# DAVID DUNEAU, PhD

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Google scholar: https://scholar.google.fr/citations?user=VhsB4z0AAAAJ&hl=en

Website:


## Research positions

2020 to date: **Research fellow**
Instituto Gulbenkian de Ciência, PT & Univ. Toulouse, FR.

2015 - 2019: **Senior Postdoctoral Investigator**
Lab. Evolution and Biological Diversity (EDB) Univ. Toulouse, FR.

2012 - 2015: **SNSF Post-doctoral fellow**
Lazzaro Lab, Cornell University, USA.

2007 - 2011: **PhD student**
Ebert lab, Zoological Institute Basel, CH

2005 - 2006: **Master student**
Master 2: McCoy lab, Institute for Development Research (IRD), Montpellier, FR
Master 1: Thomas lab, Institute for Development Research (IRD), Montpellier, FR

## Career break

2018-2019: Worked (unemployed) part time for **parental care** (1 child now 5 years old)

## Education

2007-2011: **PhD student in Evolutionary parasitology** Basel Univ. (CH) (September 23, 2011)
*'Evolutionary and proximate mechanisms shaping host-parasite interactions: The case of* Daphnia magna *and its natural bacterial parasite* Pasteuria ramosa*.'*

2005-2006: **Master in Ecology and Evolutionary Biology**, Montpellier Univ. (FR)

2003-2004: **Bachelor in Organismal Biology** (Spec.: Animal Biology), Montpellier Univ. (FR)

## Fellowship Awards

- Stipends
  - **Research fellowship Gulbenkian Foundation** (EDB, Toulouse and Lisboa, 1.5 year; **40k€**)
  - **Post-doctoral fellowship Swiss NSF** (USA, Cornell university, 2 years; **76k€**)
  - **Post-doctoral prestigious and Marie Curie fellowship** (EDB, Toulouse, 1 year; **51k€**)
  - **Post-doctoral fellowship of LabEx TULIP** (EDB, Toulouse, 2 years; **112k**)
  - **Grant of the Emilia Guggenheim-Schnurr foundation** (4 months; **9K**)
- Funded projects
  - PI David Duneau and Lucie Zinger: Disentangling the factors shaping gut microbiota diversity across arthropod predators (EDB Toulouse Univ. funded by **LabEx CEBA; 2016; 20K**)
  - PI J-B Ferdy (D. Duneau co-PI, 15%-time allocation): Pathogens adaptation to their host's microbiome (EDB Toulouse Univ., funded by **"New frontiers" LabEx TULIP project; 2016; 82K**)
  - PI Patricia Beldade (D. Duneau co-PI, 20%-time allocation): Adaptive Developmental Plasticity: genetic and environmental components of phenotypic variation (**FCT Portugal; 2016; 192K**)
- 5 Travel grants to attend conferences

## My scientific contribution in a nutshell

Throughout these years I have been able to conduct research that has contributed:

- Showing that a wide variety of **Lyme disease**-conferring bacteria circulates among seabirds (Duneau *et al.* Infection, Genetics and Evolution 2008).
- Showing that by studying separately the different stages of the infectious process, one could
  - understand **the origin of the variation between host-parasite relationships** by attributing it to variation within each stage (my thesis and Ebert *et al.* Advances in parasitology 2016)
  - determine the **mechanism responsible for the coevolution between a host and its parasite** (Duneau *et al.* BMC Biology 2011, as well as all collaborative articles on the subject).
  - show that **moulting** is not only a weakness for crustaceans but could also **reduce the chances of infection** at the host penetration stage (Duneau *et al.* Proc. Roy. Soc. B 2012).
- Describing the **different phases of the bacterial proliferation stage within a host** and show that the duration of the initial phase (i.e. the time at which the host manages to control the parasite) determines the **outcome of the infection** (Duneau *et al.* eLife 2017).
- Showing, the same study, that chance (i.e. a combination of infection-related events with no easily detectable physiological effect) can play a decisive role in the outcome of infection (Duneau *et al.* eLife 2017). This work raises the importance that **stochasticity** could have in the evolution of host-parasite interactions.
- Describing the **dimorphism of response to bacterial infections** in *Drosophila melanogaster* (Belmonte *et al.* Front. Immuno. 2020). We have characterised part of the sexual dimorphism of *Drosophila* immune response to bacterial infections (Duneau *et al.* BMC Biology 2017).
- Proposing the idea that **parasites can adapt specifically to the sex they encounter most often**, which may partly explain the differences in prevalence and symptoms between males and females (Duneau and Ebert PLoS Biology 2012).
- Demonstrating that a bacterial parasite of ***Daphnia magna,* has indeed adapted to female hosts**, so that it has lost some of its ability to infect male hosts (Duneau *et al.* 2012 BMC Biology).
- Showing that **bacterial adaptation to a given step of an infection can compromise the adaptation to another step** (Faucher *et al.* mBio 2020).
- Studying the **genetic basis of insecticide resistance using GWAS** and population genetics in *Drosophila melanogaster* (Duneau *et al.* G3 2018)
- Studying the **genetic basis of phenotypic plasticity** in *Drosophila melanogaster* through an approach by GWAS (Lafuente *et al.* PLoS Genetics 2018) and show that:
  - there is no "super gene" of plasticity, since the genetic basis of plasticity at temperature is different depending on the part of the body studied.
  - plasticity alleles are selected in several populations and those that confer high plasticity are rare.
- Describing the occurrence of **sexual selection in natural population of a parthenogenetic species** (Duneau *et al.* BioRxiv 2020)
- Describing the **evolution of sperm morphology** in *Daphnia* and reveal that they have the **smaller sperm recorded in animal kingdom** (Duneau *et al.* BioRxiv 2020)
- Showing that **cancer can increase the risk of being predated** (Duneau and Buchon BioRxiv 2020)

## Academic leadership

- **Reviewer for 18 Journals:** Animal Behaviour; Biology Letters; BMC ecology; BMC Evolutionary Biology; Coevolution; Ecology and Evolution; Evolution; Epidemiology and Infection; Heredity; Invertebrate biology; Invertebrate Survival Journal; Nature communication; Oecologia; Oikos; Phil. transactions of the royal society; PLoS ONE; PNAS; Proceedings of the Royal Society B.
- **Reviewer for 4 funding agencies:** Sigma Xi awards research grants program; National Commission for Scientific and Technological Research of Chile, National Fund for Scientific Research of Belgium (NFWO), European Research Council (ERC).
- **Thesis committee and jury:**
  - Examiner for S. Pinaud at Univ. Perpignan (FR) supervised by B. Gourbal (2018)
  - Thesis committee M. Hanson at EPFL (CH) supervised by B. Lemaitre (2018)
- **Implication in the French Network "Réseau Ecologie des Interactions Durable" (REID)**
  - Organisation of the National meeting in Toulouse (2017)
  - Part of the organisation committee of the network.

## Summary of publications

Total: 28 publications of which 11 first author; 1 last and 11 *corresponding*
Google scholar: H-index: 16
Total citations: 811; 20 publ. out of 28 cited more than 10 times

| Journal | Impact factor | Number | Author | Grants | |
|---|---|---|---|---|---|
| Nature | 43 | 1 | 5/7 | | |
| Current Biology | 9,2 | 1 | 3/4 | | |
| PLoS Biology | 8,4 | 1 | **First** | | |
| eLife | 7,5 | 1 | **First** | | |
| BMC Biology | 6,7 | 3 | **First** | | |
| mBio | 6.7 | 1 | **Last** | | |
| Frontiers Immuno. | 6,4 | 1 | **co-last** | | |
| Molecular Ecology | 6,1 | 1 | 5/7 | | |
| PLoS Genetics | 5,5 | 1 | 2/3 | | |
| Evolutionary Applications | 5 | 1 | 3/4 | | |
| Proceeding Roy. Soc. B | 4,3 | 1 | **First** | | |
| Evolution | 4,2 | 1 | 2/4 | | |
| Genetics | 4,1 | 1 | 4/7 | | |
| Advances in Parasitology | 4 | 1 | 2/7 | | |
| Heredity | 3,8 | 2 | 3/4 ; 3/4 | | |
| Biology Letters | 3,3 | 1 | **First** | | |
| Behavioral Ecol. | 3,3 | 2 | **Co-first;** 6/8 | | |
| Dev. Comp. Imm. | 3,1 | 1 | **First** | | |
| G3 | 2,7 | 1 | **First** | | |
| Ecology and Evolution | 2,5 | 1 | 6/11 | | |
| Inf. Gen. Evol. | 2,5 | 1 | **First** | | |
| Parasitology | 2,5 | 1 | 5/9 | | |
| Mar. Ecol. Prog. Series | 2,3 | 1 | 4/5 | | |
| Acts of the BRG | Na | 1 | 2/3 | | |
| | Median IF only corresponding: **6.7** | **28** | | | |
| BioRxiv | | + 4 | 3 as first / 1 as last | | |

SNSF (Cornell)
TULIP (Toulouse)
CEBA (Toulouse)
FCT (Toulouse)

**List of publications from most recent to oldest**

(† corresponding author) [ORCID ID: 0000-0002-8323-1511]

(list with details on each publication and sorted by topic in a separate document)

*2020 to date:*

1. Faucher C, Mazana V, Kardacz M, Parthuisot N, Ferdy J-B, **Duneau† D**. (2021) *Step-specific adaptation and trade-off over the course of an infection by GASP-mutation small colony variants.* **mBio** 12:e01399-20. https://doi.org/10.1128/mBio.01399-20.
2. Belmonte RL, Corbally M-K, **Duneau D***†, Regan JC*† (2020) *Sexual dimorphisms in innate immunity and responses to infection in Drosophila melanogaster.* **Frontiers in Immunology** doi.org/10.3389/fimmu.2019.03075 (*equal contribution).
3. Bento G, Fields P, **Duneau D**, Ebert D. (2020) *An alternative route of bacterial infection is associated with a polymorphism at an alternative resistance locus.* **Heredity** doi.org/10.1038/s41437-020-0332-x
4. Pineaux M, Merkling T, Danchin E, Hatch S, **Duneau D**, Blanchard P, Leclaire S. (2020) *Sex and hatching order modulate the association between MHC-diversity and fitness in early-life stages of a wild seabird.* **Molecular Ecology** doi.org/10.17605/OSF.IO/DN5Y8.

*2019 and before:*

5. Corse E, Tougard C, Archambaud G, Agnèse J-F, Messu Mandeng FD, Bilong Bilong CF, **Duneau D**, Zinger L, Chappaz R, Xu CCY, Méglecz E, Dubut V (2019) *One-locus-several-primers: a strategy to improve the taxonomic and haplotypic coverage in diet metabarcoding studies.* **Ecology & Evolution** 9: 8
6. **Duneau D†**, Sun H, Revah J, San Miguel K, Kunerth HD, Caldas IV, Messer PW, Scott JG, Buchon N. (2018) *Genome wide analysis of resistance to an organophosphate and a pyrethroid insecticide*. **G3: Genes|Genomes|Genetics** doi: 10.1534/g3.118.200537
7. Lafuente E, **Duneau D**, Beldade P. (2018) *Genetic basis of thermal plasticity variation in* Drosophila melanogaster *body size*. **PLoS Genetics** 14: 9e1007686
8. **Duneau† D**, Lazzaro B. (2018) *Persistence of an extracellular systemic infection across metamorphosis in a holometabolous insect* **Biology Letters** 14: 2
9. **Duneau† D**, Ferdy JB, Revah J, Kondolf HC, Ortiz GA, Lazzaro BP, Buchon N. (2017) *Stochastic variation in the initial phase of bacterial infection predicts the probability of survival in* D. melanogaster. **eLife** 6: e28298 (Score 8 in F1000Prime RECOMMENDED)
10. **Duneau† D**, Kondolf HC, Im JH, Ortiz GA, Chow C, Fox MA, Eugénio AT, Buchon N, Lazzaro BP. (2017) *The Toll pathway underlies host sexual dimorphism in resistance to both Gram-negative and positive-bacteria in Drosophila* **BMC Biology** 15: 1
11. Ebert D, **Duneau D**, Hall M, Luijckx P, Andras J, Du Pasquier L, Ben-Ami F. (2016) *A population biology perspective on the stepwise infection process of the bacterial pathogen* Pasteuria ramosa *in* Daphnia. **Advances in parasitology** 91: 265-310
12. **Duneau† D**, Ebert D, Du Pasquier L. (2016) *Infections by* Pasteuria *do not protect its natural host* Daphnia magna *from subsequent infections* **Developmental & Comparative Immunology** 57: 120-125
13. Avila F, Cohen A, Ameerudeen F, **Duneau D**, Suresh S, Mattei A, Wolfner M. (2015) *The D*rosophila *mating plug protein, PEBme, is required to maintain the ejaculate within the female reproductive tract at the termination of copulation.* **Genetics** 200: 1-9
14. Luijckx P, **Duneau D**, Andras J, Ebert D (2014) *Cross-species infection trials reveal cryptic parasite varieties and a putative polymorphism shared among host species* **Evolution** 68: 577-586

15. Luijckx P, Fienberg H, **Duneau D**, Ebert D (2013) *A matching-allele model explains host resistance to parasites* **Current Biology** 23: 1085-1093 (Score 2 in F1000Prime RECOMMENDED)

16. **Duneau**† **D**, Ebert D (2012) *Host sexual dimorphism and parasite adaptation* **PLoS Biology** 10: 2

17. **Duneau**† **D**, Luijckx P, Ruder L, Ebert D (2012) *Sex-specific effects of a parasite evolving in a female-biased host population* **BMC Biology** 10: 104

18. **Duneau**† **D**, Ebert D (2012) *The role of molting in parasite defense* **Proceedings of the Royal Society of London B** 279: 3049-3054

19. **Duneau**† **D**, Luijckx P, Ben-Ami F, Laforsch C, Ebert D (2011) *Resolving the infection process reveals striking differences in the contribution of environment, genetics and phylogeny to host-parasite interactions* **BMC Biology** 9: 11

20. Luijckx P, Fienberg H, **Duneau D**, Ebert D (2011) *Resistance to a bacterial parasite in the crustacean* Daphnia magna *shows Mendelian segregation with dominance* **Heredity** 108: 547–551

21. Ponton F, Otalora-Luna F, Lefevre T, Guerin PM, Lebarbenchon C, **Duneau D**, Biron DG, Thomas F (2011) *Water-seeking behavior in worm-infected crickets and reversibility of parasitic manipulation* **Behavioral Ecology** 22: 392-400

22. Gómez-Díaz E, Doherty P Jr, **Duneau D**, McCoy KD (2010) *Cryptic vector divergence masks vector-specific patterns of infection: an example from the marine cycle of Lyme borreliosis.* **Evolutionary Applications** 3: 391-401.

23. Ponton* F, **Duneau* D**, Sanchez M, Courtiol A, Terekhin A, Budilova, EV, Renaud F, Thomas F (2009) *Effect of parasite-induced behavioral alterations on juvenile development.* **Behavioral Ecology** 20: 1020-1025 (* equal contribution)

24. **Duneau D**, Boulinier T, Gomez-Diaz E, Petersen A, Tveraa T, Barrett RT, McCoy KD (2008) *Prevalence and diversity of Lyme borreliosis bacteria in marine birds* **Infection, Genetics and Evolution** 8: 352-359

25. McCoy KD, **Duneau D**, Boulinier T (2008) *Spécialisation de la tique des oiseaux marins et diversité des bactéries du complexe* Borrelia burgdorferi sensu lato*, agents de la maladie de Lyme : effets en cascade dans les systèmes à vecteur.* **Les actes du BRG** 277-291 (french publication with reviewing committee)

26. Ponton F, Lebarbenchon C, Lefèvre T, Biron DG, **Duneau D**, Hughes DP, Thomas F (2006) *How parasitic Gordian worms cut the Gordian knot: a novel solution to predation upon the host.* **Nature** 440: 756

27. Ponton F, Lebarbenchon C, Lefèvre T, Thomas F, **Duneau D**, Marché L, Renault L, Hughes DP, Biron DG (2006) *Hairworm anti-predator strategy: a study of causes and consequences* **Parasitology** 133: 631-638

28. Ponton F, Biron DG, Joly C, **Duneau D**, Thomas F (2005) *Ecology of populations parasitically modified: a case study from a gammarid (*Gammarus insensibilis*)-trematode (*Microphallus papillorobustus*) system.* **Marine Ecology-Progress Series** 299: 205-215

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**List of publications in BioRxiv**

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29. Rodrigues YK, van Bergen E, Alves F, **Duneau D***, Beldade P*. *Complex effects of day and night temperature fluctuations on thermally plastic traits in an experimental model of adaptive seasonal plasticity.* BioRxiv) (*contribution égale)

30. **Duneau**† **D**, Altermatt F, Ferdy J-B, Ben-Ami F, Ebert D. *Estimation of the propensity for sexual selection in a cyclical parthenogen*. doi.org/10.1101/2020.02.05.935148.

31. **Duneau**† **D**, Möst M, Ebert D. *Evolution of sperm morphology in* Daphnia *species.* doi.org/10.1101/2020.01.31.929414

32. **Duneau D**, Nicolas Buchon. *Gut cancer increases the risk for* Drosophila *to be preyed upon by hunting spiders*. doi.org/10.1101/2020.07.01.182824

## List of thesis chapters

1. Lafuente E, **Duneau D**, Beldade P. *Genetic architecture of plasticity for pigmentation components in* Drosophila melanogaster.
2. Rodrigues YK., Duneau D*, Beldade P*. *Seasonal and sexual dimorphism in immunity in a thermal plasticity model.* (*equal contribution)

## Scientific communications

(talks only as speaker and posters only as first author)

*2020:*

- Seminar at the Institute of Biology - Zoology, Freie Universität Berlin, 11/2020 (online talk; invited by Olivia Judson, Jens Rolf and Sophie Armitage)
- Seminar New voices in Infection Biology, Max Planck Institute for Infection Biology, Berlin, 10/2020 (online talk; invited by Igor Iatsenko) **Recording at:** https://youtu.be/e0N7eg-U0hI
- Seminar at Department DGIMI, Montpellier University, 10/2020 (online talk; invited by Alain Givaudan)

*2019 and before:*

- Innsbruck University, Innsbruck, Austria- 11/2019 (talk; Invited by Markus Möst)
- Conference ESEB (2nd joint congress), Montpellier, FR - 08/2018 (Poster)
- Edinburgh University, Edinburgh, UK - 06/2018 (talk; Invited by Sarah Reece)
- EPFL, Lausanne, CH -04/2018 (talk; Invited by Bruno Lemaitre)
- University of Burgundy, Dijon, FR - 12/2017(talk; Invited by Thierry Rigaud)
- University of Montpellier (SEEM), Montpellier, FR - 12/2017(talk; Invited by Karen McCoy)
- Lectures Jacques Monod "Open questions in ecology and evolution in infectious diseases: from fundamental research to evolutionary medicine" - Roscoff Biological Station, FR - 10/2017 (Poster)
- Insect Biology Research Institute, Tours, FR - 10/2017 (talk; Invited by Joel Meunier)
- Conference Immuninv2017, Lyon, FR - 06/2017 (Contributed talk)
- CNRS, Gif-sur-Yvette, EN - 04/2016 (talk; Invited by Frédéric Mery)
- Development BiologyCentre, Toulouse, FR - 04/2016 (talk; Invited by Alain Vincent)
- Conference LabEx TULIP, Toulouse, FR - 03/2016 (talk; Invited by Etienne Danchin)
- Reid Annual Conference, Poitiers, FR - 03/2016 (Contributed talk)
- Conference 15ESEB, Lausanne, CH - 08/2015 (Contributed talk)
- Institute for advanced study, Toulouse, FR - 06/2015 (talk; Invited by Arnaud Togneti)
- Lectures Jacques Monod "Infectious diseases as drivers of evolution: the challenges ahead" - Roscoff Biological Station, FR - 09/2014 (contributed talk)
- Seminar at the Center for infectious disease dynamics. PennState University, University Park, PA, USA - 04/2014 (talk; Invited by David Hughes)
- Drosophila research conference, San Diego, USA - 03/2014 (poster)

- Seminar at the department of Evolution, Ecology and Genetics. Australian National University, Canberra, Australia - 02/2014 (talk; Invited by Hanna Kokko).
- Seminar at the department of Ecology and Evolutionary Biology. Rochester University, Rochester, USA - 11/2013 (talk; Invited by John Jaenike).
- Conference 14ESEB, Lisbon, Portugal - 08/2013 (poster)
- Drosophila research conference, Washington DC, USA - 03/2013 (poster)
- Conference ESEB (joint congress) Ottawa, Canada - 08/2012 (contributed talk)
- Department of Evolutionary Biology of Cornell University, Ithaca, USA - 2012 (institutional talk)
- Conference 13th ESEB Tubingen, Germany - 08/2011 (contributed talk)
- Conference Swiss-Russian Seminar, Freiburg, CH - 2010 (contributed talk)
- Conference 16th EMPSEB,Wierzba, Poland - 2010 (contributed talk)
- *Institute for Development Research* (IRD), Montpellier, FR - 2010 (talk; Invited by Karen McCoy)
- Conference Biology10, Neuchatel, CH - 2010 (poster)
- Conference 12 ESEB, Turin, Italy - 2009 (contributed talk)
- Conference 15th EMPSEB,Shoorl, Netherlands -2009 (contributed talk)
- *Annual meeting* between host parasite group from Zurich (ETH) and Basel (university). University of Basel, CH - 2009 (institutional talk)
- Research seminar, University of Basel, CH - 2008 (institutional talk)

## Student supervision

(1 thesis as co-director, 3 Master 2, 12 undergrads)

- **PhD student**
  - Yara Santos Rodrigues *Regulation and evolution of developmental plasticity in insect pigmentation: temperature and immunity interactions.* (Co-supervision with P. Beldade from Lisbon Univ.; 2015 - Oct. 2020)
- **Master 2 students**
  - Lafont P *A stochastic model for estimating immune parameters from the infection dynamics of a pathogen.* (co-supervision with JB Ferdy (EDB, Toulouse Univ.); 2019)
  - Lemoine M *Ecological and evolutionary determinants of gut microbial communities in predatory insects.* (Co-supervision with L. Zinger (ENS Paris); 2017)
  - Mazana V *Role of phenotypic switching in the division of labor during infection.* (2017)
- **Undergraduate students**
  - Lafont P *Intra-host infection dynamic: a stochastic modelling approach.* Co-supervision of Master 1 (2018)
  - Kardaz M *Likely effect of phenotypic switching in a sharing of spots when infecting the bacterium* Xenorhabdus nematophila. L3 (2017)
  - Mazana V *Probable effect of phenotypic switching in a sharing of spots when infecting the bacterium* Xenorhabdus nematophila. Master 1 (2016)
  - Kondolf H *Sexual dimorphism in response against parasites.* Senior (2014, 2015)
  - Ortiz G *Sexual dimorphism in response against parasites.* Junior (2013 - 2015)

- Fox M *Sexual dimorphism in response against parasites.* Junior (2012 - 2015)
- Chow C *Pathogen evolution under sex-restricted transmission.* Senior (2013)
- Edraki A *Effect of Sigma virus on* D. melanogaster *behaviour.* Senior (2013)
- Ruder L *Effect of a commonly parasite of female hosts on male hosts*. 3rd year Bachelor (2010)
- Supervisor of scientific projects for undergraduate for 1 month (60hr) (2008 - 2010). 3rd year Bachelor
- Eichin D. *Specific immune system in* Daphnia magna. 3rd year Bachelor (2009)
- Gygli S. *Temperature tolerance of* Octosporea bayeri*, parasite of* Daphnia magna. 2nd year Bachelor (2009)
- Hofer L. *Temperature resistance of* Pasteuria ramosa*, parasite of* Daphnia magna. 2nd and 3rd year Bachelor (2009, 2010))

## Workshop

- "Transcriptome assembly, automatic annotation and data mining" (32h), IGC, Lisbon
- "Introduction to Modeling in Ecology and Evolutionary Biology" Cornell University (Ithaca, USA) Fall 2012 semester
- "Introductory Bioinformatics" (35h), IGC, Lisbon.

## Scientific outreach

- De Dinechin D, Deguine JP, **Duneau D** (2006) *L'Homme de Florès. La découverte d'une nouvelle espèce humaine.* **Annales de la Société d'Horticulture et d'Histoire Naturelle de l'Hérault** 146 : 38-45
- **Duneau D**, Deguine JP, De Dinechin M, Blondel J (2006) *L'homme de Flores. Nanisme et gigantisme insulaire.* **Annales de la Société d'Horticulture et d'Histoire Naturelle de l'Hérault** 146 : 57-66
- Deguine JP, De Dinechin M, **Duneau D** (2006) *L'Homme de Florès. L'évolution de l'Homme et Homo floresiensis.* **Annales de la Société d'Horticulture et d'Histoire Naturelle de l'Hérault** 146 : 87-94
- **Seminar for high school teachers.**
- **Epidemiology Fact Sheets** *Mosquito Biology for the Homeowner*
- **Documentaire scientifique** (52min) « *Toto le nemato.* », Price Buffon 2008 « Festival Paris science »