

VOLLAND Jean-Marie - PhD in Biology

UFR Sciences Exactes et Naturelles, Département de Biologie

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Date of birth: 12/20/1984

French

EDUCATION

- 2010: PhD in Marine Biology – Symbiotic interactions (University of Antilles – Guyane, F.W.I)
- 2007: Master 2^{sd} year: Tropical Biodiversity (University of Antilles-Guyane, F.W.I)
- 2006: Master 1st year: Coastal Areas and Environment (University of La Rochelle, France)
- 2005: Bachelor's degree in Biology of Organisms (University of La Réunion, Mascarene Islands)

RESEARCH EXPERIENCE

- **Since May 2016:** Post-doctoral position in the department of Ecogenetics and Systems Biology, division Archaeal Bioloy and Ecogenomics. I investigate the life cycle of symbiotic nematodes belonging to the Stilbonemadinae.
- **2012-2015: Post-doctoral position** in Monika Bright's Lab at the University of Vienna. Project entitled: *Thiotrophic ciliate mutualism – cooperation goes empirical*. I investigated the trophic relationship based on carbon transfer from the ectosymbiont *Cand. Thiobios zoothamnicoli*, a sulfur oxidizing bacteria to its ciliate host *Zoothamnium niveum*. I also improved and adapted the cultivation system of the symbiosis by designing and testing new cultivation flow-through reactors.
- **2011: Larval development of Strombidae.** Observation and description of the larval development using light and Scanning Electron Microscopy (SEM). Short Post-doctoral internship at the CINVESTAV Unidad Mérida (Yucatan, Mexico).
- **2010: Detoxification of Cu and Zn in two Strombidae species.** Subcellular localization of Cu and Zn using Energy Dispersive X-ray analysis at the SEM.CINVESTAV Unidad Mérida (Yucatan, Mexico).
- **2007-2010: The Strombidae-Sporozoan symbiotic relationship and functioning of the host organ: the digestive gland.** Stuctural and ultrastructural description of the symbiotic organ (histology, *in situ* hybridization, SEM and TEM). PhD supervised by Pr. Olivier GROS at the SAE UMR7138 Laboratory. UNIVERSITY OF ANTILLES-GUYANE.
- **2007: Apicomplexan parasites in *Strombus gigas* in the guadeloupean archipelago.** Master thesis: 6-month obligatory internship at the SAE UMR7138 Laboratory. UNIVERSITY OF ANTILLES-GUYANE

PUBLICATION OUTPUT

- 6 articles accepted in international journals (rank 1, IF>0,5)
- 1 book review in an international journal (rank A, IF>0,5)
- 2 articles in conference proceedings.
- 6 poster presented in conferences
- 6 oral communications in conferences

PROFESSIONAL SKILLS

- **Tissus autoradiography:** ^{14}C incubations, sample processing, image analysis of the autoradiographs.
- **NanoSIMS analysis:** stable isotope probing using ^{13}C and ^{15}N , sample preparation, analysis and TEM correlation.
- **Photonic microscopy:** classic and cryo-preparation techniques of samples. Histological staining. Classic photonic and epi-fluorescent microscopy observations.
- **Electronic microscopy:** samples preparation techniques including plunge freezing & cryo-substitution. SEM and TEM observations. Elemental analytical technique (EDX analysis and EELS).
- **Cytochemistry:** cytochemical detection of lysosomal enzymes.
- **Cultivation:** maintenance and reproduction of the thiotrophic symbiosis *Zoothamnium niveum/Cand.* Thiobios zoothamnicoli. Gastropods farming techniques. Embryonic and larval development of Strombidae. Maintaining of cnidarians species in aquarium.
- **Molecular biology:** DNA extraction and PCR amplification. Fluorescent *in situ* hybridization (FISH).
- **Computer skills:** OS Linux (Ubuntu) and Windows. Editing image program (GIMP, Photoshop). Office suite (OOo and Microsoft Office). Refworks (bibliography management). SPSS (Statistics).

INVITED TALK

2014: Invited talk at the Max-Planck-Institute for marine microbiology, Department of Symbiosis.

TEACHING EXPERIENCE & SUPERVISION

- 2012-2015: supervision of 3 master students.
- 2007 - 2010: Undergraduate courses (192H) in Evolutive Biology, Cell Biology and Scientific methodology.

LANGUAGES

French (native) – English (fluent) – German (intermediary, B1) – Spanish (basic)

AWARD

« Outstanding Student Award for Academic Achievement » obtained at the 61st annual conference of the **Gulf Caribbean Fisheries Institute**

REVIEWING

Reviewer for: Microscopy Research and Techniques, Aquatic Biology, African Journal of Biotechnology, Symbiosis.

MISCELLANEOUS

Driver's license, scuba diver (PADI advanced & CMASS **), snorkeling. Time lapse photography.

List of publications

PEER REVIEWED PUBLICATIONS:

- **B. Bayer, J. Vojvoda, P. Offre, R.J.E. Alves, N.H. Elisabeth, J.A.L. Garcia, J-M. Volland, A. Srivastava, C. Schleper, and G.J. Herndl. 2016** Physiological and genomic characterization of two novel marine thaumarchaeal isolates indicate putative niche differentiation. *ISME*. 10(5): 1051-1063.
- **Enriquez-Diaz M.R., Volland J-M., Chavez-Villegas J.F., Aldana-Aranda D & Gros O. 2014** Development of the planktotrophic veligers and newly metamorphosed juveniles of *Strombus pugilis* (mollusca: gastropoda). *Journal of Molluscan Studies*. 81 (3): 335-344
- **Bright M., Espada-Hinojosa S., Lagkouvardos I & Volland J-M. 2014** The giant ciliate *Zoothamnium niveum* and its thiotrophic epibiont *Candidatus Thiobios Zoothamnicoli*: a model system to study interspecies cooperation. *Frontiers in Microbiology – Microbial symbioses*. 5: 145.
- **Volland J-M., Gros O. 2012.** Cytochemical investigation of the digestive gland of two Strombidae species (*Strombus gigas* and *S. pugilis*) in relation to the nutrition. *Microscopy research and Techniques*. 75: 1353-1360.
- **Volland J-M., Lechaire J-P., Frebourg G., Aldana Aranda D., Ramdine G., and Gros O. 2012.** Insight of EDX analysis and EFTEM: Are spherocrystals located in Strombidae digestive gland implied in detoxification of trace-metals. *Microscopy research and Techniques*. 75: 425-432.
- **Volland J-M., Frenkiel L., Aldana Aranda D. & Gros O. 2009.** Occurrence of Sporozoa-like microorganisms in the digestive gland of various species of Strombidae. *Journal of Molluscan Studies* 76 (2): 196-198.

BOOK REVIEW

- **Volland Jean-Marie. 2014.** Scanning Electron Microscopy for the Life Sciences H. Schatten (ed.) New York: Cambridge University Press, 2013. 298pp. ISBN: 978-0-521-19599-7. Hardback: US\$120. MARINE ECOLOGY. DOI: 10.1111/maec.12222

CONFERENCE PROCEEDINGS

- **Volland J-M., Gros O., Frenkiel L., Aldana Aranda D.** Apicomplexan parasite in the digestive gland of various species of the family Strombidae: *Strombus costatus*, *S. gigas*, and *S. pugilis*. Proceedings of the GCFI congress. *In press*.
- **Volland J-M., Frenkiel L., Aldana Aranda D. & Gros O.** 2008. Detection of Apicomplexa like parasites in two species belonging to the family Strombidae: *Strombus gallus*, Linnaeus, 1758 and *S. raninus*, Gmelin 1791. Proceedings of the GCFI congress. 61: 503-505.