Dr Julien Massoni

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Born 26/10/1984 in Paris, France
French citizenship
Married, two children

My general scientific interest is to understand how the interplay between different biological scales allows adaptation and diversification of organisms. Both genetic backgrounds of individuals and their interactions within communities, populations or across lineages contribute to explain these evolutionary processes. In this context, I am developing two personal projects. In 2015, I launch a project with Dr. Carl Schlichting to investigate specific genome-restructuring events that should underlie the emergence of plastic responses in biology. In 2016, I initiated a second project supported by an ETH postdoctoral grant and Dr. Julia Vorholt to investigate the modes of interactions between flowers, leaves and bacteria, and potential new roles of these microorganisms in floral biology (e.g. plant-pollinator, plant-predator interactions).

Education / Professional experience

2016-present: Postdoctoral fellow at the ETH of Zurich (Switzerland). Floral-microbiome ecology and its role in floral biology (ETH of Zurich, Switzerland) / PI: Dr Julia Vorholt / Grant: Adaptation to a Changing Environment initiative of the ETH of Zurich

2015: Postdoc position at the University of Connecticut (USA). Genome restructurings underlying the evolution of plastic responses / PI: Dr Carl Schlichting

2013-2014: Temporary lecturer and research assistant at University Paris-Sud (France). One-year contract allowing me to finish my PhD while gaining further teaching experience

2010-2014: PhD at University Paris-Sud (France). Phylogeny, molecular dating and floral evolution of Magnoliidae (angiosperms) / PhD Advisor: Dr Hervé Sauquet / PhD grant: Ministry of higher education, and research of France.

2008-2010: Master's degree in Systematics, Evolution and Paleo-biodiversity, University Pierre et Marie Curie (France) / Internship: systematic and phylogeny of parasitic nematodes / Advisors: Dr Fabienne Audebert (University Pierre et Marie Curie) and Dr Marie-Claude Durette-Desset (Museum National d'Histoire naturelle de Paris)

2004-2008: Biology undergraduate studies, University Pierre et Marie Curie (France) / Volunteer internship: taxonomy and biology of parasitic nematodes of mammals / Advisors: Dr Fabienne Audebert, Jimmy Cassone (Engineer, Museum National d'Histoire naturelle de Paris) and Dr Marie-Claude Durette-Desset

Publications

(Under finalization) Massoni J., Maria von Balthazar, Thomas L.P. Couvreur, Yannick Staedler, Jürg Schönenberger, Hervé Sauquet. Floral evolution and new hypotheses on perianth function in Magnoliidae.

7. Sauquet H., von Balthazar M., Magallón S., Doyle J.A., Endress P.K., Bailes E., Barroso de Morais E., Bull-Hereñu K., Carrive L., Chartier M., Chomicki G., Coiro M., Ottra J.H.L. E., Epicoco C., Foster C., Jabbour F., Haevermans T., Hernández R., Little S.A., Löfstrand S., Luna J.A., **Massoni J.**, Nadot S., Prieu C., Reyes E., dos Santos P., Schoonderwoerd K., Soulebeau A., Städler Y., Tschan G., Wing-Sze Leung A. and Schönenberger J. (2017) The ancestral flower of angiosperms and its early diversification. Nature communications 8: 16047.

6. Massoni J., Couvreur L.P.T. and Sauquet H. (2015) Five major shifts of diversification through the long evolutionary history of Magnoliidae (angiosperms). BMC Evolutionary Biology 15:49.

5. Massoni J., Doyle J. and Sauquet H. (2015). Fossil calibration of Magnoliidae, an ancient lineage of angiosperms. Palaeontologia Electronica 18.1.2FC: 1-25.

4. Massoni J., Forest F. and Sauquet H. (2014). Increased sampling of both genes and taxa improves resolution of phylogenetic relationships within Magnoliidae, a large and early-diverging clade of angiosperms. Molecular Phylogenetics and Evolution 70:84-93.

3. Massoni J., Durette-Desset M.C., Quéré J.P. and Audebert F. (2012). Redescription of *Heligmosomoides neopolygyrus*, Asakawa and Ohbayashi, 1986 (Nematoda: Heligmosomidae) from a chinese rodent, *Apodemus peninsulae* (Rodentia: Muridae); with comments on *Heligmosomoides polygyrus polygyrus* (Dujardin, 1845) and related species in China and Japan. Parasite 19: 367-374.

2. Massoni J., Cassone J., Durette-Desset M.C. and Audebert F. (2011). Morphogenesis and life cycle of *Graphidium strigosum* (Trichostrongylina, Haemonchidae) in the rabbit (*Oryctolagus cuniculus*) comparison with Haemonchidae parasites of ruminants. Parasitology Research 109: 25-36.

1. Massoni J., Durette-Desset M.C., Quéré J.P. and Audebert F. (2010). Description of a new species of *Heligmosomoides* (Nematoda: Heligmosomidae) parasitic in *Microtus limnophilus* (Rodentia: Cricetidae) from Rangtang, Sichuan, China. Parasite 17: 17-22.

Oral communications

Invited speaker: **Massoni J.**, von Balthazar M., Couvreur T.L.P., Staedler Y., Schönenberger J. and Sauquet H. (2017). Floral evolution and new hypotheses on perianth function in Magnoliidae. XIX International Botanical Congress (Shenzen, China)

Sauquet H., von Balthazar M., Magallón S., Doyle JA., Endress PK., Bailes E., Barroso de Morais E., Bull-Hereñu K., Carrive L., Chartier M., Chomicki G., Coiro M., El Ottra JHL., Epicoco C., Foster C., Jabbour F., Haevermans T., Hernández R., Little SA., Löfstrand S., Luna JA., **Massoni J.**, Nadot S., Prieu C., Reyes E., dos Santos P., Schoonderwoerd K., Soulebeau A., Städler Y., Tschan G., Wing-Sze Leung A., Schönenberger J. (2016). The reconstructed ancestral flower and its subsequent diversification. Evolution 2016 (Austin, TX., USA)

Little S.A., **Massoni J.**, von Balthazar M., Carrive L., Couvreur T. L. P., Schoenenberger J., Staedler Y., Sauquet H. (2015). Floral evolution in Magnoliidae: an integrated approach. Botany 2015 (Savannah, GA, USA)

Sauquet S., von Balthazar M., Magallón S., Doyle J. A., Endress J. K., Bailes E., Barroso de Morais E., Bull-Hereñu K., Carrive L., Chartier M., Chomicki G., Coiro M., El ORra J. H. L., Epicoco C., Jabbour F., Haevermans T., Hernández R., Little S. A., Löfstrand S., Luna J. A., **Massoni j.**, Nadot S., Prieu C., Reyes E., dos Santos P., Schoonderwoerd K., Soulebeau A., Städler Y., Tschan G., Wing-Sze Leung A., and Schönenberger J. (2015). Fifteen clues to the early diversifica4on of flowers: first results from the eFLOWER initiative. Botany 2015 (Savannah, GA, USA)

Carrive L., **Massoni J.**, Sauquet H. (2014). Perianth Evolution in Magnoliidae (Angiospermae). Is there a link between phyllotaxis and fusion? Journée 2014 de la Société Française de Systématique (Paris, France)

Sauquet H., Schönenberger J., von Balthazar M., Bailes E., Barroso de Morais E., Bull-Hereñu K., Carrive L., Chartier M., Chomicki G., Coiro M., El Ottra J.H.L., Epicoco C., Jabbour F., Haevermans T., Hernández R., Löfstrand S., Luna J.A.**, Massoni J.**, Nadot S., Prieu C., Reyes E., dos Santos P., Schoonderwoerd K., Simonnet F., Soulebeau A., Städler Y., Tschan G., Leung A.W.-S., Magallón S. (2014). eFLOWER: Synthesizing data on flowers in the 21st century. UNESCO International Conference: "Botanists of the Twenty-first Century: Roles, Challenges and Opportunities" (Paris, France)

Sauquet H., Schönenberger J., von Balthazar M., Bailes E., Barroso de Morais E., Bull-Hereñu K., Carrive L., Chartier M., Chomicki G., Coiro M., El Ottra J.H.L., Epicoco C., Jabbour F., Haevermans T., Hernández R., Löfstrand S., Luna J.A.**, Massoni J.**, Nadot S., Prieu C., Reyes E., dos Santos P., Schoonderwoerd K., Simonnet F., Soulebeau A., Städler Y., Tschan G., Leung A.W.-S., Magallón S. (2014). eFLOWER: A framework for understanding the evolution and diversification of flowers. Evolutionary Plant Radiations Meeting (Zurich, Switzerland)

Massoni J. (2014). Phylogeny, molecular dating, and floral evolution of Magnoliidae (Angiospermae). **Invited seminar talk** at the institute of Systematics, Evolution, and Biodiversity of the Muséum National d'Histoire naturelle (Paris, France)

Massoni J. (2014). Evolutionary history of a large clade of angiosperms, Magnoliidae. **Invited seminar talk** at Institute of Microbiology of the ETH of Zurich (Switzerland)

Sauquet H., von Balthazar M., Carrive L., Epicoco C., Haevermans T., Jabbour F., **Massoni J.**, Nadot S., Prieu C., Simonnet F., Tschan G., Schönenberger J.. (2013). eFLOWER: A framework for understanding the evolution and diversification of extant and fossil flowers. Botany 2013 (New Orleans, U.S.A.)

Invited speaker: **Massoni J.**, von Balthazar M., Carrive L., Couvreur T., Schönenberger J., Städler Y., Sauquet H. (2013). Fossil calibration of Magnoliidae: Thorough background research significantly improves reliability of molecular age estimates. Botany, 2013 (New Orleans, Louisiana, U.S.A.)

Massoni J., Felix Forest F., Sauquet H. (2012). Evolutionary history of a 10,000-species clade of angiosperms: reconstructing the phylogeny of magnoliids as a whole. Journées d'automne de la Société Française de Systématique 2012 (Paris, France)

Massoni J., Forest F., Sauquet H. (2012). Evolutionary history of a 10,000-species clade of angiosperms: reconstructing the phylogeny of magnoliids as a whole. Botany 2012 (Columbus, U.S.A.)

Massoni J., Forest F., Sauquet H. (2012). Evolutionary history of a 10,000-species clade of angiosperms: reconstructing the phylogeny of magnoliids as a whole. **Invited seminar talk** at the laboratory of Tropical Botany of the University of Göteborg (Sweden)

Massoni J., Forest F., Sauquet H. (2012). Evolutionary history of a 10,000-species clade of angiosperms: reconstructing the phylogeny of magnoliids as a whole. PhD days (Orsay, France)

Massoni J. & Sauquet H.. (2011). Evolutionary history of a 10,000-species clade of angiosperms: reconstructing the phylogeny of magnoliids as a whole. 8th Biennial meeting of the Systematic Association 2011 (Belfast, UK)

Massoni J. & Sauquet H. (2011). Evolutionary history of a 10,000-species clade of angiosperms: reconstructing the phylogeny of magnoliids as a whole. Young Systematists' Forum 2011 (London, UK)

Posters

Azizan A., Couvreur T., **Massoni J.**, Sauquet H. (2016). Evolution of floral morphological characters in Annonaceae Juss. 10th International Flora Malesiana Symposium (Edinburgh, U.K.).

Little S.A., **Massoni J.**, Delannoy E., von Balthazar M., Carrive L., Couvreur T.L.P., Schönenberger J., Städler Y., Sauquet H. (2015). Integrating transcriptomes into the comparative floral evolution of magnoliids. 10th Canadian Plant Genomics Workshop (Victoria, Canada).

Sauquet H., Schönenberger J., von Balthazar M., Bailes E., Barroso de Morais E., Bull-Hereñu K., Carrive L., Chartier M., Chomicki G., Coiro M., El Ottra J.H.L., Epicoco C., Jabbour F., Haevermans T., Hernández R., Löfstrand S., Luna J.A., **Massoni J.**, Nadot S., Prieu C., Reyes E., dos Santos P., Schoonderwoerd K., Simonnet F., Soulebeau A., Städler Y., Tschan G., Leung A.W.-S., Magallón S. (2014). eFLOWER: A framework for understanding the evolution and diversification of flowers. Evolutionary Plant Radiations Meeting (Zurich, Switzerland).

Carrive L., **Massoni J.**, Sauquet H. (2014). Phylogenetic analysis of Magnoliidae fossil flowers. Young Natural History Scientists' Meeting (Paris, France).

Massoni J., Durette-Desset M.-C., Audebert F. (2010). The enigma of *Paraustrostrongylus bettongia* (Nematoda) in Australia. International Congress of Parasitology 2010 (Melbourne, Australia)

Grants

Postdoctoral fellowship from the Adaptation to a Changing Environment initiative of the ETH of Zurich (2016-2017): 186,900 CHF

Vernon I. Cheadle Student Travel Award. Botanical Society of America (2013): 500 $

Travel grant from the Institut Diversité, Ecologie et Evolution du Vivant (2013): 500 €

Travel grant from the Institut Diversité, Ecologie et Evolution du Vivant (2012): 480 €

Travel grant from the Institut Diversité, Ecologie et Evolution du Vivant (2011): 387 €

Grant from the Société Botanique de France (2011): 2000 €

Student Grant of Systematic Association (2011): 149.5 €

Thesis scholarship from the Ministry of Sciences and higher education of France (2010-2013)

Teaching experience

Microbiology practical course (ETH of Zurich): 44 hours

Flowering plant identification (L1, University Paris-Sud): 26 hours

Diversity of life (L1, University Paris-Sud): 54 hours

Genetics and ecology (L1, University Paris-Sud): 92 hours

Fieldwork L2 (L2, University Paris-Sud): 49 hours

Botanic systematics (L3, University Paris-Sud): 30 hours

Botany applied to natural environments (L3, University Paris-Sud): 26 hours

Biodiversity (L3, University Paris-Sud): 3 hours

Referee of two students during their professional internship (L3, University Paris-Sud): 25 hours

Supervision

2013: Laetitia Carrive (Master student): integration of the fossil record in the extant phylogeny of Magnoliidae

2012: Lucie Rabeau (Master student): evolution of the pollination in Magnoliidae

Reviewing activities

Journals: Taxon / Scientific Reports / Journal of Biogeography

Funding institutions: Research Grants Council (RGC) of Hong Kong

Lab Responsibilities

Associate representative of non-permanent staff of the department Ecology, Systématique et Evolution (2012-2013)

Person in charge for a molecular lab room of the department Ecology, Systematic et Evolution (2012-2013)

Memberships

2010-present: member of the French Society of Systematic

2010- present: Member of the Botanical Society of America

2010- present: Member of the American Society of Plant Taxonomists

2010- present: Member of the Systematic Association

2010-2013: Elected member in the board of the French Society of Systematics (website manager)

Field work

October 2013: Mount Cameroun, Campo Ma'an Park (Cameroun) / Collecting of plants with Dr Hervé Sauquet (University Paris-Sud) and Dr Thomas Couvreur (Institut de Recherche pour le Développement, France)

March 2008 & 2009: Banyuls sur mer (France) / Collecting of biological material for parasitic checkup with Dr Gilles Petit (University Pierre et Maire Curie) et Dr Fabienne Misdguish (University Versailles Saint Quentin, France)

December 2007: Normandie (France) / Trapping of rabbits in order to develop a parasitic strain. Fabienne Audebert, S. Marchandeau and J. Letty (Office national de la chasse, France).

Computer skills

Unix, Python, R

Website design experience

Languages

French (mother language), English (read, spoken, written), Spanish (read)