

Vincent Debat

Date of birth: March 18, 1974

Place of birth: Paris, France

Citizenship: French

CONTACT

Muséum National d'Histoire Naturelle
Département Systématique et Evolution
UMR7205 Origine Structure et Evolution de la Biodiversité
45 rue Buffon
75005 Paris

Phone: +33 (0)1 40 79 30 54

Fax: +33 (0)1 40 79 56 79

Email: debat@mnhn.fr

EDUCATION

1997-2000 PhD Evolutionary Biology (J.-C Auffray) Université Montpellier II, France
1996- 1997 Msc Paleontology Université Montpellier II, France
1993-1996 Undergraduate studies (Population biology) Université Paris VI, France

Positions

Since February 2006, Assistant professor MNHN, Paris
2004-2006 Postdoc researcher University of Manchester, UK (CP Klingenberg, PI)
2002-2003 Postdoc researcher University of California Riverside, USA (DA Roff, PI)
2001-2002 Postdoc researcher CNRS Gif/Yvette, France (JR David, PI)

GRANTS

2008 : collaboration in ANR (Macrocentrus)
2006-2007 Marie Curie reintegration grant (40,000 €)
2003-2005 Marie Curie Intra european postdoctoral fellowship (200,000 k€)
2002 : Marie Curie Intra european postdoctoral fellowship (declined)
2002 : Lavoisier grant (declined)
1997-2000 : PhD fellowship MENRT
1995 : Fondation Elf grant (10 kF)

REVIEWER

Evolution (6); *Trends in Ecology and Evolution* (3); *Heredity* (3); *Journal of Evolutionary Biology* (2); *Annales de la Société Entomologique de France* (1); *Biological Journal of the Linnean Society* (1); *BMC Evolutionary Biology* (1); *Genetica* (1); *Journal of Genetics* (1); *Journal of Heredity* (1); *Journal of Insect Physiology* (1); *Infection Genetics and Evolution* (1); *Integrative and Comparative Biology* (1); *Mammalia* (1); *Proceedings of the Royal Society Biology* (1); *Zootaxa* (1)
Books: Springer (1);
Book chapters: Wiley-Blackwell (1)
Grants: ANR (2)

TEACHING EXPERIENCE

Graduate courses

Morphometrics

Data analysis

The genetic bases of morphological variation

Phenotypic plasticity: genetics and evolution

Canalization, robustness and evolution

Symmetry and asymmetry in biology

Integration and modularity in evolutionary biology

Undergraduate courses:

Scientific english

Introduction to statistics

Introduction to morphometrics

Zoology (University Paris VII)

PUBLICATIONS (h index = 9)

Peer reviewed papers

- 16- Klingenberg, C.P., **V. Debat** and D.A. Roff. (2010) Quantitative genetics of shape in cricket wings: developmental integration in a functional structure. ***Evolution*** 64-10: 2935-2951.
- 15- **Debat V.**, Debelle A. and I. Dworkin. (2009) Plasticity, canalization and developmental stability of the *Drosophila* wing: joint effects of mutations and of developmental temperature. ***Evolution*** 63-11: 2864–2876.
- 14- Loh, R. David J.R., **Debat V.** and B.C. Bitner-Mathé. (2008). Adaptation to different climates results in divergent phenotypic plasticity of wing size and shape in an invasive drosophilid. ***Journal of Genetics*** 87: 209–217.
- 13- **Debat, V.**, Cornette, R, Korol, A ., Nevo E., Soulet D. and JR. David. (2008). Multidimensional analysis of *Drosophila* wing in Evolution canyons. ***Journal of Genetics*** 87: 407–419.
- 12- Volobouev, V., J.C. Auffray, **V. Debat**, C. Denys, J.C. Gautun and M. Tranier. (2007) Species delimitation in the *Acomys cahirinus - dimidiatus* complex (*Rodentia, Muridae*) inferred from chromosomal and morphological analyses. ***Biological Journal of the Linnean Society***. 91: 203-214.
- 11- **Debat, V.**, C. C. Milton, S. L. Rutherford, A. A. Hoffmann and C. P. Klingenberg. (2006). Hsp90 and the quantitative variation of wing shape in *Drosophila melanogaster*. ***Evolution*** 60(12): 2529–253
- 10- Breuker, C. J., **V. Debat** and C. P. Klingenberg (2006). Functional Evo devo. ***Trends in Ecology and Evolution***, 21 (9): 488-492
- 9- Pétavy, G., J.R. David, **V. Debat**, C. Pertoldi and B. Moreteau (2005). Phenotypic and genetic variability of sternopleural bristle number of *Drosophila melanogaster* under daily thermal stresses: developmental instability and antisymmetry. ***Evolutionary Ecology Research***. 8: 149-167.
- 8- Bégin, M., D. A. Roff and **V. Debat** (2004) The effect of temperature and wing morphology on quantitative genetic variation in the cricket *Gryllus firmus*, with an appendix examining the statistical properties of the Jackknife–MANOVA method of matrix comparison. ***Journal of Evolutionary Biology*** 17: 1255-1267
- 7- Ayrinhac, A., **V. Debat**, P. Gibert, A.-G. Kister, H. Legout, B. Moreteau, R. Vergilino and J. R. David (2004) Cold adaptation in geographical populations of *Drosophila melanogaster* :

phenotypic plasticity is more important than genetic variability . *Functional Ecology* 18: 700-706.

- 6- Pétavy, G., **V. Debat**, P. Gibert, B. Moreteau and J. R. David (2004) Specific effects of cycling stressful temperatures upon phenotypic and genetic variability of size traits in *Drosophila melanogaster*. *Evolutionary Ecology Research* 6: 873-890.
- 5- **Debat, V.**, M. Bégin, H. Legout and J. R. David (2003) Allometric and non-allometric components of *Drosophila* wing shape respond differently to developmental temperature. *Evolution* 57(12): 2773-2784.
- 4- Quilleveré, F., **V. Debat** and J. -C. Auffray (2002) Ontogenetic and evolutionary patterns of shape differentiation during the initial diversification of Paleocene Acariniids (Planktonic foraminifera). *Paleobiology* 4 (28): 435-448.
- 3- **Debat, V.** and J. R. David (2002) Analyzing phenotypic variation: when old-fashioned means up-to-date. *Journal of Biosciences* 27 (3): 101-103.
- 2- **Debat, V.** and P. David (2001) Mapping phenotypes: canalization, plasticity and developmental stability. *Trends in Ecology and Evolution* 16 (10): 555-561.
- 1- **Debat, V.**, P. Alibert, P. David, E. Paradis and J. -C. Auffray (2000) Independence between canalisation and developmental stability in the skull of the house mouse. *Proceedings of the Royal Society of London , Biology* 267 : 423-430

Peer reviewed book chapter

Auffray J. -C., **V. Debat** and P. Alibert (1999) Shape asymmetry and developmental stability. In *On Growth and Form. Spatio temporal pattern formation in biology* . M.A.J. Chaplain (ed). John **Wiley** & sons, Chiesester pp 309-324.

Wide audience papers

Alibert, P., Claude J., **Debat, V.**, Garnier, S. and P. Neige (2010) Les contraintes. In "Biologie Evolutive" Ed. Thomas, F., Raymond, M. & Lefebvre T., De Boeck.

Debat V. L'environnement sculpteur de gènes (2006) *La Recherche*. 398: 58-62.

Thesis

PhD thesis (2000) : Etude théorique et morphométrique du contrôle de la variation morphologique. Application à des modèles actuels et fossiles. Dir J-C Auffray (Université Montpellier II)

Msc thesis (1997) : La variation morphologique comme indice de stress des populations fossiles? Analyse morphométrique du contour dentaire d'*Acomys cahirinus*. Dir J-C Auffray (Université Montpellier II)

COMMUNICATIONS IN CONFERENCES

International conferences

2010 ^{3rd} *European congress for Evolutionary Developmental biology* (Paris, France). **Debat V.**, CP Klingenberg and D A Roff. Quantitative genetics of phenotypic plasticity to temperature: the case of *Drosophila melanogaster* and *Gryllus firmus*. **Invited**

2008 *International Congress of Zoology VI* (Paris, France) August 29-31 (poster). Debelle, A., I. Dworkin and **V. Debat**. Plasticity, canalization and developmental stability: the joint effects of mutations and temperature.

^{2nd} *European congress for Evolutionary Developmental biology* (Ghent, Belgium).

Debat V. and Van Dooren, T. Robustness and evolutionary capacitance: on the diffusion between adaptation and constraint. **Invited**

- 2007** *Joint Meeting of the Society for the Study of Evolution, Society of Systematic Biologists, and American Society of Naturalists.* (Christchurch, New Zealand) June 16-20. **Debat V.**, S. Bloyer, N. Navarro, F. Peronnet and J. Deutsch. Cyclin G: a candidate gene for the control of fluctuating asymmetry in *Drosophila*
- 2005** *10th Congress of the European Society for Evolutionary Biology* (Krakow, Poland) August 15-20. **Debat V.**, C. C. Milton, S. L. Rutherford, C. P. Klingenberg and A. A. Hoffmann. Hsp90 and the quantitative variation of wing shape in *Drosophila melanogaster* **Invited**
- Joint Meeting of the Society for the Study of Evolution, Society of Systematic Biologists, and American Society of Naturalists.* University of Alaska (Fairbanks, USA) June 10-14. **Debat V.**, C. C. Milton, S. L. Rutherford, C. P. Klingenberg and A. A. Hoffmann. Hsp90 and the quantitative variation of wing shape in *Drosophila melanogaster*
- 19th European Drosophila Research Conference* (Eger, Hungary) Aug 31 – Sep 3. **Debat V.**, C. C. Milton, S. L. Rutherford, C. P. Klingenberg and A. A. Hoffmann. Hsp90 and the quantitative variation of wing shape in *Drosophila melanogaster*
- 2004** *XXII International Congress of Entomology* (Brisbane, Australia) August 15-21. **Debat V.**, C. P. Klingenberg and D. A. Roff "The shape of the male fore-wing in the cricket *Gryllus firmus*: genetic, environmental variation and asymmetry" **Invited**
- Joint Meeting of the Society for the Study of Evolution, Society of Systematic Biologists, and American Society of Naturalists.* Colorado State University (Fort Collins, USA) June 26-30. **Debat V.**, C. P. Klingenberg and D. A. Roff. The shape of the male fore-wing in the cricket *Gryllus firmus*: genetic, environmental variation and asymmetry.
- 2003** *Joint Meeting of the Society for the Study of Evolution, Society of Systematic Biologists, and American Society of Naturalists.* California State University (Chico, USA) June 20-24. **Debat, V.** A perspective on the analysis of phenotypic plasticity. Effects of developmental temperature on the size and shape of *Drosophila* wing
- 2002** *International Congress of Systematics and Evolutionary Biology (ICSEB).* (Patras, Greece), Sep 9-16. **Debat, V.** Phenotypic plasticity, canalization and developmental stability: effects of temperature on *Drosophila* wing **Invited**
- 1999** *D'Arcy Thompson's Meeting : 'On growth and Form, Spatio-temporal Pattern Formation in Biology'.* (Dundee, Scotland) Oct. (Poster). **Debat V.** and Auffray J-C. Fluctuating asymmetry and variability of the skull of the house mouse : a morphometric approach.
- 1998** *Euro-American Mammal congress* (Santiago de Compostela, Spain) (poster). **Debat V.** Alibert P. and J. -C Auffray. Geometric morphometrics and the appraisal of Fluctuating Asymmetry

National conferences

- 2007** 5^{ème} Symposium national de Morphométrie, Paris. **Debat V.**, Bloyer S., Navarro N., Peronnet F. et J. Deutsch. Cycline G, asymétrie fluctuante et canalisation
- 2003** 3^{ème} Symposium national de Morphométrie, Paris. **Debat V.**, C. C. Milton, S. L. Rutherford, C. P. Klingenberg et A. A. Hoffmann. Hsp90 est elle un tampon moléculaire de variabilité génétique? Le cas de l'aile de *Drosophila*
- 2001** 2^{ème} Symposium national de morphométrie. Paris. **Debat, V.**, J. Michaux et J. C. Auffray - Canalisation et extinction du rongeur insulaire *Malpaisomys insularis*.
- 2000** *Colloque Evolution et Environnement des Hominidés*, Poitiers. **Debat, V.**, J. Michaux et J. C. Auffray - Analyse morphométrique d'une extinction en milieu insulaire: impact de l'homme sur le rongeur *Malpaisomys insularis*.

- 1998** *Symposium Morphométries et Biologie Evolutive*, Paris. **Debat, V.**, P. Alibert, P. David, E. Paradis et J. -C. Auffray - Canalisation et stabilité de développement chez la souris domestique : deux mécanismes indépendants ?
- 1997** *XIXème réunion du Groupe de Biologie et de Génétique des Populations (GBGP)*. Perpignan. **Debat V.** et J.-C. Auffray. Variation morphologique : un indice de stress des populations fossiles ? Analyse morphométrique du contour dentaire chez *Acomys cahirinus*.

INVITED SEMINARS

In France:

- 2000: Séminaires du mardi (ISEM-CEFE, Montpellier). Invité J-C Auffray
Séminaires BioGéosciences (Dijon). Invité par Paul Alibert
Musée de l'homme (Paris). Invité par Evelyne Heyer
- 2001: PGE (Gif sur Yvette). Invité par Jean R David
- 2004: Département Systématique et Evolution (MNHN-Paris) Invité par Michel Veuille
- 2005: Laboratoire de Biométrie (Lyon). Invité par Patricia Gibert
- 2006: Séminaires Drosophiles de France (DIF-Paris). Invité par Frédérique Peronnet
- 2007: Institut Jacques Monod (Paris). Invité par Marie Anne Felix
- 2009: SFP société Française de Physique (Lyon). Invité par Marianne Brinet

International:

- 2000: Archeozoology Lab. – (Jerusalem, Israël). Invited by Eitan Tchernov
- 2002: Biology department seminars (Riverside, USA). Invited by Derek A Roff
- 2003: Integrative biology seminars (Manchester, UK). Invited by Chris Klingenberg
- 2005: Evolutionary biology department (Leiden, Netherlands). Invited by Patricia Beldade
- 2008: Evolutionary biology department (Barcelona, Spain). Invited by Mauro Santos

ORGANIZED SYMPOSIA

- 2008** *2nd European congress for Evolutionary Developmental biology*. (Ghent, Belgium).
Co-organiser (with Dr T. Van Dooren) of the symposium “*Canalization, robustness and developmental stability*”
- 2005** *10th Congress of the European Society for Evolutionary Biology*. (Krakow, Poland)
Co-organizer (with Dr C. J. Breuker) of the symposium “*Functional Evo-devo*”