, San Antonio, USA: **Lemer**, Marine genomics symposium. Chair
- 2018** Asia Pacific Coral Reef Symposium, Philippines: **Lemer**, Combosch, Lemos. Talk
- 2018** Guam Coral Reef Symposium, Guam: **Lemer**, Combosch, Lemos. Talk
- 2017** European Coral Reef Symposium, United Kingdom: **Lemer**, Combosch, Lemos. Talk
- 2017** Soc. for Integrative and Comparative Biology, Li, **Lemer**, Giribet, Kirkendale, Cavanaugh. Talk
- 2016** World Congress of Malacology, Malaysia: **Lemer** & Giribet. Talk
- 2013** World Congress of Malacology Azores: **Lemer** & Giribet. Talk
- 2012** International Coraf Reef Symposium, Australia: **Lemer** & Planes. Talk
- 2010** European Coral Reef Symposium, Netherlands: **Lemer** & Planes. Poster
- 2009** 11th Pacific Science Inter-Congress, French Polynesia: **Lemer**, E. Rochel, S. Planes. Talk

INVITED TALKS

- 2019** **World Congress of Malacology**, Monterey, CA: Panel discussion
- International work while in Academia
- 2018** **Science Sunday** - T. Stell Newman Visitor Center, Santa Rita, Guam
- Guam Coral Genetics: Genes against Bleaching
- 2017** **SWIMS Special Seminars** - Hong Kong University, Hong Kong
- Evolutionary Genomics and the EPSCoR Guam Ecosystem Collaboratorium
- 2017** **Poets Club Public Talks**- University of Guam Marine Lab, GU, USA
- The Mystery of the Black Pearls: An in-depth Exploration of the Black-lipped Pearl Oyster
- 2015** **Museum of Comparative Zoology** - Harvard University, Cambridge, USA
- Transcriptomes as tools to reconstruct phylogenetic relationships of non-model species

WORKSHOPS

- 2019** Genome Annotation Workshop – Smithsonian NMNH, DC, USA
- 2017** NSF 'How to stand out as a SuperCommunicator' - HI, USA
- 2014** Next-generation sequencing for phylogenetics - NESCent Academy, NC, USA
- 2012** Evolution workshop - Sao Paulo School of Advance Science, Brazil
- 2010** Marine Genomics Europe Summer Course - Roscoff Biological Station, France
- 2009 - 2011** Ocean Bridges Partner University Fund - Gainesville, FL, USA; Moorea, French Polynesia

FELLOWSHIPS AND AWARDS

- 2019** **NSF GuamEPSCoR Seed Grant:** Genome sequencing, assembly and annotation training **11,550 USD**
- 2018** **NSF GuamEPSCoR Seed Grant:** Climate Change and the Epigenetics of Corals: Part 2 **6,500 USD**
- 2018** **NSF GuamEPSCoR Seed Grant:** Characterization of "Coral Glow" in *Acropora sp.* **9,640 USD**
- 2017** **Nat. Fish & Wildlife Foundation:** Simplifying management of coral-reef fisheries **48,445 USD**
- 2017** **NSF GuamEPSCoR Seed Grant:** Climate Change and the Epigenetics of Corals **10,000 USD**
- 2017** **NSF GuamEPSCoR Seed Grant:** Differential Gene Expression during Bleaching **9,055 USD**
- 2014** **Putnam Expedition Grant:** Collecting Nautilidea in Thailand **10,970 USD**

	The Museum of Comparative Zoology, Harvard University, MA, USA	
2014	Unitas Malacologica Travel Grant	800 Euros
2013	Putnam Expedition Grant: Collecting Pinnidae in Baja California Sur, Mexico	10,192 USD
	The Museum of Comparative Zoology, Harvard University, MA, USA	
2013	Postdoctoral Award for Professional Development	1000 USD
	Faculty of Arts and Sciences, Harvard University, MA, USA	
2012	Putnam Expedition Grant: Collecting Pinnidae in the Philippines	7,500 USD
	The Museum of Comparative Zoology, Harvard University, MA, USA	
2011	Price for outstanding young Researchers	25,000 Euros
	The Bettencourt-Schueller Foundation - L'Oréal, France	
2006	Merit based scholarship	4,000 Euros
	The Ministry of National Education, Advanced Education and Research, France	

SCIENTIFIC OUTREACH EVENTS

- 2018** **KUAM TV Interview:** Guam Coral genetics - GU (<https://www.youtube.com/watch?v=OfWnOrw8Y5E>)
- 2017** **Pacific Daily news:** UOG faculty talk coral at University of HongKong (www.guampdn.com/story/news/2017/11/03/uog-faculty-talk-coral-university-hong-kong/828028001/)
- 2017** **SACNAS Conference** - UT, USA
- 2014** **Science Video:** What is Coral Bleaching - GU, USA. In English, Hawaiian and Chamorro
- 2014** **Descience-Research on the runway** - MIT Media Lab, MA, USA.
Under the Sea: Evolution of tropical marine invertebrates (<https://descience27.carbonmade.com/>)
- 2012** **Direction of Marine Resources** - French Polynesia.
Genetic control of shell color in *P. margaritifera*. **S. Lemer**, Talk.
- 2011** **French National Science Fair** - Paris, France.
Science communication: Corals facing global warming. **S. Lemer**, T. Vignaud, Talk.

SCIENTIFIC OUTREACH REPORTS:

8. **S. Lemer. 2014.** Descience goes under the sea: The hurdle of Science communication. by Scientist Sarah Lemer from Team Abyss-Moana. <http://www.fashiondescience.com/#!DESCIENCE-GOES-UNDER-THE-SEA-by-Scientist-Sarah-Lemer-from-Team-Abyss-Moana/c12kd/0984E601-7450-4C87-AFCF-1FB00ED54B73>.
7. C. Belliard, H. Bichet, C. Blay, M. Demoy-Schneider, A. Fougereuse, N. Gaertner-Mazouni, P. Garen, Y. Gueguen, C. Herbinger, CL. Ky, E. Lacoste, H. Leduc, **S. Lemer**, G. Le Moullac, C. Lo, A. Lo-Yat, S. Planes, D. Saulnier, M. Sham Koua, V. Teaniniuraitemoana. **2014.** Project: BIODIPERL, Préservation de la biodiversité des stocks d'huîtres perlières *Pinctada margaritifera* en Polynésie française pour une exploitation durable de la ressource en perliculture. Final Report.
8. **S. Lemer & F. Sotto. 2013.** Harvard University Postdoctoral fellow collaborates with marine research station. University San Carlos Marine Research Station, Cebu, Philippines. <https://uscmarineres.wordpress.com/2013/06/06/harvard-u-postdoctoral-fellow-collaborates-with-marine-research-station/>
5. **S. Lemer. 2012.** Project : Analyse du déterminisme génétique de la couleur de la nacre par les processus conduisant à l'albinisme. Final Report. Department of Fisheries of French Polynesia.
4. Y. Gueguen, M. Demoy-Schneider, P. Garen, C. Herbinger, G. Le Moullac, **S. Lemer**, A. Lo-Yat, S. Planes. **2012.** Project : REGENPERL "Ressources génétiques de la Perliculture polynésienne". Final Report
3. Y. Gueguen, E. Bachere, JP. Cuif, J. Guezennec, G. Gutierrez, CL. Ky, JM. Lebel, G. Lecellier, **S. Lemer**, G. Le Moullac, B. Marie, F. Marin, C. Montagnani, C. Pavat, D. Piquemal, S. Planes, D. Saulnier, M. Serrar, C. Simon-Colin. **2011.** Project : GDR ADEQUA, Amélioration de la qualité des perles de *Pinctada margaritifera* de Polynésie française. Final Report ANR, France.

2. P. Borsa, **S. Lemer**, WJ Chen, A. Collet, L. Carassou, D. Ponton. **2009**. Identification par barcode (séquences nucléotidiques d'un fragment de gene du cytochrome b) des larves de *Lethrinidea* capturées en baies de Dumbéa et Ouano (Nouvelle-Calédonie). Final Report ZoNéCo. IRD, Nouméa, IRD Nouméa Report , 60pp.

1. P.Borsa, M. Kulbicki, A. Collet, **S. Lemer**, G. Mou-Tham. **2009**. Biologie et écologie du bec de cane, *Lethrinus nebulosus* (Forsskal), en Nouvelle-Caledonie. Final Report ZoNéCo. IRD, Nouméa. IRD Nouméa Report, 67 pp.

ADMINISTRATIVE AND COMMUNITY SERVICES

2018-Present **Secretary:** Biology Graduate Program Faculty Committee
2018 **Member:** Proposal and Thesis guideline committee .UOG Biology Graduate Program
2018 **High School Student Summer Research Advisor** (*Tina Quian*)
2018 **Judge:** 40th Annual Island Wide Science Fair
2017- Present **Faculty in charge:** Genetics and Genomics Laboratory - UOG Marine Lab
2017-Present **Faculty representative:** Dive Control Board - UOG Marine Lab
2017 **Judge:** Inarajan Elementary School Science Fair
2014-2016 **Coordinator:** bi-monthly seminar series "Harvard Museum of Comparative Zoology lunchtime seminars".
2008-2011 **Graduate student representative:** École Pratique des Hautes Etudes, France.

SCIENTIFIC REVIEWER

2019 NSF
2010 - Present Molecular Ecology, Molecular Ecology Resources, Molecular Phylogenetic and Evolution, Marine Ecology, Plos One, Journal of Molluscan Studies, Evolutionary Biology, Peer J, Gene, Animal Genetics, Zoological Journal of the Linnaean Society, Systematic and Biodiversity, Scientific Reports, Biological Journal of the Linnaean Society.

MEMBERSHIPS:

- International Coral Reef Society
- Society for the Study of Evolution
- Unitas Malacologica
- International Society for Reef Studies.
- The Society for the Advancement of Chicanos/Hispanics and Native Americans in Science (SACNAS)
- Harvard Graduate Women in Science and Engineering Organization.