Florence (Flo) Débarre

email: florence.debarre@normalesup.org web: http://www.normalesup.org/~fdebarre/

Google Scholar: http://scholar.google.com/citations?user=WkZgrYsAAAAJ

ORCID: 0000-0003-2497-833X Scopus Author ID: 22233654600

Address: Centre Interdisciplinaire de Recherche en Biologie (CIRB)

Collège de France

CNRS UMR 7241– Inserm U1050 11, Place Marcelin Berthelot 75231 Paris Cedex 05, France

Academic appointments

Permanent researcher (CR CNRS) at the Centre for Interdisciplinary Research in Biology (CIRB), Paris (France).

Funding: ANR grant (PI), CNRS.

2014–2015 Fellow of the College of Life Sciences, Wissenschaftskolleg zu Berlin (Germany).

2013–2015 Lecturer (= Assistant Professor) in Evolutionary Theory, University of Exeter, Cornwall campus (UK).

2012–2013 Biodiversity Postdoctoral Fellow, University of British Columbia, Vancouver (Canada).

Funding: NSERC-CREATE through UBC Biodiversity Research Centre.

2011–2012 Postdoc with M. Doebeli and S. Nuismer, University of British Columbia, Vancouver (Canada) and University of Idaho, Moscow (USA).

Funding: NSF Grant to S. Nuismer.

Education

2007–2010 PhD in Theoretical Evolutionary Ecology (Université Montpellier II and Centre for Functional and Evolutionary Ecology (CEFE), France); Advisor: S. Gandon.

MSc in Ecology and Evolution (École Normale Supérieure and Université Paris 6).
M2 thesis supervised by S. Gandon and T. Lenormand, Montpellier (FR) [5 months in 2007].
M1 thesis supervised by S. Bonhoeffer and R. Regoes, ETH Zürich (CH) [5 months in 2006];

2004–2005 BSc in Biology (École Normale Supérieure, Paris, France).

BSc thesis supervised by C. de Mazancourt, Imperial College (UK) [2 months in 2005].

Teaching and Student supervision

Teaching

01/2017 Summer school on Mathematical Biology, ICTP-SAIFR, São Paulo, Brazil.

2015, 2016 Jury member, Master 1 defences, École Normale Supérieure, Paris.

Spring 2014 Trends in Ecology and Evolution, (BIO3131, Exeter). Module leader.

04/2013 Two lectures in Quantitative Methods in Ecology and Evolution, (Biology 501, UBC).

01/2013 Guest lectures on Game theory, in Evolutionary Ecology (Biology 418, UBC).

- 2011 *Qualification aux fonctions de Maître de Conférences* (= certification to teach at the level of an Assistant Professor in France)
- 2008–2011 Teaching assistant (monitorat) at Université Montpellier 2 (96h per year)
 - Introduction to Organismal Biology, lab instruction (1st year students)
 - Introduction to Ecology, tutorials and lab instruction (2nd and 3rd year students)

Student and postdoc supervision

- Valentin Cocco and Alice L'Huillier (undergraduate project),
- 2016–2018 Pascal Campagne and Thomas Garcia (postdocs, funding: ANR),
 - 2016 Lena Klay (undergraduate summer project).
 - 2016-... François Bienvenu (PhD, co-supervised with A. Lambert),
 - 2014 Joseph Denton (Master 1, co-supervised with F. Massol),
- 2013–2014 Alice Ekroth, Nick Hawkes and Emile Carstens (UG project),
 - Fanny Gascuel (Master 1, co-supervised with C. Brouat and M. Choisy).

Publications

Please check my Google Scholar profile, at http://scholar.google.ca/citations?user=WkZgrYsAAAAJ, for bibliometrics.

Peer-reviewed articles

- [A17] **Débarre F**, Fidelity of parent-offspring transmission and the evolution of social behavior in structured populations. *Journal of Theoretical Biology* 420 26–35.
- [A16] **Débarre F**, Otto SP, Evolutionary dynamics of a quantitative trait in a finite asexual population. *Theoretical Population Biology* 108 75–88.
- [A15] Massol F, **Débarre F**, Evolution of dispersal in spatially and temporally variable environments: the importance of life cycles, *Evolution* 69: 1925–1937.
- [A14] **Débarre F**, Yeaman S, Guillaume F, Evolution of quantitative traits under a migration-selection balance: when does skew matter?, *The American Naturalist* 186 S37–S47.
- [A13] **Débarre F** Fitness costs in spatially structured environments. *Evolution* 69: 1329-1335.
- [A12] **Débarre F**, Nuismer SL, Doebeli M (2014) Multidimensional (co)evolutionary stability. *The American Naturalist* 184(2): 158-171.
- [A11] **Débarre F**, Hauert C, Doebeli M (2014) Social evolution in structured populations. *Nature Communications* 5: 3409 doi:10.1038/ncomms4409.
- [A10] Vines TH, Albert AYK, Andrew RL, **Débarre F**, Bock DG, Franklin MT, Gilbert KJ, Moore J-S, Renaut S, Rennison DJ (2014) The availability of research data declines rapidly with article age. *Current Biology* 24(1): 94-97.
- [A9] Gascuel F^M , Choisy M, Duplantier J-M, **Débarre F***, Brouat C* (2013) Host Resistance, Population Structure and the Long-Term Persistence of Bubonic Plague: Contributions of a Modelling Approach in the Malagasy Focus, *PLoS Computational Biology* 9(5): e1003039.

^M Master student; * Equal contribution in supervising the study.

- [A8] **Débarre F**, Ronce O, Gandon S (2013) Quantifying the effects of migration and mutation on adaptation and demography in spatially heterogeneous environments, *Journal of Evolutionary Biology* 26(6): 1185-1202.
- [A7] **Débarre F** (2012) Refining the conditions for sympatric ecological speciation, *Journal of Evolutionary Biology* 25(12): 2651-2660.
- [A6] **Débarre F**, Lion S, van Baalen M, Gandon S (2012) Evolution of host life-history traits in a spatially structured host-parasite system, *The American Naturalist* 179(1): 52-63.
- [A5] **Débarre F**, Lenormand T (2011) Distance-limited dispersal promotes coexistence at habitat boundaries: reconsidering the competitive exclusion principle. *Ecology Letters* 14(3): 260-266.
- [A4] **Débarre F**, Gandon S (2011) Evolution in heterogeneous environments: between soft and hard selection. *The American Naturalist* 177(3): E84-E97.
- [A3] **Débarre F**, Gandon S (2010) Evolution of specialization in a spatially continuous environment. *Journal of Evolutionary Biology* 23:1090-1099.
- [A2] **Débarre F**, Lenormand T, Gandon S (2009) Evolutionary Epidemiology of Drug-Resistance in Space *PLoS Computational Biology* 5(4): e1000337.
- [A1] **Débarre F**, Bonhoeffer S, Regoes RR (2007) The effect of population structure on the emergence of drug resistance during influenza pandemics *J R Soc Interface* 4(16): 893-906

Chapters in collective volumes

[B1] **Débarre F** and Gandon S (2008) Épidémiologie évolutive des maladies infectieuses. *In* Introduction à l'Épidémiologie Intégrative des Maladies Infectieuses et Parasitaires (eds. Guégan J-F & Choisy M), pp. 347-374. De Boeck Université, Collection Masters, Louvain-la-Neuve, Belgique.

Conferences and seminars

Conferences

- Aug 2017 Invited talk, European Society for Evolutionary Biology (ESEB), Groningen (NL)
- July 2017 Talk, Mathematical Models in Ecology and Evolution (MMEE), London (UK)
- Apr 2017 Invited talk, British Applied Math Colloquium (BAMC) 2017, Guildford (UK)
- Apr 2017 Invited talk, Modeling Biological Evolution (MBE), Leicester (UK)
- Feb 2017 Invited talk, Gordon Research Conference (GRC) on Speciation, Barga (Italy).
- Sept 2016 Invited talk, Japanese Society for Mathematical Biology (JSMB), Fukuoka (Japan).
- July 2016 Talk, Joint ECMTB-SMB Meeting, Nottingham (UK).
- June 2016 Talk, Fitness Workshop, Paris (FR).
- June 2016 Poster, 4th Toulouse Economics and Biology Workshop, Toulouse (FR).
- August 2015 Talk, European Society for Evolutionary Biology (ESEB) meeting, Lausanne (CH).
 - July 2015 Talk, Society for Molecular Biology and Evolution (SMBE) meeting, Vienna (AT).
 - July 2015 Invited talk, Mathematical Models in Ecology and Evolution (MMEE), Paris (FR).
 - June 2015 Invited talk, Models in Ecology and Evolution, Montpellier (FR).

```
Invited talk, Modelling Biological Evolution (MBE), Leicester (UK).
April 2015
           Talk, British Ecological Society-Société Française d'Écologie, Lille (FR).
 Dec 2014
          Invited talk, Evolution, Raleigh, NC (USA)
June 2014
          Invited talk, ECMTB meeting, Gothenburg (Sweden)
June 2014
           Poster, PopGroup meeting, Bath (UK)
 Jan 2014
           Talk, Workshop "Mathematics for an Evolving Biodiversity", Montréal, QC (Canada)
 Sept 2013
          Talk, Evolution, Snowbird, UT (USA)
June 2013
           Talk, CSEE, Kelowna, BC (Canada)
 May 2013
March 2013
           Invited Talk, Workshop "Biological invasions and evolutionary biology", Lyon (FR)
           Poster, Workshop "Disease Dynamics 2013", UBC, Vancouver (Canada)
 Jan 2013
           Talk, Evolution-ESEB joint meeting, Ottawa (Canada)
 July 2012
           Talk, Evo-WIBO, Port Townsend, WA (USA)
 May 2012
 Nov 2011
           Talk, SFU-UBC-UVic Ecology and Evolution Retreat, Brackendale (Canada)
 Aug 2011
          Talk, ESEB XIII Congress, Tübingen (Germany)
 May 2011
           Talk, Workshop on Quantitative Genetics, La Colle s/ Loup (France)
           Talk, Models in Evolutionary Ecology Workshop, Montpellier (France)
June 2010
 Aug 2009
           Talk, ESEB XII Congress, Torino (Italy)
 Oct 2008
           Talk, "R_0 and related concepts" meeting, Paris (France)
           Talk, "Petit Pois Déridé" French Population Genetics Meeting, Rennes (France)
 Aug 2008
 Sep 2007
           Poster, Jacques Monod Conference, Roscoff (France)
           Talk, ESEB XI Congress, Uppsala (Sweden)
 Aug 2007
```

Seminars

The department or lab is indicated between [].

```
Université de Toulouse [Ecology-Evolution] (FR)
 Dec 2016
           Université de Toulouse [Math] (FR)
 Dec 2016
  Oct 2016
           INRA MaIAGE, Jouy-en-Josas (FR)
           SOKENDAI [Math-Bio], Hayama (Japan)
 Sep 2016
 Sep 2016
           Kyushu University [Math-Bio] Fukuoka (Japan)
March 2016
           Université Paris 6 [Laboratoire Jacques-Louis Lions] Paris (FR)
 June 2015
           Max Planck Institute for Evolutionary Biology, Plön (DE)
           Wissenschaftskolleg zu Berlin (DE)
 Nov 2014
           Université de Lille [Ecology-Evolution] (France)
 July 2014
           University of Basel [Ecology-Evolution] (Switzerland)
 May 2014
           University of Lausanne [Ecology-Evolution] (Switzerland)
 May 2014
           University of Zurich [Ecology-Evolution] (Switzerland)
March 2014
March 2013
           University of Helsinki [Mathematical Biology] (Finland)
           University of Idaho [Biology] (USA)
  Feb 2013
           Simon Fraser University [Biophysics] (Canada)
 Nov 2012
           Yale University [Jetz lab] (USA)
 Oct 2012
           University of British Columbia [Ecology-Evolution, External seminar] (Canada)
 Sep 2012
March 2012
           University of Texas, Austin [Kirkpatrick lab] (USA)
  Jan 2012
           University of Toronto [Ecology-Evolution] (Canada)
           University of British Columbia [Ecology-Evolution, Internal seminar] (Canada)
  Oct 2011
```

- Sep 2011 University of British Columbia [Mathematics] (Canada)
- Apr 2011 INSA Lyon [Computer Science & Biology] (France)
- Jan 2011 Institut des Sciences de l'Évolution [Ecology-Evolution], Montpellier (France)

Grants and awards

Grants, fellowships, scholarships

- 2016 Appel à projets incitatifs PSL environnement (PI: Stéphanie Manel)
- 2016 ESEB Special Topic Network (with Hanna Kokko (PI), Tim Connallon and Erik Svensson)
- 2016 ESEB Equal Opportunity Fund (with Line Ugelvig and Nicolas Rode).
- 2014 Agence Nationale de la recherche, ANR-14-ACHN-0003 "MOLA" (4+1 years).
- 2014 College of the Life Sciences Fellowship, Wissenschaftskolleg zu Berlin. £20315.
- 2014 Travel award for International Cooperation, Université de Lille, with François Massol. 3000 €.
- 2012 2-year Biodiversity Postdoctoral Fellowship, Biodiversity Research Centre, UBC, CA\$100000.
- 2007 3-year PhD Fellowship (Allocation moniteur normalien).
- 4-year Scholarship, École Normale Supérieure. (Provides recipients with a status of Civil Servant, a full salary and is awarded to the top 20 Biology/Geology students in France.)

Prizes and Awards

- June 2014 Springer Best talk prize, 9th European Conference for Mathematical and Theoretical Biology (ECMTB 2014, Gothenburg, Sweden).
- Jan 2013 Best poster prize, Workshop "Disease Dynamics 2013: Immunization, a true multi-scale problem" (UBC, Canada).
 - 2012 Société Française d'Écologie's (SFÉ) Young investigator Award.

Professional service

Reviewing and Editing

Journals Reviewer for Science, Nature, Proceedings of the Royal Society B, PNAS, Ecology Letters, Nature Communications, Evolution, The American Naturalist, PLOS Biology, PLOS Computational Biology, PLOS One, Journal of Theoretical Biology, Evolutionary Applications, Philosophical Transactions of the Royal Society, Theoretical Population Biology, BMC Evolutionary Biology, Scientific Reports, Oikos, Biology Letters, Axios Reviews.

for a total of 96 reviews on 2017-03-01; "top referee" award for *Procs B* in 2010.

- 2017–2021 Journal of Evolutionary Biology: Board of Reviewing Editors
- 2017–2019 Evolution: Associate Editor

Books reviewer for Roberts and Company Publishers:

- 12 chapters of "The Analysis of Biological Data" (2nd ed.) by Whitlock & Schluter
- "The Theory of Coevolution" by Nuismer.

Organization of meetings, workshops and symposia

July 2017	Co-organizer	(with J.	Peña)	of a	symposium	"Social	evolution	in	subdivided
	populations: I	Beyond th	e usual	assum	nptions" at th	ie MMEE	meeting in	ı Loı	ndon (UK).

July 2016 Co-organizer (with L. Hindersin) of a symposium "Networks in Ecology and Evolution" at the joint ECMTB-SMB meeting in Nottingham (UK).

August 2015 Co-organizer (with N. Rode et F. Blanquart) of a symposium "Adaptation in heterogeneous environments: insights from host-parasite systems" at the ESEB 2015 meeting in Lausanne (CH).

Dec 2014 Co-organizer (with F. Massol, CNRS & Univ. Lille, FR) of a symposium on "Eco-evolutionary feedbacks: theoretical and empirical perspectives" at the joint meeting of the British Ecological Society (BES) and the Société Française d'Écologie (SFÉ) in Lille (FR).

Oct 2013 Co-organizer of the 2013 UBC/SFU/UVic Ecology and Evolution Retreat (Canada).

Oct 2012 Co-organizer of the 2012 UBC/SFU/UVic Ecology and Evolution Retreat (Canada).

June 2010 Founding member and co-organizer of the student workshop "Models in Evolutionary Ecology" in Montpellier (FR) (the seventh edition took place in June 2016).

Organized seminars and journal clubs

2012–2013 Organizer of the Biodiversity Lunchtime Internal Seminar Series (BLISS) at UBC, Vancouver (Canada).

2011–2013 Running the "Let's Assume" theory Journal Club at UBC (Canada).

2008–2009 Founding member and organizer of the department's bimonthly student seminar.

March 2009 Organizer of the department's fourth yearly "PhD students meeting", CEFE, Montpellier (FR).

Updated 2016-03-01

Others

Languages French: mother tongue

English: fluent

German: good working knowledge

Computing Working with R, Mathematica, C and Matlab

Citizenship French