

François Keck

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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

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

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

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

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

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

Scientific activity

JOURNAL ARTICLES

- 2012a F. Lepori and F. Keck (2012). "Effects of Atmospheric Nitrogen Deposition on Remote Freshwater Ecosystems". In: *AMBIO: A Journal of the Human Environment* 41.3, pp. 235–246
- 2012b F. Keck and F. Lepori (2012). "Can we predict nutrient limitation in streams and rivers?" In: *Freshwater Biology* 57.7, pp. 1410–1421
- 2014 F. Larras et al. (2014). "Linking Diatom Sensitivity to Herbicides to Phylogeny: A Step Forward for Biomonitoring?" In: *Environmental Science & Technology* 48.3, pp. 1921–1930
- 2016 T. Chonova et al. (2016). "Separate treatment of hospital and urban wastewaters: A real scale comparison of effluents and their effect on microbial communities". In: *Science of The Total Environment* 542, pp. 965–975
- 2016 F. Keck et al. (2016c). "Phylogenetic signal in diatom ecology: Perspectives for aquatic ecosystems biomonitoring". In: *Ecological Applications* 26.3, pp. 861–872
- 2016 F. Keck et al. (2016b). "phylosignal: an R package to measure, test, and explore the phylogenetic signal". In: *Ecology and Evolution* 6.9, pp. 2774–2780
- 2016 F. Keck et al. (2016a). "Linking phylogenetic similarity and pollution sensitivity to develop ecological assessment methods: a test with river diatoms". In: *Journal of Applied Ecology* 53.3, pp. 856–864
- 2016 F. Rimet et al. (2016). "R-Syst::diatom: an open-access and curated barcode database for diatoms and freshwater monitoring". In: *Database* 2016, baw016

SELECTED PRESENTATIONS

- 2011 7th *Symposium for European Freshwater Sciences (2011, Gerona, Spain)*. Can we predict nitrogen limitation in streams and rivers? A meta-analysis.
- 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.
- 2014 *Joint Aquatic Sciences Meeting (2014, Portland, Oregon)*. Linking Diatoms Ecological Preferences To Phylogeny: New Perspectives for Aquatic Ecosystems Bioassessment.
- 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.

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*.

Technical Skills

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

Database: MS Access, MySQL (basics)

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

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

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

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

References

Dr Agnès Bouchez

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