

M. Claude RISPE

Searcher at the

Institut National de la Recherche Agronomique

Marital life, two children

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37 years old (born May, 14th, 1967)

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● *Research interests*

I am focused on three topics :

- the evolution of genomes (in particular the evolution of codon usage and codon preferences), in bacteria and in insects
- the evolution of reproductive modes (sexual *vs* asexual), especially in aphids
- the evolution of cooperation and symbiosis (aphid/*Buchnera* in particular)

● *Professional experience*

I have been a tenure track **searcher at Inra** since 08/01/1996 (UMR "BIO3P", "population biology of insects" group, Rennes-Le Rheu). I spent a **post-doctoral** in Tucson, USA (University of Arizona, Dept of Ecology and Evolutionary Biology, 1997-98) with Nancy Moran. I teach **classes in evolutionary biology and bio-computing** (Rennes University) et and **supervised** several graduate **students**.

I am the **leader of a project** supported by Inra on the evolutionary diversification of aphid clonal populations (2004-2006). I served as a **referee** for : Ecology Letters, FEBS Letters, Microbiology, Molecular Biology & Evolution, Molecular Ecology.

● *Collaborations*

I have been collaborating with the group of Andres Moya (U. Valencia, Espagne), J. Wernegreen (USA), and F. Delmotte (Inra Bordeaux).

● *Student cursus*

I made a PhD **thesis** between 1991 and 1994 (university of Tours) on the modelling of selective factors operating on aphid life-cycles. This was preceded by a master in Population Biology and Eco-Ethology (Rennes-Tours). I graduated in a high school, the Institut national agronomique Paris-Grignon (1991).

● *Specific knowledge*

Bioinformatics : programming & modelling (C,Perl), phylogenetic and genomic tools, statistics (Sas).

Languages : Englishs (fluent). Spanish (reading and understanding, correctly spoken).

● Publications

- Shaber, J., Rispe, C., Wernegreen, J., Bunes, A., Delmotte, F., Silva, F.J. and A. Moya, 2005. Gene expression levels influence amino acid usage and evolutionary rates in endosymbiotic bacteria. *Gene, in press*
- Rispe, C., F. Delmotte, R. C. H. J. Van Ham, and A. Moya 2004. Mutational and selective pressures on codon and amino acid usage in *Buchnera*, endosymbiotic bacteria of aphids. *Genome Research* **14**:44-53.
- Halkett, F., R. Harrington, M. Hullé, P. Kindlmann, F. Menu, C. Rispe, and M. Plantegenest 2004. Dynamics of production of sexual forms in aphids: theoretical and experimental evidence for adaptive "coin-flipping" plasticity. *American Naturalist* **163**:E112-E125.
- Delmotte, F., B. Sabater-Muñoz, N. Prunier-Leterme, A. Latorre, P. Sunnucks, C. Rispe, and J. C. Simon 2003. Phylogenetic evidence for hybrid origin of asexual lineages in an aphid species. *Evolution* **57**:1291-1303.
- Simon, J. C., F. Delmotte, C. Rispe, and T. J. Crease 2003. Phylogenetic relationships between parthenogens and their sexual relatives: the possible routes to parthenogenesis in animals. *Biological Journal of the Linnean Society* **79**:151-163.
- Delmotte, F., N. Leterme, J.-P. Gauthier, C. Rispe, and J. C. Simon 2002. Genetic architecture of sexual and asexual populations of the aphid *Rhopalosiphum padi* based on allozyme and microsatellite markers. *Molecular Ecology* **11**:711-723.
- Hudson, R. E., J. E. Aukema, C. Rispe, and D. Roze 2002. Altruism, cheating, and anticheater adaptations in cellular slime molds. *American Naturalist* **160**:31-43.
- Simon, J. C., C. Rispe, and P. Sunnucks 2002. Ecology and evolution of sex in aphids. *Trends in Ecology and Evolution* **17**:34-39.
- Delmotte, F., N. Leterme, F. Bonhomme, C. Rispe, and J. C. Simon 2001. Multiple routes to asexuality in an aphid species. *Proceedings of the Royal Society of London B* **268**:2291-2299.
- Rispe, C., and N. A. Moran 2000. Accumulation of deleterious mutations in endosymbionts: Muller's ratchet with two levels of selection. *American Naturalist* **156**:425-441.
- Hullé, M., D. Maurice, C. Rispe, and J. C. Simon 1999. Clonal variability in sequences of morph production during the transition from parthenogenetic to sexual reproduction in the aphid *Rhopalosiphum padi* (Sternorrhincha: Aphididae). *European Journal of Entomology* **96**:125-134.
- Rispe, C., J. Bonhomme, and J. C. Simon 1999. Extreme life-cycle and sex ratio variation among sexually produced clones of the aphid *Rhopalosiphum padi* (Homoptera: Aphididae). *Oikos* **86**:254-264.
- Rispe, C., M. Hullé, J.-P. Gauthier, J.-S. Pierre, and R. Harrington 1998. Effect of climate on the proportion of males in the autumn flight of the aphid *Rhopalosiphum padi*, L., 122: 129-136. *Journal of Applied Entomology* **122**:129-136.
- Rispe, C., and J.-S. Pierre 1998. Coexistence between cyclical parthenogens, obligate parthenogens and intermediates in a fluctuating environment. *Journal of Theoretical Biology* **195**:97-110.
- Rispe, C., J.-S. Pierre, J. C. Simon, and P.-H. Gouyon 1998. Models of sexual and asexual coexistence in aphids based on constraints. *Journal of Evolutionary Biology* **11**:685-701.
- Rispe, C., J.-S. Pierre, and J. C. Simon 1996. Fitness comparison between clones differing in their ability to achieve production of sexuals in the aphid *Rhopalosiphum padi* (L.). *Entomologia Experimentalis et Applicata* **80**:469-474.