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Born: May 21, 1988—Grenoble, France
Nationality: French

Educational background

2006-2009 B.S. *Biology and Population Ecology* – University of Lyon
2010-2011 M.S. *Ecology, Evolution and Biometry* – University of Lyon
2013-2016 Ph.D. *Biodiversity, Ecology and Environment* – University of Grenoble-Alpes

Professional experience

2016- Postdoc (Swedish University of Agricultural Sciences, Uppsala, Sweden).
Diatom ecological niches and community structure.

2013-2016 Ph.D. degree (CARTELE, University of Grenoble-Alpes, France).
Assessing the links between phylogeny and ecological traits: new perspective for rivers bioassessment.

2012 Ecological engineer (Charpentier Consultants, Montluel, France).
Digital cartography of wetlands, methodological development.

2011 Ecological engineer (LEHNA, University of Lyon, France).
Analyses of ecological data as part of the Rhône river restoration project.

2011 Internship (LEHNA, University of Lyon, France).
Meta-analysis of nutrient limitation in rivers and streams.

2008 Internship (Charpentier Consultants, Trévoux, France).
Impact study as part of the Saône river restoration.

Scientific activity

JOURNAL ARTICLES

- 2017 Keck, F., Vasselon, V., Tapolczai, K., Rimet, F., and Bouchez, A. (2017). Freshwater biomonitoring in the Information Age. *Frontiers in Ecology and the Environment* 15.5, pp. 266–274
- 2017 Esteves, S. M., Keck, F., Almeida, S. F. P., Figueira, E., Bouchez, A., and Rimet, F. (2017). Can we predict diatoms herbicide sensitivities with phylogeny? Influence of intraspecific and interspecific variability. *Ecotoxicology*, pp. 1–13
- 2016 Keck, F., Rimet, F., Franc, A., and Bouchez, A. (2016). Phylogenetic signal in diatom ecology: Perspectives for aquatic ecosystems biomonitoring. *Ecological Applications* 26.3, pp. 861–872
- 2016 Keck, F., Rimet, F., Bouchez, A., and Franc, A. (2016). phylosignal: an R package to measure, test, and explore the phylogenetic signal. *Ecology and Evolution* 6.9, pp. 2774–2780
- 2016 Keck, F., Bouchez, A., Franc, A., and Rimet, F. (2016). Linking phylogenetic similarity and pollution sensitivity to develop ecological assessment methods: a test with river diatoms. *Journal of Applied Ecology* 53.3, pp. 856–864
- 2016 Rimet, F., Chaumeil, P., Keck, F., Kermarrec, L., Vasselon, V., Kahlert, M., Franc, A., and Bouchez, A. (2016). R-Syst::diatom: an open-access and curated barcode database for diatoms and freshwater monitoring. *Database* 2016, baw016
- 2016 Chonova, T., Keck, F., Labanowski, J., Montuelle, B., Rimet, F., and Bouchez, A. (2016). Separate treatment of hospital and urban wastewaters: A real scale comparison of effluents and their effect on microbial communities. *Science of The Total Environment* 542, pp. 965–975
- 2014 Larras, F., Keck, F., Montuelle, B., Rimet, F., and Bouchez, A. (2014). Linking Diatom Sensitivity to Herbicides to Phylogeny: A Step Forward for Biomonitoring? *Environmental Science & Technology* 48.3, pp. 1921–1930
- 2012 Lepori, F. and Keck, F. (2012). Effects of Atmospheric Nitrogen Deposition on Remote Freshwater Ecosystems. *AMBIO: A Journal of the Human Environment* 41.3, pp. 235–246
- 2012 Keck, F. and Lepori, F. (2012). Can we predict nutrient limitation in streams and rivers? *Freshwater Biology* 57.7, pp. 1410–1421

SELECTED PRESENTATIONS

- 2015 9th Symposium for European Freshwater Sciences (2015, Geneva, Switzerland). Linking phylogenetic similarity and pollution sensitivity to develop ecological assessment methods: a test with diatoms.
- 2015 9th Use of Algae for Monitoring Rivers and comparable habitats (2015, Trentino, Italy). Developing phylogenetically based biomonitoring methods: a test with diatoms.
- 2014 Joint Aquatic Sciences Meeting (2014, Portland, Oregon). Linking Diatoms Ecological Preferences To Phylogeny: New Perspectives for Aquatic Ecosystems Bioassessment.

- 2013 7th CE Diatoms meeting (2013, Thonon-les-Bains, France). Linking diatoms pollution-sensitivity to phylogeny: New perspectives for aquatic ecosystems bioassessment. Award of the best student presentation.
- 2011 7th Symposium for European Freshwater Sciences (2011, Gerona, Spain). Can we predict nitrogen limitation in streams and rivers? A meta-analysis.

SOFTWARE DEVELOPMENT

Lead developer of two R packages available on CRAN:

- *rleafmap*: interactive maps with R and leaflet.
- *phylosignal*: assessing and exploring the phylogenetic signal with R.

Invited at the R hackathon Hackout 2: Graphical Resources for Infectious Disease Epidemiology in R (Imperial College, London, 2015). Co-developer of the package *epimap*.

AWARDS

- 2013 Award of the best student presentation. 7th Central European Diatoms Meeting.
- 2017 Ph.D. thesis award. University of Grenoble-Alpes (1500 €).

Technical Skills

Advanced statistics and programming with R: Hypothesis testing, multivariate statistics, modelling...

GIS and spatial analysis: ArcGIS, QGIS and R (sp, gstat, spatstat...)

Database: MS Access, MySQL (basics)

Phylogenetics: PhyML, RAxML, MrBayes and R (ape, adephylo, picante...)

Text processing: MS Office and OpenOffice, L^AT_EX, HTML

Image editing and processing: Photoshop/Gimp, Illustrator/Inkscape, ImageJ

References

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Last updated: July 17, 2017