

Sarah LEMER, Ph.D

Personal details			
Full name	Sarah Lemer		
Present position	Assistant Professor of Marine Invertebrate Genomics		
Organization	University of Guam		
Contact Address	Marine Laboratory, UOG Station, Mangilao Guam 96923 USA		
Work telephone	+1 671-734-2948	Mobile	+1 671-480-4984
Email	lemers@triton.uog.edu		
Personal website	https://www.uog.edu/ml/labs/lemer		
ORCID URL	https://orcid.org/0000-0003-0048-7296		

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*. 20, 1-15
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

2020 Spring	Marine Invertebrate Biology , graduate level University of Guam Marine Lab, GU, USA
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

Present	7 Graduate Student Committee Member : Franck Roberto, Julia Berg, Karim Primov, Dareon Rios, Melissa Gabriel, Colin Lock, Claire Moreland: University of Guam Marine Lab, GU, USA
2019	Committee member : PhD student (<i>Pierre Louis Stenger</i>): Université de Paris Science Lettre, France
2020 Summer	Advisor : 1 Undergraduate student (<i>Nikko Galanto</i>): University Guam, USA
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 (*Vince Fabian, Jasmin Rotan, Charles Hambley*): University of Guam Marine Lab, GU, USA
- 2018 Summer** **Advisor:** 4 Undergraduates students (*Vince Fabian, Jasmin Rotan, Charles Hambley, Joanna Panaguiton*): 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 Coral 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

- 2020** **Friday Harbor Labs Summer Seminar Series**, Remote online, WA, USA
- Transcriptomic and Epigenetic Mechanisms of Coral Acclimation to Heat Stress
- 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

- 2020** **Nat. Fish & Wildlife Foundation:** Developing a Genetic & Microbiome Toolkit to Assess and Predict Stress levels in Local Corals **118,779 USD**

2020	SeaGrant Competitive Research: Developing a Simple Genetic Toolkit to Assess and Predict Stress levels in Local Corals	39,508 USD
2020	NSF Guam Epscor: Research Lead - Guam Ecosystem Collaboratorium for Corals	20,000,000 USD
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 <i>Acropora sp.</i>	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 The Museum of Comparative Zoology, Harvard University, MA, USA	10,970 USD
2014	Unitas Malacologica Travel Grant	800 Euros
2013	Putnam Expedition Grant: Collecting Pinnidae in Baja California Sur, Mexico The Museum of Comparative Zoology, Harvard University, MA, USA	10,192 USD
2013	Postdoctoral Award for Professional Development Faculty of Arts and Sciences, Harvard University, MA, USA	1000 USD
2012	Putnam Expedition Grant: Collecting Pinnidae in the Philippines The Museum of Comparative Zoology, Harvard University, MA, USA	7,500 USD
2011	Price for outstanding young Researchers The Bettencourt-Schueller Foundation - L'Oréal, France	25,000 Euros
2006	Merit based scholarship The Ministry of National Education, Advanced Education and Research, France	4,000 Euros

SCIENTIFIC OUTREACH EVENTS

- 2020** **Nihi! Kids: Island Science:** Coral reefs of Guam (facebook live platform)
- 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 gène 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-Calédonie. 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** Nature Communications, Scientific Reports, 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, Biological Journal of the Linnaean Society, Animals Genetics, Aquaculture Reports, Ecology & Evolution, Hydrologia.

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.