Oriol Verdeny Vilalta

I am a **biologist** with a background on **biostatistics** and interests in software development and web technologies. Nowadays I work in the interface between biology and **data science** addressing diverse problems related to **insect mass-rearing**, but I am also interested in a broad range of subjects from the field of **applied biology** such as **pest management**, **agroecology** and **soil science**. Currently, I live in Montpellier.

Personal details

Date and place of birth:	01-02-1984 Barcelona, Spain
Civil status:	Married
e-mail:	oriolverdeny@gmail.com
Web:	oriolverdeny.com

Professional experience

2014 - 2016	**Researcher and Data Scientist** Ynsect (Paris, France)
2013 - 2014	**Visiting Scholar** Institut de Recherche sur la Biologie de l'Insecte (Tours, France)
2008 - 2013	**PhD Ecology and Evolution** Experimental Station of Arid Zones – CSIC (Almería, Spain)

Education

2013	**PhD Ecology and Evolution** Dissertation: Ecological and evolutionary consequences of invertebrates' movement for biotic interactions Advisor: Dr. Jordi Moya Laraño Committee: Miguel Angel Rodríguez-Gironés, Adela González-Megías, José Antonio Hódar, Jose M. Montoya, Stefan Scheu Experimental Station of Arid Zones - CSIC
2009	**Master in Diversity and Function of Mediterranean Ecosystems** Autonomous University of Barcelona (Barcelona, Spain)
2007	**Bachelor degree in Biology** Autonomous University of Barcelona (Barcelona, Spain)

International research visits

2012	**Institut de Recherche sur la Biologie de l'Insecte - University of Tours, France** Development of a general model to study the movement of insect pests within trees: the case of apple maggot flies

	Advisor: Jérôme Casas
2011	**Department of Physics - University of Split, Croatia**
	Development of a C++ spatially explicit Agent Based Model to study trophic interactions driven by soil invertebrates' movement - Part II
	Advisor: Dejan Vinkovic
2010	**Department of Physics - University of Split, Croatia**
	Development of a C++ spatially explicit Agent Based Model to study trophic interactions driven by soil invertebrates' movement Part - I
	Advisor: Dejan Vinkovic
2009	**Department of Biology - University of Kentucky, US**
	Development of a cellular automata model to study spatial and temporal dynamics of japanese beetle pest in a homogeneous crop
	Advisor: Phillip H. Crowley

Grants and awards

2012	**Fellowship for stays at foreign institutions**
	Institut de Recherche sur la Biologie de l'Insecte - University of Tours, France
	Financing: Spanish Ministry of Science and Innovation
2011	**Fellowship for stays at foreign institutions**
	University of Split, Croatia
	Financing: Spanish Ministry of Science and Innovation
2010	**Fellowship for stays at foreign institutions**
	University of Split, Croatia
	Financing: Spanish Ministry of Science and Innovation
2009	**Fellowship for stays at foreign institutions**
	University of Kentucky, US
	Financing: Spanish Ministry of Science and Innovation
2008 – 2012	Doctoral fellowship from the Spanish Ministry of Science and Innovation
2007	1st applied statistical prize awarded by the Autonomous University of Barcelona and Idescat

Participation in research projects

2014 – 2016	Development of insect mass production technology for Tenebrio molitor
	Financing: Ynsect/private
	Project leader: Fabrice Berro
2015 – 2016	DataKillers: a data mining R-package for industrial insect mass production
	Project leader: Oriol Verdeny Vilalta
2015	Metabolic heat production of Tenebrio molitor
	Financing: Ynsect/private
	Project leader: Fabrice Berro
2011 – 2014	Leaf litter food webs across rainfall gradients

	Financing: Spanish Ministry of Science and Innovation
	Project leader: Jordi Moya Laraño
2008 – 2011	**Biodiversity and ecosystem functioning in the National Parks's Network: molecular ecology of leaf-litter food webs in beech forests**
	Financing: Spanish Ministry of Agriculture, Food and Environment
	Project leader: Jordi Moya Laraño
2007 – 2008	**Bridging, climbing, running and walking: morphological adaptations for the movement of male spiders**
	Financing: Spanish Ministry of Science and Innovation
	Project leader: Jordi Moya Laraño

Publications

Peer reviewed journals

Visser B., Le Lann C., Snaas H., **Verdeny-Vilalta O.**, Harvey J.A. 2016. Divergent reproductive tactics in congeneric hyperparasitoids. Evolutionary Ecology 30:535-549.

Verdeny-Vilalta O., Fox C.W., Wise D.H., Moya-Laraño J. 2015. Foraging mode affects the evolution of egg size in generalist predators embedded in complex food webs. Journal of Evolutionary Biology 28:1225-1233.

Verdeny-Vilalta O., Aluja M., Casas J. 2014. Relative roles of resource stimulus and vegetation architecture on the paths of flies foraging for fruits. Oikos 124:337-346.

Verdeny-Vilalta O., Moya-Laraño J. 2014. Seeking water while avoiding predators: moisture gradients can affect predator-prey interactions. Animal Behaviour. 90:101-108.

Moya-Laraño J., **Verdeny-Vilalta O.**, Rowntree J., Melguizo-Ruiz N., Montserrat M., Laiolo P. 2012. Climate change and eco-evolutionary dynamics in food webs. Advances in Ecological Research 47:1-80.

Melguizo-Ruiz N., **Verdeny-Vilalta O.**, Arnedo M.A., Moya-Laraño J. 2012. Potential drivers of spatial structure of leaf-litter food webs in south-western European beech forests. Pedobiologia 55:311-319.

Other publications

Verdeny-Vilalta O. 2013. Algunas consecuencias ecológicas y evolutivas del movimiento animal para las interacciones bióticas. PhD thesis, University of Granada, Spain.

Melguizo-Ruiz N., Arnedo M.A., **Verdeny-Vilalta O.**, Natta S., Valera F., Moya-Laraño J. 2012. Una aproximación multidisciplinar al estudio de las redes tróficas de la hojarasca de los hayedos de los parques nacionales. Proyectos de investigación en parques nacionales: 2008-2011.

In preparation

Verdeny-Vilalta O., Melguizo-Ruiz N., Moya-Laraño J. (Submitted). Short-term effects of water on the structure and dynamics of a deciduous forest floor food web.

Verdeny-Vilalta O., Ćosić K., Teklić J., Moya-Laraño J., Vinković D. Non-linear correlates between predator-prey perceptual range and encounter rates.

Conferences and seminars

2016	Power and Care – A mind and life dialogue with H.H. the Dalai Lama

	Brussels, Belgium
2016	PyData and EuroPython conference Bilbao, Spain
2015	Hello Tomorrow conference - Global Summit for Science & Tech Entrepreneurship Ynsect – Feeding 10 billion Paris, France
2014 – 2016	Ynsect scientific monthly seminars * Évry, France
2013	IX EEZA-CSIC Scientific Marathon * Verdeny-Vilalta O., Aluja M., Casas J. Foraging paths in complex environments: relative roles of architectural complexity and intrinsic stimulus strength on flies foraging for fruits Almeria, Spain
2011	12th European Ecological Federation Congress Melguizo-Ruiz N., Verdeny-Vilalta O., Arnedo M.A., Moya-Laraño J. Disentangling food web spatial structure: variance components, model selection and path analysis Ávila, Spain
2010	3rd Workshop of the ESF Research Networking Programme SIZEMIC ** Verdeny-Vilalta O., Cosic K., Vinkovic D., Moya-Laraño J. An agent-based model to study soil food web dynamics under water stress in beech forests Barcelona, Spain
2010	1st European Community Genetics ** Verdeny-Vilalta O., Moya-Laraño J. Linking quantitative genetics to food web dynamics Manchester, UK
2009	Thomas Hunt Morgan Biological Sciences Building Seminars * Verdeny-Vilalta O., Modelling crop damage dynamics by the beetle Popillia japonica Kentucky, US
2009	Thomas Hunt Morgan Biological Sciences Building Seminars * Verdeny-Vilalta O., Fox C.W., Wise D.H., Moya-Laraño J. Foraging mode affects the evolution of egg size in generalist predators embedded in complex food webs Kentucky, US
2008	IX Iberian Society of Arachnology * Verdeny-Vilalta O., Moya-Laraño J. Does foraging mode limit the fecundity of spiders? Córdoba, Spain
2008	XII National Congress and IX Ibero-American of Ethology ** Verdeny-Vilalta O., Moya-Laraño J. Does foraging mode limit the fecundity of spiders? Valencia, Spain

* Oral presentation, ** Poster presentation

Courses

2016	Using Python to access web data (coursera.org), by Charles Severance
2016	Python for data science (datacamp.com)
2016	Experimentation for improvement (courser.org), by Kevin Dunn
2013	Computing for data analysis (coursera.org), by Roger D. Peng
2011	Writing scientific articles (CEAMA, Granada, Spain), by Fernando T. Maestre
2009	Conceptual methods in ecology and evolution (University of Kentucky, US), by Philip H. Crowley
2008	Basic methods in evolutionary ecology and evolution (EEZA, Almería, Spain), by Miguel Angel Rodríguez-Gironés and Francisco Valera

Skills

Biology	Ecology and evolution, food-webs, behavioural ecology, soil ecology, community ecology, entomology, bioinformatics, insect mass rearing, pest control, climate change.
Statistics	Design of experiments, hypothesis testing, statistical modelling (linear and non-linear models, mixed models, generalized models), big datasets, image and sound analysis, machine learning, phylogenetic analysis, databases, data visualization.
Programming languages	R (9-year experience), Python, Matlab, C/C++, Mathematica, Maple, git.
Modelling	Individual based models, random walks, cellular automata, physiological models, mathematical models applied to industry.
Laboratory and fieldwork	Rearing, sampling, manipulation, identification and trait measurement of soil invertebrates and mass reared insects.

Language

Language	Speaking	Reading	Writing
Catalan	Native	Native	Native
Spanish	Native	Native	Native
English	Good	Good	Good
French	Good	Good	Intermediate

Referees

Dr. Jordi Moya Laraño
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