

# CURRICULUM VITAE

## François Rigal, PhD

### Personal Information

Date of birth: February 02, 1980

Place of birth: Nîmes, France

Nationality: French

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### Education

**October 2005 – April 2009: PhD, Biological Station of Roscoff - CNRS – University of Pierre and Marie Curie, Paris 6** (France). Title: Spatio-temporal dynamics of larval pool of the introduced gastropod *Crepidula fornicata* in a megatidal Bay, the Bay of Morlaix (France). Supervisors: Dr. Frédérique Viard and Dr. Thierry Comtet (Team Diversity and Connectivity in Coastal Marine Landscapes).

**September 2004 – July 2005: Master's degree of Biology: Gene, Cell, Development and Evolution. University of Orsay, Paris 11** (France). Thesis title: Search for taxonomic and populational units of the polychaete annelids *Sabellaria alveolata*: implication in biogenic reefs conservation. Biological Station of Roscoff - CNRS - University of Pierre and Marie Curie, Paris 6. Supervisor: Dr. Frédérique Viard (Team Diversity and Connectivity in Coastal Marine Landscapes).

**September 2003 – July 2004.** Year of specialization at the University of Montpellier (France). Project: Osmoregulation as a potential factor for the differential distribution of two cryptic gobiid species, *Pomatoschistus microps* and *P. marmoratus* in French Mediterranean lagoons. Supervisors: Pr. Patrick Berrebi and Pr. Guy Charmatier (Lagunar Ecosystems Laboratory).

**September 2001 - June 2003.** Bachelor's degree of Biology, University of Rennes, (France).

**September 2000 - June 2001.** Two-year University degree, University of South Brittany, Lorient (France).

**September 1998 – June 2000.** Engineering school, University of Compiègne (France).

### Current Position

**December 2012 - present.** Postdoctoral fellow at the Azorean Biodiversity Group (University of Azores, Portugal). Project: Biodiversity on oceanic islands: towards a unified theory.

### Previous Positions Since PhD

**September 2010 – November 2012.** Postdoctoral fellow at the Azorean Biodiversity Group (University of Azores, Portugal). Project: Predicting extinctions on islands: a multi-scale assessment.

**September 2009 – August 2010.** Temporary lecturer at the University of Pierre and Marie Curie, Paris 6. Affiliated to the Research Team: Structure, modelling and functioning of aquatic food webs. National Natural History Museum. Teaching: Bio-statistic.

**2008.** PhD fellowship. French Ministry for Higher Education and Research Grants.

## Teaching Activities

**September 2009 – August 2010. Teaching in biostatistics** (Temporary lecturer at the University of Pierre and Marie Curie, Paris 6). Courses for undergraduate sections, 1<sup>st</sup> and 2<sup>nd</sup> year of Master's degree of Marine Science, Ecology and Evolutionary Biology and Cellular and Molecular Biology (Total of 200h).

- 2009 – 2014. Invited courses.** Initiation to biostatistics and to the software R: Course and practical course in:
- December 2009: Laboratory of Vegetal Biology and Pathology of University of Nantes (France)
  - June 2011: French Research Institute for Exploitation of the Sea, IFREMER (La Réunion Island, France)
  - May 2009: University of Mostaganen (Algeria)
  - May 2009: National Research Centre for the Development of Fisheries and Aquaculture, CNRDPA (Algeria)
  - Plus several short courses in the University of Azores (Portugal) and the University of Athens (Greece)

## Organisation Of Scientific Meetings

**September 2012.** Organizer of the workshop: "Computing functional diversity - A brief travel in a burgeoning literature" for XV Iberian Congress of Entomology (Univ. Azores, Portugal).

## Editorial activities:

Referee for:

- *Journal of Natural History*
- *Ecography*
- *Journal of Biogeography*
- *Continental Shelf Research*
- *PlosOne*
- *Proceedings of the Royal Society of London B*
- *Ecological Indicators*
- *Bulletin de la Société Zoologique de France.*

## Scientific communications:

### Publications in peer-reviewed with impact factor (SCI, ISI)

1. **Rigal F.**, Chevalier T., Nebel C., Charmantier G., Tomasini J-A, Aujoulat F. & Berrebi P. (2008). Osmoregulation as a potential factor for the differential distribution of two cryptic gobiid species, *Pomatoschistus microps* and *P. marmoratus* in French Mediterranean lagoons. *Scientia Marina*. 72 (3) 469-476.
2. **Rigal, F.**, Viard, F., Ayata, Sd., & Comtet, T. (2010) Does larval supply explain the low proliferation of the invasive gastropod *Crepidula fornicata* in a tidal estuary? *Biological Invasions*. 12 (9) 3171-3186.
3. Mortillaro, J-M, **Rigal, F.**, Rybarczyk, H., Bernardes, M., Abril, G. & Meziane, T. (2012) Particulate organic matter distribution along the Lower Amazon River: addressing aquatic ecology concepts using fatty acids. *PloS ONE* 7(9): e46141. doi:10.1371/journal.pone.0046141
4. Fattorini, S., Cardoso, P., **Rigal, F.** & Borges, P.A.V. (2012) Use of Arthropod rarity for area prioritisation: Insights from the Azorean Islands. *PLoS ONE* 7(3) e33995
5. **Rigal, F.**, Whittaker, R.J., Triantis, K.A. & Borges, P.A.V (2013). Integration of non-indigenous species within the interspecific abundance– occupancy relationship. *Acta Oecologica* 48 :69-75
6. Cardoso, P.\*, **Rigal, F.\***, Fattorini, S. Terzopoulou, S. & Borges, P.A.V. (2013). Integrating landscape disturbance and indicator species in spatial conservation analysis. *Plos ONE* 8(5): e63294. \*Equal contribution

7. Parmakelis, A., Balanika, K., Terzopoulou, S., **Rigal, F.**, Beasley, R.R., Jones, K.L., Lance, S.L., Whittaker, R.J., Triantis, K.A. & Borges, P.A.V. (2013). Development of 28 polymorphic microsatellite markers for the endemic Azorean spider *Sancus acoreensis* (Araneae, Tetragnathidae). *Conservation Genetic resources*. 5 (4) 1133-1134
8. Kotsakiozi, P., **Rigal, F.**, Valakos, E. & Parmakelis, A. (2013). Decomposing the effects of intra-species variability, phylogeny, space and climate on the evolution of shell morphology: insights from the Greek endemic land snail genus *Codringtonia* Kobelt 1898 (Gastropoda, Pulmonata, Helicidae). *Biological Journal of the Linnean Society*. 110 (4) 796-813
9. Cardoso, P., **Rigal, F.**, Carvalho, J.C., Fortelius, M., Gaspar, C., Borges, P.A.V. Podani, J. & Schmera, D. (2014) Partitioning taxon, phylogenetic and functional beta diversity into replacement and richness difference components. *Journal of Biogeography*. 41 (4) 749–761
10. Cardoso, P., **Rigal, F.**, Borges, P.A.V. & Carvalho, J.C. (2014) A new frontier in biodiversity inventory: a proposal for estimators of phylogenetic and functional diversity. *Methods in Ecology and Evolution*. 5 (5) 452 – 461
11. Matthews, T.J., Borregaard, M.K., Ugland, K.I., Borges, P.A.V., **Rigal, F.**, Cardoso, P., & Whittaker, R.J. (2014). The gambin model provides a superior fit to species abundance distributions with a single free parameter: evidence, implementation and interpretation. *Ecography*. 37 (10) 1002-1011
12. Whittaker, R.J., **Rigal, F.**, Borges, P.A.V., Cardoso, P., Terzopoulou, S., Casanoves, F., Pla, L., Guilhaumon, F., Ladle, R.J. & Triantis, K.A. Functional biogeography of oceanic islands: scaling of functional diversity in the Azores. *Proceedings of the National Academy of Sciences of USA* 111 (38) 13709–13714.
13. Cardoso, P., **Rigal, F.** & Carvalho, J.C. BAT - Biodiversity Assessment Tools, an R package for the measurement and estimation of alpha and beta taxon, phylogenetic and functional diversity. *Methods in Ecology and Evolution*. 6 (2) 232-236
14. Terzopoulou, S., **Rigal, F.**, Whittaker, R.J., Borges, P.A.V. & Triantis, K.A. Drivers of extinction: the case of Azorean beetles. *Biology Letters (in Press)*

#### Non-peer reviewed publications:

1. Borges P.A.V., Cardoso P., Guerreiro O., **Rigal F.**, Florencio M., Amorim I.R., Borda-De-Agua L., Cascalho J., Ferreira M. (2013). Perspectives and progress of ecology and conservation science in the Azores: the possible contribution of Artificial Intelligence. In: Luis Correia, Luis Paulo Reis, José Cascalho, Luis Gomes, Hélia Guerra Pedro Cardoso (Eds.) *Advances in Artificial Intelligence Local Proceedings*, EPIA2013 CMATI, pp. 41-44. Universidade dos Açores, Portugal.
2. Borges, P.A.V., Amorim, I.R., Andre, G., Cardoso, P., Crespo, L.C., Gaspar, C., Hortal, J., Melo, C., Pereira, F., Quartau, J.A., Rego, C., Ribeiro, S.P., **Rigal, F.**, Santos, A.M.C., Serrano, A.R.M., Soares, A.O., Sousa, A.B., Triantis, K.A. & Vieira, V. (2013). Biodiversidade dos artrópodes dos Açores. *Pingo de Lava*, 37: 46-51

#### Oral presentations at conferences:

1. **Rigal, F.**, Viard, F. & Comtet, T. (2007) Is larval release at low temperature a waste? An investigation in the invasive slipper limpet *Crepidula fornicata*. 42nd European Marine Biology Symposium. Kiel, Germany.
2. **Rigal, F.**, Comtet, T. & Viard, F. (2008) Influence of field temperature variations on pelagic larval duration in the invasive gastropod *Crepidula fornicata*: Implications on population connectivity. 2008 Ocean Sciences Meeting, Orlando, Florida.
3. **Rigal, F.** ; Viard, F. & Comtet, T. (2008) Spatial variability of larval abundance and size structure in the invasive gastropod *Crepidula fornicata*: larval transport and dilution effects at a bay scale. 8th Larval Biology Symposium, Lisbon, Portugal.

4. Mortillaro J.M., **Rigal F.**, Rybarczyk H., Brugel S., Artigas L., Bernardes M., Meziane T. (2010). Fatty acids characterization of organic matter in several Varzea lakes in the Amazon basin. AGU meeting of the America. Foz de iguazu. August (Brazil)
5. **Rigal, F.**, Triantis, K.A., Cardoso P., Whittaker, R.J., Borges, P.A.V. (2012) Functional diversity and conservation biogeography on oceanic islands: indigenous and exotic spiders of Azores. XV Iberian congress of entomology (Univ. Azores).
6. **Rigal, F.**, Triantis, K.A., Gaspar, C., Whittaker, R.J., Mendonca, E.F.E.P., Borges, P.A.V., Cardoso, P. (2012) Functional diversity in an oceanic island: Disentangle the impact human disturbance. XV Iberian congress of entomology (Univ. Azores).

**Posters presentations at conferences:**

1. **Rigal, F.**, Viard, F. & Comtet, T. (2007). Variability of the pelagic larval duration in the invasive *Crepidula fornicata*: influence of the temperature and implications for the dispersal potential. Invasions Biologiques, 2<sup>ème</sup> rencontres francophones, Rennes.
2. Viard, F., Tanguy, A. Dreanno, C., **Rigal, F.**, Le Cam, S., Daguin, C. & Comtet, T. (2007) Ecological and genomic investigations of larval metamorphosis and recruitment in the invasive European species, *Crepidula fornicata*. 1st Marine Genomics International Conference, Sorrento, Italy.
3. Comtet, T; Edmond, F; **Rigal, F**; Viard, F. (2008) Feeding in larvae of the invasive gastropod *Crepidula fornicata* (L.) during non-bloom periods: potential use of picophytoplankton. 8<sup>th</sup> Larval Biology Symposium, Lisbon, Portugal.
4. Thiebaut, E., Ayata, S. D., Beaugrand, G., Jollivet, D., Jolly, M. T., Lazure, P., **Rigal, F.** & Viard, F. (2008) Worms and global change: why could climatic changes alter marine population connectivity at different temporal scales? 2008 Ocean Sciences Meeting, Orlando, Florida
5. **Rigal, F.**, Whittaker, R.J., Triantis, K.A. & Borges, P.A.V (2011). Interspecific abundance-occupancy Relationship remaining stable across islands fro epigaeic arthropods : is the community at equilibrium? 5th Biennial Meeting for the International Biogeographic Society. Heraklion, Greece.
6. Amorim, R.I, Emerson, B.C., **Rigal, F.**, Borges, P.Av. (2012) Diversification of Hipparchia butterflies of the Macaronesian archipelagos: insights from a multigene molecular phylogenetic analysis. XV congrès ibérique d'entomologie (Univ. Açores, Portugal)
7. Borges, P.A.V., **Rigal, F.**, Rego, C., Crespo, L., Cardoso, P., Gaspar, C., Mendonça, E., Terzopoulou, S., Amorim, R.I., Hortal, J., Pereira, F., Santos, A.M.C, Serrano, A.M. Parmakelis, A., Whittaker, R. & Triantis, K.A. (2013). Temporal change in arthropod forest assemblages in the Azores: contrasting response in predators and herbivores. 6<sup>th</sup> Biennial Meeting for the International Biogeographic Society. Miami, Florida, USA.
8. Whittaker, R., **Rigal, F.**, Borges, P.A.V., Cardoso, P., Terzopoulou, S., Casanoves, F., Pla, L., Guilhaumon, F., Ladle, R. & Triantis, K. (2013). Non-native species extend the functional diversity of Azorean island in- vertebrate assemblages. 6<sup>th</sup> Biennial Meeting for the International Biogeographic Society. Miami, Florida, USA.
9. **Rigal, F.**, Amorim, I., Santos, A.M.C., Triantis, K.A., Whittaker, R.J., Borda-de-Água, L., Hortal, J., Emerson, B.C., Borges, P.A.V., Parmakelis, A. (2014). Global patterns of diversification on oceanic islands. Hawaii, Island biology congress.
10. Florencio, M., Lobo, J., Cardoso, P., **Rigal, F.**, Almeida-Neto, M., de Azevedo, E.B., Borges, P.A.V. (2014) Biotic homogenisation and resistance to invasions on oceanic islands. Hawaii, Island biology congress.
11. Liu, Y., Shen, Z., **Rigal, F.**, Wang, Z., Triantis, K.A. (2015). The relationships between local abundance, range size and niche breadth of woody plant species in a mountain context. 7<sup>th</sup> Biennial Meeting for the International Biogeographic Society. Bayreuth, Germany.

12. **Rigal, F.**, Amorim, I., Santos, A.M.C., Triantis, K.A., Whittaker, R.J., Borda-de-Água, L., Hortal, J., Emerson, B.C., Borges, P.A.V. & Parmakelis, A. (2015). Global patterns of diversification on oceanic islands. 7<sup>th</sup> Biennial Meeting for the International Biogeographic Society. Bayreuth, Germany.
13. Triantis, K.A., **Rigal, F.**, Parent, C., Cameron, R.A.D., Lenzner, B., Parmakelis, A., Yeung, M.W., Ibáñez, M., Alonso, M.R., de Frias Martins, A.M., Teixeira, D.N.F., Griffiths, O.L., Yanes, Y., Hayes, K.A., Preece, R.C. & Cowie, R.H. (2015). Morphological and taxonomical diversity patterns of oceanic archipelagos. 7<sup>th</sup> Biennial Meeting for the International Biogeographic Society. Bayreuth, Germany.
14. Terzopoulou, S., **Rigal, F.**, Whittaker, R.J., Borges, P.A.V. & Triantis, K.A. (2015). 7<sup>th</sup> Biennial Meeting for the International Biogeographic Society. Bayreuth, Germany.