Maximilian Daniel LARTER

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Born August 5th, 1987 at Derby (UK)

EDUCATION

2016 **PhD in evolutionary, functional and community ecology - University of Bordeaux**
Thesis title: Evolution of cavitation resistance in conifers (ministerial grant)
Supervisors: Sylvain Delzon and Jean-Christophe Domec
Synopsis: This thesis expands our understanding of the evolution of vascular plants regarding severe drought. We show that embolism resistance varies 9-fold across over 250 conifer species, thanks to changes in bordered-pit anatomy. Combining this unprecedented database with a calibrated phylogeny, we link embolism resistance evolution to increased diversification rate. Furthermore, we describe the remarkable evolution of *Callitris* xylem during the aridification of Australia over the last 30 million years.

2011 **Master's degree - University of Bordeaux**
Terrestrial Ecosystem Functioning and Modelling

2008 **Bachelor's Degree - University of Orléans**
Organismal Biology

PUBLICATIONS

Refereed Journal Articles

2017 Sáenz-Romero C, Larter M, González-Muñoz N, Wehenkel C, Blanco-Garcia A, Castellanos-Acuña D, Burlett R, Delzon S. (2017). Mexican conifers differ in their capacity to face climate change. *Journal of Plant Hydraulics*, 4, e003. link

2016 Castagneyrol B, Jactel H, Brockerhoff E, Perrette N, Larter M, Delzon S, Piou D. Host range expansion is density dependent. *Oecologia*, 1-10. link

2015 Larter M, Brodribb TJ, Pfautsch S, Burlett R, Cochard H, Delzon S (2015). Extreme aridity pushes trees to their physical limits. *Plant Physiology*, 168. link

2014 Besnard G, Dupuy J, Larter M, Cuneo P, Cooke D, Chikhi L (2014). History of the invasive African olive tree in Australia and Hawaii: Evidence for sequential bottlenecks and hybridization with the Mediterranean olive. *Evolutionary Applications*, 7. link

Bouche PS, Larter M, Domec J-C, Burlett R, Gasson P, Jansen S, Delzon S (2014). A broad survey of hydraulic and mechanical safety in the xylem of conifers. *Journal of Experimental Botany*. link

Submitted Larter M., Pfautsch S., Domec J.-C., Trueba S., Nagalingum N., Delzon S. Aridity drove the evolution of extreme embolism resistance and the radiation of conifer genus *Callitris*. In Review with *New Phytologist* (2017)

In prep. Delzon S, Larter M, et al. - Global variation and evolution of drought-tolerance in Conifers.

Larter M, Delzon S. - Drought and the evolution of embolism resistance drives Conifer diversification.

CONFERENCES, PRESENTATIONS

2015 Xylem International Meeting, Bordeaux, September 7th-9th 2015 – **Oral talk**
« The evolution of cavitation resistance in conifers and the case of world-record *Callitris* »

LabEx Day (LabEx COTE), Bordeaux, October 15th 2015 – **Oral talk**
« Evolution of drought tolerance in Conifers - *Callitris* in Australia »

2014 HIE Seminar Series (University of Western Sydney), Richmond NSW (Australia), May 21st 2014 – **Invited oral talk**
« The evolution of cavitation resistance in Conifers »

2012 Journées de la Société Française de Systématique, Paris, October 8th-10th 2012- **Poster**
« Global variation and evolution of drought tolerance in Conifers »

SCIENCE OUTREACH

2016 « Three Minute Thesis » final - University of Bordeaux link

2013 Larter M. (2013). Le Pinetum de Bedgebury : « la plus belle collection de conifères du monde ». *Jardins de France*, 623. link

Larter M, Bouche P (2013). Les conifères, une famille à évolution complexe. *Jardins de France*, 623. link

RESEARCH EXPERIENCE

2012 Intern - 6 months - University of Bordeaux (Sylvain Delzon)
« Evolutionary patterns of cavitation resistance in conifers »

2011 Intern - 6 months - University of Bordeaux (Sylvain Delzon)
« Convergent evolution of drought tolerance in conifers »

2010 Intern (2 months) - Imperial College London (Guillaume Besnard)
« Population genetics of the olive (*Olea europaea*) complex »

TEACHING EXPERIENCE

2012-2013 2nd year Masters Lab day - « Cavitron » work group

OTHER WORK EXPERIENCE

2009 Temporary employee (ABI TT) – warehouseman then production line operator (Jock factory in Bordeaux, food packaging)

GRANTS & FUNDING

2014 External mobility grant from the COTE Cluster of Excellence – University of Bordeaux (3000€)

2014 Research Exchange Program (Inbound) – Hawkesbury Institute for the Environment - Western Sydney University (AU$3350)

RELATED SKILLS

Plant physiology and Genetics	Hydraulic conductance (Cavitron) Wood anatomy – microscopy (optical and SEM) DNA extraction and amplification – molecular marker analysis
Computing skills	Statistics in SAS / R Phylogenetics – BEAST, RAxML, MrBayes Comparative analyses - R **(***ape*, *phytools*, *geiger*, *diversitree*), BAMM GIS **(**QGIS)
Languages	Native speaker in English and French

REFERENCES

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