

## REGIS FERRIERE BIOSKETCH

A. Associate Professor, Department of Ecology and Evolutionary Biology, University of Arizona, 1041 E. Lowell, Tucson, AZ 85721-0088. Tel: 520-621-9269, FAX: 520-621-9190. Professor, Department of Evolutionary Ecology, Ecole Normale Supérieure, 46 rue d'Ulm, 75005 Paris, France. Tel: +33-1-4432-2340, FAX: +33-1-4432-3885. Date of Birth: 11 December, 1968; E-mail: [regisf@email.arizona.edu](mailto:regisf@email.arizona.edu); WEB: <http://eebweb.arizona.edu/faculty/bios/ferriere.html>

### Education:

Ph.D. 1995, Applied Mathematics & Ecology, University of Paris, France; M. Sc. 1992, Mathematics, University of Paris, France; B.S. 1990, Mathematics, University of Paris, France.

### Employment:

2006- Professor, Ecole Normale Supérieure, Paris, France; 2006- Director, Ecotron Ile-de-France; 2002-2006 Professor, University of Paris, France; 2001- Associate Professor, University of Arizona, Tucson, AZ; 1997-2001 Adjunct Associate Professor, University of Arizona, Tucson, AZ; 1997-2002 Associate Professor, Ecole Normale Supérieure, Paris, France; 1995-1997 Assistant Professor, Ecole Normale Supérieure, Paris, France; 1994-2002 Research Associate, International Institute of Applied Systems Analysis, Laxenburg, Austria; 1993-1995 Research Assistant, University of Arizona, Tucson, AZ.

### Research and Teaching Awards and Honors:

Elected Member of the University National Academy (*Institut Universitaire de France*) 2006. Young Scientist Excellence 2000 – French national prize awarded by the Ministry for Research and Education.

Fellow of the Ecole Normale Supérieure (Department of Mathematics), Paris, France, 1989-1993.

### B. Ten recent significant publications:

Massot, M., Clobert, J. and Ferriere, R. 2008. Climate warming, dispersal inhibition and extinction risk. *Global Change Biology* (in press).

Ferrière, R., Gauduchon\*, M. and Bronstein, J. L. 2007. Evolution and persistence of obligate mutualists and exploiters: competition for partners and evolutionary immunization. *Ecology Letters* **10**: 115-126.

Ferrière, R., Guionnet, A. and Kurkova, I. 2006. Timescales of population rarity and commonness in random environments. *Theoretical Population Biology* **69**: 351-366.

Champagnat\*, N., Ferrière, R. and Meleard, S. 2006. Unifying evolutionary dynamics: From individual stochastic processes to macroscopic models. *Theoretical Population Biology* **69**: 297-321.

Dercole\*, F., Ferrière, R., Gragnani, A. and Rinaldi, S. 2006. Coevolution of slow-fast populations: evolutionary sliding, evolutionary pseudo-equilibria and complex Red Queen dynamics. *Proceedings of the Royal Society B-Biological Sciences* **273**: 983-990.

Le Galliard\*, J. F., Dieckmann, U. and Ferrière, R. 2005. Adaptive Evolution of Social Traits: Origin, Trajectories, and Correlations of Altruism and Mobility. *American Naturalist* **165**: 206-224.

Le Galliard\*, J. F., Fitze, P. S., Ferrière, R. and Clobert, J. 2005. Sex ratio bias, male aggression, and population collapse in lizards. *Proceedings of the National Academy of Sciences of USA* **102**: 18231-18236.

Le Galliard\*, J. F., Clobert, J. and Ferrière, R. 2004. Physical performance and darwinian fitness in lizards. *Nature* **432**: 502-505.

Pike, N., Tully\*, T., Haccou, P. and Ferrière, R. 2004. The effect of autocorrelation in environmental variability on the establishment and persistence of populations: an experimental test. *Proceedings of the Royal Society London B* **271**: 2143-2148.

Ferrière, R., Dieckmann, U. and Couvet, D., Eds. 2004. *Evolutionary Conservation Biology*, 446 p., Cambridge University Press, Cambridge.

Loeuille\*, N., Loreau, M. and Ferrière, R. 2002. Consequences of plant-herbivore coevolution on the dynamics and functioning of ecosystems. *Journal of Theoretical Biology* **217**: 369-381.

\* indicates graduate students advised or co-advised by R.F.

### **C. Funding**

Support: **Current.**

Project/Proposal Title: **FIBR – From Genes to Ecosystems: How Do Ecological and Evolutionary Processes Interact in Nature?. RF, co-PI. PI: David Reznick (UCR).**

Source of Support: **NSF – Frontiers in Integrative Biological Research**

Total Award Amount: **\$ 5,000,000.**

Total Award Period Covered: **9/1/2006-8/31/2011.**

Location of Project: **University of Arizona.**

Support: **Current.**

Project/Proposal Title: **National Alliance for Experimental and Predictive Ecology. RF, PI. Co-PIs: Luc Abbadie (Ecology Department, University of Paris) and Jean Clobert (CNRS).**

Sources of Support: **CNRS (France).**

Total Award Amount: **\$ 1,220,000.**

Total Award Period Covered: **6/1/2006-5/31/2011.**

Location of Project: **Ecole Normale Supérieure, Paris, France.**

Support: **Current.**

Project/Proposal Title: **Probabilistic Methods for Biological Evolution. RF, co-PI. PI: Etienne Pardoux (Mathematics Department, University of Marseille).**

Source of Support: **French National Research Fund.**

Total Award Amount: **\$ 516,000.**

Total Award Period Covered: **9/1/2006-8/31/2010.**

Location of Project: **Ecole Normale Superieure, Paris, France.**

#### **D. Synergistic activities**

Contributor to Nature News&Views weekly features; to Swiss magazine Le Temps Strategique, feature articles on the evolution of social behavior and on science of nutrition and cooking. Organizer of the International Winter School on Mathematical Modeling in Biology, held annually at the Ecole Normale Superieure, Paris, France (9<sup>th</sup> edition in 2005; to date attended by 138 students from 8 western countries). Organizer of 14 international workshops and symposia (since 1997) in mathematical ecology and evolutionary biology. Coordinator of major undergraduate and graduate courses in mathematics applied to biology, ecology, evolutionary biology at the University of Paris. Organizer of annual field research training for undergraduate students in ecology at the Ecole Normale Superieure of Paris. Scientific outreach, including annual participation at the French national Sciences Fare since 1998.

#### **E. Collaborators over the last 48 months:**

Judith Bronstein (U. Arizona), Jean Clobert (CNRS Toulouse, France), Jim Cushing (U. Arizona), Denis Couvet (National Museum of Natural History, Paris, France), Don DeAngelis (USGS Miami), Laurent Desvillettes (ENS Cachan, France), Fabio Dercole (Politecnico di Milano, Italy), Ulf Dieckmann (IIASA), Brian Enquist (U. Arizona), Patrick Fitze (U. Cambridge, UK), Wilfried Gabriel (U. Munich, Germany), Alice Guionnet (ENS Lyon, France), Patsy Haccou (U. Leiden, the Netherlands), Irina Kourkova (U. Paris, France), Jean-François Le Galliard (CNRS Paris, France), Michel Loreau (U. Paris, France), Manuel Massot (CNRS Paris, France), Sylvie Meleard (Ecole Polytechnique, France), Hans Metz (U. Leiden, The Netherlands), David Reznick (UC Riverside), Sergio Rinaldi (Politecnico di Milano, Italy), Joe Travis (Florida State), Thomas Tully (IUFM Paris, France), Minus Van Baalen (ENS Paris, France), Tom Van Dooren (U. Leiden, The Netherlands).

#### **Thesis Advisor and Postgraduate-Scholar Sponsor:**

Dr Jean Clobert, University of Paris; Dr Rick Michod, University of Arizona.

#### **Graduate Students and Post-doctoral Scholars:**

Olivier Renault, PhD 2001 (Mechanisms of persistence and extinction in rare species), curr Head Scientist, Conseil General 77, France

Claire Cadet, PhD 2002 (The evolution of dispersal under demographic stochasticity), curr post-doc, U of Aberdeen, UK

Oscar De Feo, PhD 2002 (Chaos and synchronization in nonlinear networks), curr Assoc Prof EPFL, Lausanne, Switzerland

Jean-Francois Le Galliard, PhD 2003 (Evolution of social traits in spatially heterogeneous populations), curr CNRS Research Scientist, Paris, France

Thomas Tully, PhD 2004 (Genetic, environmental and maternal factors of life-history variation in a collembola), curr Asst Prof, U of Paris, France  
Fabio Dercole, PhD 2002 (Ecological multistability and evolutionary reversals), curr Asst Prof, Politecnico di Milano, Italy  
Guillaume Chapron, PhD 2003 (Mathematical modelling for the biological conservation of large carnivores), curr Asst Prof, Ecole Normale Superieure, Paris, France  
Nicolas Loeuille, PhD 2004 (Adaptive dynamics of plant-herbivore interactions), curr Asst Prof U. Paris, France.  
Nicolas Champagnat, PhD 2004 (Mathematical theory of adaptive dynamics), curr INRIA Research Scientist, Sophia-Antipolis, France.  
Nathan Pike, EU Marie-Curie post-doc 2002-04, Ecole Normale Superieure, Paris, France  
Mathias Gauduchon, PhD 2006 (The origin and maintenance of cheating in mutualisms), curr Asst Prof U. Marseille, France.  
Gregory Paul, curr PhD, U of Paris (Multilevel selection and the evolution of senescence)  
Dominique Carval, curr PhD, U of Paris (Eco-evolutionary dynamics of endosymbiosis)  
Arnaud Pocheville, curr PhD, Ecole Normale Superieure, Paris, France (Niche construction and adaptation)  
Silvia De Monte, curr CNRS Research Scientist, Paris, France  
Matthew Herron, curr PhD, U of Arizona, Tucson (The evolution of division of labor)  
James Stegen, curr PhD, U of Arizona, Tucson (Adaptive diversification of community networks)  
Emily Jones, curr PhD, U of Arizona, Tucson (Eco-evolutionary dynamics of mutualisms)

Total Number of graduate students advised and postdoctoral scholars sponsored over last 5 years and current: 15 graduate students and 2 postdoctoral scholars