Malwenn LASSUDRIE (PhD)

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Citizenship: French
28 years old

Car driving license

French: mother tongue
English: fluent (15 mo. in English speaking countries)
Spanish: intermediate level

Keywords:
Harmful Algal Blooms; Host-pathogen interactions; Marine invertebrate physiology and immunity; Microbiome.

Education

December 2014
LEMAR, IUEM, Université de Bretagne Occidentale, Plouzané, France
PhD in Marine Biology

2011
IUEM, Université de Bretagne Occidentale, Plouzané, France
MSc in Marine Biology

2008
Université de Bretagne Occidentale, Brest, France
BSc in Biology of Organisms and Populations

2007
Université de Bretagne Occidentale, Brest, France
"DUT", a two-year technological degree in Biology, specialized in Environmental sciences

Technical skills

Microalgae culture; Zootechnics (marine invertebrates)

Histology: Histopathology; Gonadal maturation stage

Microscopy: Optical and epifluorescence microscopy; Image analysis (Image J software)

Flow cytometry: Count, morphology and functions of hemocytes and phytoplankton cells.

Biochemistry: Enzyme activities (spectophotometry); Protein and carbohydrates assays (spectophotometry), Toxin quantification (ELISA); Fatty acid analysis (gas chromatography).

Molecular biology - Microbiology: Gene expression (RT-qPCR); Bacterial and viral DNA quantification (qPCR); Sanger sequencing; Analysis of bacteriomes (metabarcoding).

Bioinformatics: Analysis of Sanger (Bioedit) and metabarcoding data (QIIME).

Statistics: Multifactorial and multivariate analyses; Correlations; Survival analyses (Statgraphics, Primer6, GraphPad and R softwares)

Research activities

March –July 2015 5 months LEMAR, IUEM, Plouzané, France	Postdoc position: **Differential accumulation of paralytic toxin produced by *Alexandrium* sp. between diploid and triploid oyster *Crassostrea gigas*.** Supervisors: H. Hégaret, P. Soudant, C. Fabioux
2011 – 2014 3 years LEMAR, IUEM, Plouzané, France	PhD: **Combined effects of toxic dinoflagellates and pathogens on bivalve physiology.** Supervisors: H. Hégaret, P. Soudant, C. Fabioux
2011 5 months LEMAR, IUEM, Plouzané, France	2nd year Master's research project: Impacts of exposure to the toxic dinoflagellate *Alexandrium ostenfeldii* upon antioxidant system of Manila clams infected with the protozoan parasite *Perkinsus olseni.* Supervisors: C. Fabioux, P. Soudant and H. Hégaret
2010 2 months IIM, CSIC, Vigo, Spain	1st year Master's research project: Effects of different flow regime exposure on mussel's attachment: comparison of a native (*Mytilus galloprovincialis*) and an invasive species (*Xenostrobus securis*). Supervisor: J.M.F. Babarro
2008 – 2009 6 months Leigh Marine Laboratory, University of Auckland, New Zealand	Volunteer research project: Digestibility of different nutrient sources in artificial nursery diets for the juvenile sea cucumber *Australostichopus mollis*, and effects on growth. Supervisors: A.G. Jeffs and M.J. Slater
2008 –2009 2 months Leigh Marine Laboratory, University of Auckland, New Zealand	Technician: Monitoring of benthic diversity in estuaries. Supervisor: M. Pawley
2007 1 month LEMAR, IUEM, Plouzané France	Technician: Analysis and use of fatty acids as trophic markers in different polychaete worms. Supervisors: E. Kraffe and J. Grall
2007 2.5 months LEMAR, IUEM, Plouzané France	"DUT" research project: Analysis and use of fatty acids as trophic markers in different polychaete worms. Supervisors: E. Kraffe and J. Grall

Teaching and mentoring

Teaching

- Biochemistry (laboratory practicals and taught courses) for undergraduate students (128 hrs)

- Qualified for lecturer functions by the National Council of Universities (CNU) in Biology of Organisms

Mentoring

- 3 undergraduate students (internships)

- Supervisor of a team of interdisciplinary students on a transversal « sciences and society » project

Publications and communications

Publications

- **Published or in press (6)**

de Montaudouin, X., Lucia, M., Binias, C., **Lassudrie, M.**, Baudrimont, M., Legeay, A., Raymond, N., Jude-Lemeilleur, F., Lambert, C., Le Goïc, N., Garabetian, F., Gonzalez, P., Hégaret, H., Lassus, P., Mehdioub, W., Bourasseau, L., Daffe, G., Paul-Pont, I., Plus, M., Do, V.T., Meisterhans, G., Mesmer-Dudons, N., Caill-Milly, N., Sanchez F, Soudant, P. Why is Asari (= Manila) clam (*Ruditapes philippinarum*) fitness poor in Arcachon Bay: a meta-analysis to answer? Estuarine, Coastal and Shelf Science. In press.

Lassudrie, M., Soudant, P., Nicolas, J.L, Fabioux, C., Miner, P., Le Grand, J., Lambert, C., Petton, B., Le Goïc, N., Hégaret, H. (2015) Interaction between toxic dinoflagellate *Alexandrium catenella* exposure and disease associated with herpesvirus OsHV-1 µVar in Pacific oyster spat *Crassostrea gigas*. Harmful Algae, 45, 53-61.

Lassudrie, M., Wikfors, G.H., Sunila, I., Alix, J.H., Dixon, M. S., Combot, D., Soudant, P., Fabioux, C., Hégaret, H. (2015) Physiological and pathological changes in the eastern oyster *Crassostrea virginica* infested with the trematode *Bucephalus* sp. and exposed to the toxic dinoflagellate *Alexandrium fundyense.* Journal of Invertebrate Pathology, 126, 51-63.

Lassudrie, M., Soudant, P., Richard, G., Henry, N., Medhioub, W., da Silva, P.M, Donval, A., Bunel, M., Le Goïc, N., Lambert, C., de Montaudouin, X., Fabioux, C., Hégaret, H. (2014) Physiological responses of Manila clams *Venerupis* (=*Ruditapes*) *philippinarum* with varying parasite *Perkinsus olseni* burden to toxic algal *Alexandrium ostenfeldii* exposure. Aquatic Toxicology, 154, 27-38.

Babarro, J.M.F, **Lassudrie, M.** (2011) Ecophysiological responses of invasive and indigenous mytilids in the Ría de Vigo (NW Spain). Aquatic Living Resources, 24, 303-315.

Slater, M.J., **Lassudrie, M.,** Jeffs, A.G. (2011) Method for determining apparent digestibility of carbohydrate and protein sources for artificial diets for juvenile sea cucumber, *Australostichopus mollis*. Journal of the World Aquaculture Society, 42(5), 714-725.

Oral communications

- International conferences (9)

Hégaret, H.*, Fabioux, C., Lambert, C., Haberkorn, H., **Lassudrie, M.,** Lelong, A., Soudant, P. Harmful Algal Blooms and their impacts on bivalve molluscs. International Conference on Harmful Algae, Wellington, New-Zealand, 2014.

Lassudrie, M., Nicolas, J.L., Le Grand, J., Miner, P., Petton, B., Soudant, P., Fabioux, C., Lambert, C.*, Le Goïc, N., Hégaret, H. Combined effects of the toxic dinoflagellate *Alexandrium catenella* and herpes virus exposure in juvenile *Crassostrea gigas* oysters. PHYSIOMAR, La Serena, Chile, 2014.

Borcier, E, Morvezen, R., Hégaret, H., Miner, P., Le Souchu, P., Fabioux, C., Le Goïc, N., Cassonne, A.-L., Lambert, C.*, **Lassudrie, M.**, Richard, G., Guillonneau, R., Charrier, G., Laroche, J., Boullot, F., Muir, A., Nunes, F., Harney, E., Huvet, A., Soudant, P., Boudry, P. Study of Harmful Algal Bloom's impacts of two strains of *Alexandrium minutum* on behavior and growth of scallops *Pecten maximus.* PHYSIOMAR, La Serena, Chile, 2014.

Lassudrie, M.*, Wikfors, G.H., Combot, D., Sunila, I., Soudant, P., Fabioux, C., Alix, J., Dixon, M., Hégaret, H. Effects of the infection by the trematode *Bucephalus* sp. upon physiology of the eastern oyster *Crassostrea virginica*, and consequences of an additional stress, the exposure to the toxic dinoflagellate *Alexandrium fundyense.* 106th National Shellfisheries Association Annual Meeting, Jacksonville, FL, USA, 2014.

de Montaudouin, X.*, Lucia, M., Binias, C., **Lassudrie, M.**, Baudrimont, M., Legeay, A., Raymond, N., Jude-Lemeilleur, F., Lambert, C., Le Goïc, N., Garabetian, F., Gonzalez, P., Hégaret, H., Lassus, P., Mehdioub, W., Bourasseau, L., Daffe, G., Paul-Pont, I., Plus, M., Do, V.T., Meisterhans, G., Mesmer-Dudons, N., Caill-Milly, N., Sanchez F, Soudant, P. Why is Manila clam (*Ruditapes philippinarum*) fitness poor in Arcachon Bay: a meta-analysis to answer? ISOBAY 14, Bordeaux, France, 2014.

Lassudrie, M.*, Hégaret, H., Miner, P., Lambert, C., Le Grand, J., Soudant, P., Fabioux, C., Le Goïc, N., Petton, B., Nicolas, J.L. Juvenile oysters *Crassostrea gigas* exposed to infectious agents have modified physiological responses to the toxic dinoflagellate *Alexandrium catenella.* PHYSIOMAR, Santiago de Compostela, Spain, 2012.

Lassudrie, M.*, Hégaret, H., Henry, N., Lambert, C., Le Goïc, N., Soudant, P., Fabioux, C. Impacts of *Alexandrium ostenfeldii* exposure upon antioxidant system of the Manila clam *Ruditapes philippinarum* with varying parasite *Perkinsus olseni* burden. 104th National Shellfisheries Association Annual Meeting, Seattle, WA, USA, 2012.

Hégaret, H., Henry, N., Bunel, M., **Lassudrie, M.***, Le Goïc, N., Lambert, C., Donval A., Fabioux, C., de Montaudouin, X., Soudant, P. Impacts of *Alexandrium ostenfeldii* on behavioral and physiological responses of Manila clams *Ruditapes philippinarum* naturally infected with the parasite *Perkinsus olseni.* 104th National Shellfisheries Association Annual Meeting, Seattle, WA, USA, 2012.

Babarro, J.M.F.*, **Lassudrie, M.** *Mytilus galloprovincialis* and *Xenostrobus securis:* byssal attachment comparison facing different flow regimes and substrates. PHYSIOMAR, Québec, QC, Canada, 2010.

- National conferences (3)

Lassudrie, M.*, Fabioux, C., Soudant, P., Lambert, C., Le Goïc, N., Wikfors, G.H., Sunila, I., Nicolas, J.L., Miner, P., Le Grand, J., Hégaret, H. Combined effects of toxic dinoflagellates of the genus *Alexandrium* and pathogens on bivalve physiology. Phycotox GdR and GIS Cyano meeting, Plouzané, France, 2015.

Lassudrie, M.*, Hégaret, H., Miner, P., Lambert, C., Le Grand, J., Soudant, P., Fabioux, C., Le Goïc, N., Petton, B., Nicolas, J.L. Effets sur l'huître juvénile *Crassostrea gigas*, d'une exposition couplée à un dinoflagellé toxique *Alexandrium catenella* et à des huîtres présumées porteuses de l'herpès virus. Journées conchylicoles de l'IFREMER, Roscoff, France, 2013.

Lassudrie, M.*, Hégaret, H., Henry, N., Lambert, C., Le Goïc, N., Soudant, P., Fabioux, C. Environmental factors leading to modifications in gill tissues and in the antioxidant system in farmed Manila clams, *Ruditapes philippinarum.* Milford Aquaculture Seminar, CT, USA, 2012.

Posters (4)

Lassudrie, M.*, Hégaret, H., Fabioux, C. Combined effects of toxic dinoflagellates and pathogens on bivalve physiology. ECOBIM, Plouzané, France, 2014.

Lassudrie, M.*, Hégaret, H., Fabioux, C. Combined effects of toxic dinoflagellates and pathogens on bivalve physiology. Building the Marine Science, Buzios, Brazil, 2013.

Lassudrie, M.*, Hégaret, H., Fabioux. Effets combinés des dinoflagellés toxiques et des pathogènes sur la physiologie des bivalves. Journées de l'Ecole Doctorales des Sciences de la Mer, Plouzané, France, 2013.

Lassudrie, M.*, Hégaret, H., Miner, P., Lambert, C., Le Grand, J., Soudant, P., Fabioux, C., Le Goïc, N., Petton, B., Nicolas, J.L. Juvenile oysters *Crassostrea gigas* exposed to infectious agents modify their hemocyte responses to toxic dinoflagellate *Alexandrium catenella.* 104th National Shellfisheries Association Annual Meeting, Seattle, WA, USA, 2012

*Presentation

Awards and grants

Awards:

- 1st prize for oral student communication, T. C. Nelson Award, 106th National Shellfisheries Association Annual Meeting 2014.

- 1st prize for student poster, Journées de l'Ecole Doctorale des Sciences de la Mer, 2013 (1300 €)

- 2nd prize for oral student communication, PHYSIOMAR 2012

- Honorable mention for student poster, 104th National Shellfisheries Association Annual Meeting 2012.

Travel grants :

- National Shellfisheries Association, 2014 (~200 €)
- LabexMER, 2013 (1200 €)
- National Shellfisheries Association, 2012 (~200 €)
- Université de Bretagne Occidentale, 2012 (3000 €)
- LabexMER, 2012 (2600 €)
- DCIColl from Région Bretagne Council, 2012 (500€)