

Florent Mazel

Department of Botany
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Employment

University of British Columbia, Vancouver, BC Canada | Sept. 2017 – Present
Postdoctoral fellow. Supervisor: Dr. L. Parfrey

Simon Fraser University, Burnaby, BC Canada | Sept. 2016 – August. 2017
Postdoctoral fellow. Supervisor: Dr. A. Mooers

Université Grenoble Alpes, France | January. 2016 – August. 2016
Postdoctoral fellow. Supervisor: Dr. W. Thuiller

Education

Université Grenoble Alpes, France | Sept. 2012 – Dec. 2015
PhD in Biodiversity, Ecology and Environment
Title: Understanding and protecting vertebrate diversity worldwide
Supervisor: W. Thuiller

École Normale Supérieure de Lyon, France | Sept. 2007 – Sept. 2012
Master in Biology | Sept. 2008 – Sept. 2012
Geology and Biology teaching certificate ('Agrégation') | Sept. 2009 – Sept. 2010
B. Sc Honours in General Biology | Sept. 2005 – Sept. 2008

Computational skills

R, GIS, GitHub, bash, working with clusters and parallel computing

Publications

- 22. Mazel, F.**, Pennell, M. W., Cadotte, M. W., Diaz, S., Dalla Riva, G. V., Grenyer, R., ... & Pearse, W. D. (2019). Reply to: "Global conservation of phylogenetic diversity captures more than just functional diversity". *Nature communications*, *10*(1), 858.
- 21. Louca, S., Mazel, F.**, Doebeli, M., & Parfrey, L. W. (2019). A census-based estimate of Earth's bacterial and archaeal diversity. *PLoS biology*, *17*(2), e3000106.
- 20. Mazel, F.**, Davis, K. M., Loudon, A., Kwong, W. K., Groussin, M., & Parfrey, L. W. (2018). Is Host Filtering the Main Driver of Phyllosymbiosis across the Tree of Life? *mSystems*, *3*(5), e00097-18.
- 19. Vonaesch, P., Morien, E., Andrianonimiadana, L., Sanke, H., Mbecko, J. R., Huus, K. E., Mazel, F., [...] & Sansonetti, P.** (2018). Stunted childhood growth is associated with decompartmentalization of the gastrointestinal tract and overgrowth of oropharyngeal taxa. *Proceedings of the National Academy of Sciences*, *115*(36), E8489-E8498.
- 18. Olhmann M.*, Mazel, F.**, Chalmandrier, L., Bec, S., Coissac, E., Gielly, L., Pansu, J., Taberlet, P., Zinger, L., Chave, J. & Thuiller, W. (2018). Mapping the imprint of biotic interactions on β -diversity. *Ecology letters*, *21*(11), 1660-1669. ***supervised student**
- 17. Mazel, F.**, Pennell, M., Cadotte, M., Diaz, S., Dalla Riva G.V., Grenyer, R., Leprieur, F., Mooers, A., Mouillot, D., Tucker, D., & Pearse, W. (2018). Prioritizing phylogenetic diversity captures functional diversity unreliably. *Nature communications*, 2018, *9*(1), 2888.
- 16. Louca, S., Polz, M., Mazel, F.**, Albright, M., Huber, J., O'Connor, M., Ackermann, M., Hahn, A., Srivastava, D., Crowe, S., Doebeli, m., & Parfrey, L. (2017). Function and functional redundancy in microbial systems. *Nature Ecology and Evolution*, *2*, 936-943.

15. **Mazel, F.**, Wüest, R. O., Lessard, J.P., Renaud, J., Ficetola, G.F., Lavergne S. & Thuiller W. (2017). Global patterns of β -diversity along the phylogenetic timescale: the role of climate and plate tectonics. *Global Ecology and Biogeography*, 26(10), 1211-1221.
14. **Mazel, F.**, Mooers A., Dalla Riva G.V., Pennell, M. (2017) Conserving Phylogenetic Diversity (PD) Can Be a Poor Strategy for Conserving Functional Diversity. *Systematic Biology*, 66(6), 1019-1027.
13. **Mazel, F.**, Wüest, R. O., Gueguen, M., Renaud, J., Ficetola, G. F., Lavergne, S., & Thuiller, W. (2017). The geography of ecological niche evolution in mammals. *Current Biology*: 27(9), 1369–1374.
12. Groussin M.*, **Mazel, F.***, Sanders J., Smillie C., Lavergne S., Thuiller, W. & Alm E. Unraveling the processes shaping mammalian gut microbiomes over evolutionary time (2017). *Nature Communications*, 8, 14319. *co-first authors
11. Ficetola, G.F., **Mazel, F.** & Thuiller, W. (2017). Global determinants of zoogeographical boundaries. *Nature Ecology & Evolution*, 1, 0089.
10. Tucker, C. M., Cadotte, M. W., Carvalho, S. B., Davies, T. J., Ferrier, S., Fritz, S. A., Grenyer, R., Helmus, M. R., Jin, L. S., Mooers, A. O., Pavoine, S., Purschke, O., Redding, D. W., Rosauer, D. F., Winter, M. and **Mazel, F. [senior author]** (2017), A guide to phylogenetic metrics for conservation, community ecology and macroecology. *Biological reviews*, 92, 698-715
9. **Mazel, F.**, Davies, T. J., Georges, D., Lavergne, S., Thuiller, W. and Peres-Neto, P. R. (2016), Improving phylogenetic regression under complex evolutionary models. *Ecology*, 97: 286–293.
8. **Mazel, F.**, Davies, T. J., Gallien, L., Renaud, J., Groussin, M., Münkemüller, T. and Thuiller, W. (2015), Influence of tree shape and evolutionary time-scale on phylogenetic diversity metrics. *Ecography*, 39, 913-920
7. **Mazel F.**, Renaud J., Guilhaumon F., Mouillot D., Gravel D. & Thuiller W. (2015) Mammalian phylogenetic diversity area relationships at a continental scale. *Ecology*, 96(10), 2814-2822
6. Thuiller, W., Maiorano, L., **Mazel, F.**, Guilhaumon, F., Ficetola, G.F., Lavergne, S., Renaud, J., Roquet, C. and Mouillot, D. (2015). Conserving the functional and phylogenetic trees of life of European tetrapods. *Phil. Trans. of the Royal Society of London B: Biological Sciences*, 370(1662), 20140005.
5. Redding, D.W., **Mazel, F.**, and A.O. Mooers. Measuring evolutionary isolation for conservation. (2014). *PLoS One* 9(12), e113490.
4. Gallien, L., **Mazel, F.**, Lavergne, S., Renaud, J., Douzet, R. & Thuiller, W. (2014). Contrasting the effects of environment, dispersal and biotic interactions to explain the distribution of invasive plants in alpine communities. *Biological Invasions*, 17, 1407-1423.
3. **Mazel, F.**, Guilhaumon, F., Mouquet, N., Devictor, V., Gravel, D., Renaud, J., Cianciaruso, M.V., Loyola, R.D., Diniz-Filho, J.A.F., Mouillot, D. & Thuiller, W. (2014) Multifaceted diversity-area relationships reveal global hotspots of mammalian species, trait and lineage diversity. (2014). *Global Ecology and Biogeography*, 23, 836–847.
2. Chalmandrier, L., Münkemüller, T., Gallien, L., de Bello, F., **Mazel, F.**, Lavergne, S., Thuiller, W. (2013). A family of null models to distinguish between habitat filtering and biotic interactions in functional diversity patterns. *Journal of Vegetation Science*, 24, 853–86.
1. Bello, F. D., Lavorel, S., Lavergne, S., Albert, C. H., Boulangeat, I., **Mazel, F.**, & Thuiller, W. (2012). Hierarchical effects of environmental filters on the functional structure of plant communities: a case study in the French Alps. *Ecography*, 36(3), 393-402.

Book Chapter

1. **Mazel, F.** & Thuiller, W. Functional and phylogenetic diversity area relationships. (Accepted). In: Diversity area relationships, Edited by T. Matthews and R. Whittaker Ecology, Biodiversity and Conservation Series, Cambridge University Press

Presentations

- The evolution of mammals and their gut microbiomes.**
 ISME 17 conference, Leipzig, Germany (Talk) | August 2018
 Microbiome Seminar series, UBC, BC, Canada (Invited talk) | November 2017

Bliss Seminar, Beaty Biodiversity Center (Invited Talk) | September 2017
Brinkman Lab seminars, Simon Fraser University, Canada (Invited talk) | December 2016
The Crawford Lab seminar, Simon Fraser University, Canada (Invited talk) | November 2016

Phylogenetic Diversity Can Be a Poor surrogate for Functional Diversity

Canadian ecological society meeting, Victoria, Canada (Talk) | May 2017

The geography of ecological niche evolution in mammals.

Evolution conference, Montpellier, France (Talk) | August 2018
International Biogeography Meeting, Tucson, Arizona (Talk) | January 2017
Young National History Scientists Meeting, Paris, France (**Best Talk**) | February 2016
Evolutionary Science Institute talk, Montpellier, France (Invited talk) | July 2016
Madrid Natural History Museum Conference, Madrid, Spain (Invited talk) | April 2016

Improving phylogenetic regression under complex evolutionary models.

Statistical ecology workshop, Lyon, France (Talk) | March 2015

Mammalian phylogenetic diversity area relationships at a continental scale.

European ecological society conference, Rome, Italy (Invited symposium) | September 2015
British and French, Ecological society Meeting, Lille, France (Talk) | December 2014

Outreach

Microbiology

Gut microbiome evolution and human health. M. Groussin* et **F. Mazel*** (December 2017).
Medecine/Science. Inserm. 33 (12), 1038-1042. ***co-first authors**

Evolutionary Biology

Héritage ou convergence? Les chemins sinueux de l'évolution des espèces (2016). L'encyclopédie de l'environnement (institutional website). Université Grenoble-Alpes (<http://www.encyclopedie-environnement.org/vivant/heritage-convergence-chemins-sinueux-de-levolution-especes/>). **F. Mazel** et al.

Geology

Traces de dinosaures et ptérosaures du synclinal de Torotoro, Bolivie. (2014). Planet-terre (institutional website). École Normale Supérieure de Lyon. ***co-first authors** <http://planet-terre.ens-lyon.fr/article/piste-dinosaure-Torotoro.xml>. **F. Mazel** et al.

Teaching

Lectures

Biogeography [Master students, Grenoble University] | 2015
Histology and Anatomy of Plants [1st year Undergrad students, Grenoble University] | 2015
Fermented food microbiology [Undergrad students, UBC] | 2019

Tutorial classes

Ecology [2nd year Undergrad students, Grenoble University] | 2012-2015
Taxonomy of soil fauna [2nd year Undergrad students, Grenoble University] | 2012-2015
Population genetics [Master students, Grenoble University] | 2013
Population ecology [2nd year Undergrad students, Grenoble University] | 2013

Practical classes

Histology and Anatomy of Plants [1st year Undergrad students, Grenoble University] | 2012-2015

Fields classes

General Ecology [2nd year Undergrad students, Grenoble University] | 2012-2014

(Co-)Supervision

Master students

V. Pourfaraj (SFU) | 2016. Co-supervision with A. Mooers

A. Biega (SFU) | 2016. Co-supervision with A. Mooers
M. Ohlmann (LECA) | 2015. Co-supervision with W. Thuiller
S. Knipping (LECA) | 2014. Co-supervision with W. Thuiller

PhD students

L. Davidson (SFU) | April 2016 – Present. Co-Supervision of one thesis chapter
K. Davies (UBC) | Sept 2016 – Present. Co-supervision with L. Parfrey
V. Billy (UBC) | Sept 2016 – Present. Co-supervision with L. Parfrey

Services

Field work assistant

Tropical ecology | 2010, 3 months.

Supervisor: Jérôme Chave [Nouragues Research Station, French Guyana]

Austral ecology | 2010, 3 months

Supervisor: Ricardo Rozzi [Puerto Williams, Chile]

Alpine ecology | 2007, 3 months

Supervisor: by W. Thuiller [Grenoble, France]

Expert reviewer | 2014—Present

Manuscripts in *Ecology Letters*, *Global Ecology and Biogeography*, *Functional Ecology*, *Ecography*, *Molecular Ecology*, *Methods in Ecology and Evolution*, *Microbiome*

Travel grant applications: University of British Columbia zoology travel grant applications (2018)

Conference abstracts: International Biogeographical Society 2019 meeting (2018)

Grant application: Post-doc grant application for iDIV (Leipzig, Germany; 2018).

Executive Member

UBC Post-Doc association | Dec 2017—Present

UBC Sailing club | April 2019—Present

Committee member

Master thesis defences University Grenoble Alpes (2015-16, 6 students); University of British Columbia (2018, 1 student)

Judge

Posters: Botany dept research day, University of British Columbia (2018); Microbiome insights research day, University of British Columbia (2018)

Talks: The Pacific Ecology and Evolution Conference (2017)

Trainee workshop organizer

Microbiome diversity analysis – Microbiome Network workshops (2 days) | 2018

Assistant for diverse R workshops

Species Distribution models in R – Grenoble University Summer school (1 day) | 2014

R basics tutorials – UBC (1 day) | 2019

Working group

sPHY – Synthesizing phylogenetic measures for ecology and conservation | 2015

sCAP – Testing the conservation value of phylogenetic diversity | 2017

The Bee Microbiome Consortium | 2018

Awards & Grants

2018 | Travel grant to go present my work at IDIV (Leipzig, Germany) (\$ 1000)

2018 | Banting Postdoctoral fellowship (\$ 150 000)

2018 | Research allowance from UBC (\$ 10 000)

2018 | Microbiome Research Network workshop grant (\$ 8000)

2018 | Travel grant – Society for the Study of Evolution (\$ 500)
2016 | Travel grant – International Biogeography Society (\$ 1000)
2012 | PhD fellowship – Ecole Normale Supérieure (€ 76 000)
2007 | Bachelor and Master fellowship – Ecole Normale Supérieure (€ 80 000)

Membership

French Ecological Society | 2016—Present
International Biogeography Society | 2017—Present
Society for the Study of Evolution | 2018—Present
American Microbiology society | 2018—Present
International Society for Microbial Ecology | 2018—Present