

Dr. Liancourt Pierre

Current status:

Post-doctoral researcher (community ecology)
University of Pennsylvania
Department of Biology
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Research activities

January 2009 to fall 2012: Post-doctoral researcher

University of Pennsylvania. Three months per year in Mongolia
With **Brenda Casper** and **Peter Petraitis**
Community Ecology, Global change (climate/land-use), steppe environments, NSF
PIRE Mongolia (<http://mongolia.bio.upenn.edu/index.html>)

September 2005 to November 2008: Post-doctoral researcher

University of Tuebingen (Germany) – University of Jordan (Amman, Jordan). Nine
months per year in Jordan
With **Katja Tielbörger**
Community Ecology, Global change (climate/land-use), Mediterranean and arid
environments, GLOWA JR Project (<http://www.glowa-jordan-river.de>)

February 2005 - July 2005: Post-doctoral researcher

CEFE Montpellier, CNRS (France)
With **Sandra Lavorel** and **Ian Davies**
Landscape modeling (LAMOS) and landscape ecology, Global change (land-use
change), subalpine grasslands, EU Project VISTA

Education

2000-2005: University thesis (Ph.D.)

Joseph Fourier University (Grenoble, France). Laboratoire d'Ecologie Alpine (LECA)
Supervisor: **Richard Michalet**, Co-supervisor: **Sandra Lavorel**
“Plant strategies and biotic interactions along trophic and non-trophic soil resource
gradients: a study of herbaceous ecosystems”

1999: DEA (MSc equivalent)

Joseph Fourier University (Grenoble, France)
Supervisor: **Richard Michalet**, Co-supervisor: **Emmanuel Corcket**
“Distribution and strategy of *Bromus erectus* and *Brachypodium pinnatum* in
calcareous grasslands - conservation and pastoral application”

Publications

Published:

20. Fridley J.D., Grime J.P., Huston M.A., Pierce S., Smart S.M., Thompson K., Börger L., Brooker R.W., Cerabolini B.E.L., Gross N., **Liancourt P.**, Michalet R., Le Bagousse-Pinguet Y. (accepted) The unimodal productivity-richness relationship for herbaceous vegetation should stand: reply to Adler et al. Science.
19. **Liancourt P.**, Choler P., Gross N., Thibert-Plante X., Tielbörger K. (in press) How facilitation may interfere with ecological speciation. International Journal of Ecology – Special issue on Ecological speciation.
18. Le Bagousse-Pinguet Y., **Liancourt P.**, Gross N., Straile D. (in press) Indirect facilitation promotes macrophyte dominance in freshwater ecosystems threatened by eutrophication. Journal of Ecology (DOI:10.1111/j.1365-2745.2011.01931.x).
17. Casper B.B., Goldman R., Lkhagva A., Helliker B.R., Plante A.F., Spence L.A., **Liancourt P.**, Boldgiv B., Petraitis P.S. (in press) Legumes mitigate ecological consequences of a topographic gradient in a northern Mongolian steppe. Oecologia (DOI: 10.1111/j.1365-2745.2011.01931.x).
16. **Liancourt P.**, Spence L.A., Lkhagva A., Boldgiv B., Helliker B.R., Casper B.B., Petraitis P.S. (in press) Vulnerability of the northern Mongolian steppe to climate change: insight from flower production and phenology. Ecology (DOI:10.1890/11-1003.1).
15. Quetier F., Lavorel S., **Liancourt P.**, Thébaud A., Davies I. (in press) Assessing long-term land-use legacies in subalpine grasslands using a plant-trait based generic modelling framework. Plant Ecology and Diversity (DOI: 10.1080/17550874.2011.629232).
14. **Liancourt P.**, Sharkhuu A., Lkhagva A., Boldgiv B., Helliker B.R., Plante A.F., Petraitis P.S., Casper B.B. (in press) Temporal and spatial variation in how vegetation alters the soil moisture response to climate manipulation. Plant and Soil (DOI: 10.1007/s11104-011-0956-y).
13. **Liancourt P.**, Tielbörger K. (2011) Ecotypic differentiation determines the outcome of positive interactions in a dryland annual plant species. Perspectives in Plant Ecology, Evolution and Systematics 13: 259-264.
12. Gross N., Le Bagousse-Pinguet Y., **Liancourt P.**, Urcelay C., Roumet C., Lavorel S. (2010) Arbuscular mycorrhiza (AM) mediated the competitive effect and response of a monopolistic species. Functional Ecology 24: 1122-1132.
11. Metz J., **Liancourt P.**, Kigel J., Harel D., Sternberg M., Tielbörger K. (2010) Plant survival in relation to seed size along environmental gradients: a long-term study from semi-arid and Mediterranean annual plant communities. Journal of Ecology 98: 697-704.
10. Gross N., **Liancourt P.**, Choler P., Suding K., Lavorel S. (2010) Species-level strain gives greater insight than stress into the outcomes of biotic interactions. Perspectives in Plant Ecology, Evolution and Systematics 12: 9-19.
9. **Liancourt P.**, Tielbörger K., Bangerter S., Prasse P. (2009) Components of ‘competitive ability’ in the LHS model: Implication on coexistence for 12 co-occurring grasses. Basic and Applied Ecology 10: 707-714.
8. Gross N., Kunstler G., **Liancourt P.**, de Bello F., Suding K., Lavorel S. (2009) Linking individual response to biotic interactions with community structure: a trait-based framework. Functional Ecology 23: 1167-1178.
7. **Liancourt P.**, Tielbörger K. (2009) Competition and short growing season lead to ecotypic differentiation at the two extremes of the ecological range. Functional Ecology 23: 397-404.

6. **Liancourt P.**, Viard-Cretat F., Michalet R. (2009) Contrasting community responses to fertilization and the role of competitive ability of dominant species. Journal of Vegetation Science 20: 138-147.
5. Brooker R., Maestre F., Callaway R.M., Lortie C., Cavieres L., Kunstler G., **Liancourt P.**, Tielbörger K., Travis J., Anthelme F., Armas C., Coll L., Corcket E., Delzon S., Forey E., Kikvidze Z., Olofsson J., Pugnaire P., Quiroz C., Saccone P., Schiffers K., Seifan M., Touzard B., Michalet R. (2008) Facilitation in plant communities: the past, the present and the future. Journal of Ecology 96: 18-34.
4. Gaucherand S., **Liancourt P.**, Lavorel S. (2006) Competition importance and intensity along a fertility gradient and across phytometers. Journal of Vegetation Science 17: 455-464.
3. **Liancourt P.**, Corcket E., Michalet R. (2005) Stress tolerance abilities and competitive responses in a watering and fertilization field experiment. Journal of Vegetation Science 16: 713-722.
2. **Liancourt P.**, Callaway R.M., Michalet R. (2005) Stress tolerance abilities and competitive responses determine the outcome of biotic interactions. Ecology 86: 1611-1618.
1. Corcket E., **Liancourt P.**, Callaway R.M., Michalet R. (2003) The relative importance of competition for two dominant species, as affected by environmental manipulations in the field. Ecoscience 10: 186-194.

Submitted:

1. Le Bagousse-Pinguet Y., Xiao S., Brooker R.W., Gross N., **Liancourt P.**, Straile D., Michalet R. "Facilitation displaces hot-spots of diversity and maintains ecosystem stability" (resubmission to *Oikos*)*.
2. Ariza C., **Liancourt P.**, Tielbörger K. "Imprinted and ecotype-specific maternal effect" (resubmission to *Oecologia*)*.
3. Gross N., Laliberte E., **Liancourt P.**, Vile D., Le Bagousse-Pinguet Y., Violle C. "Including biotic interactions into the response-effect framework to capture the ecosystem responses to environmental changes" (submitted *Oikos*)*.

(*manuscript available on demand)

Communications/Posters

1. Casper B.B. **Liancourt P.**, Petraitis P.S., Lkhagva A., Boldgiv B., Helliker B.R., Plante A.F. (2011) "Flowering in the Mongolian steppe: effect of the topography, year and climate manipulation" **54th IAVS symposium, June 20-24, Lyon, France** (Oral presentation).
2. Casper B.B., **Liancourt P.**, Plante A.F., Helliker B.R., Lkhagva A., Boldgiv B., Petraitis P.S. (2010) "Ecological responses to warmer pastures in northern Mongolia" **95th ESA annual meeting, August 1-6, Pittsburgh, USA** (Oral presentation)
3. Goldman R.H., Helliker B.R., Casper B.B., Petraitis P.S., **Liancourt P.**, Plante A.F., Boldgiv B. (2010) "Using water-use efficiency to evaluate responses to climate change in the steppe grasslands of northern Mongolia" **95th ESA annual meeting, August 1-6, Pittsburgh, USA** (Poster).
4. Sharkhuu A., Plante A.F., Casper B.B., Helliker B.R., **Liancourt P.**, Petraitis P.S. (2010) "Soil ecosystem responses to experimental warming in northern Mongolia" **95th ESA annual meeting, August 1-6, Pittsburgh, USA** (Poster).
5. Sharkhuu A., Plante A.F., Casper B.B., Helliker B.R., **Liancourt P.**, Petraitis P. (2009) "Performance of two passive warming chamber designs in a northern Mongolian steppe" **AGU Fall meeting, December 14-18, San Francisco, USA** (Poster)
6. Tielbörger K., **Liancourt P.** (2009) "Evolution and species interactions - facilitation may impede reproductive isolation among largely different populations" **POPPIO 2009, May 21-24, Bern, Switzerland** (Oral presentation).

7. **Liancourt P.**, Lkhagva A., Boldgiv B., Casper B.B., Helliker B.R., Petraitis P.S., Plante A.F. (2009) "Ecological and evolutionary effects of climate change and anthropogenic influences in northern Mongolia". **17th Plant Biology Symposium, May 19-21, Penn State University, University Park, PA, USA** (Poster).
8. Gross N., **Liancourt P.**, Choler P., Suding K., Lavorel S. (2009) "Species-level strain gives greater insight than stress into the outcomes of biotic interactions" **BES Symposium: Facilitation in Plant Communities, April 20–22, University of Aberdeen, Scotland, UK** (Poster).
9. Le Bagousse-Pinguet Y., Brooker R., Gross N., **Liancourt P.**, Straile D., Michalet R. (2009) "Linking biodiversity to plant interactions along biotic disturbance and environmental severity gradients: a response surface model". **BES Symposium: Facilitation in Plant Communities, April 20–22, University of Aberdeen, Scotland, UK** (Poster).
10. **Liancourt P.**, Tielbörger K. (2008) "Competitive effect and response in the LHS model". **93th ESA annual meeting, August 3-8, Milwaukee, USA** (Oral presentation).
11. Köchy M., Jeltsch F., Malkinson D., Dayan D., Stenberg M., Tielbörger K., **Liancourt P.**, Oran S., Kigel J., Prasse R. (2008) "Response of natural vegetation to simulated and experimental change of climate and land use". **GLOWA JR Status Conference, July 25-28, Aqaba, Jordan** (Oral presentation).
12. Bangerter S., **Liancourt P.**, Prasse R., Tielbörger K. (2008) "Combined effect of climate and grazing cessation on semi-arid to arid plant communities: Insights after three years of experimentation". **GLOWA JR Status Conference, June 25-28, Aqaba, Jordan** (Poster).
13. **Liancourt P.**, Bangerter S., Oran S., Prasse R., Tielbörger K. (2007) "Impact of grazing cessation on the biomass in Jordan". **GLOWA JR Status Conference, September 20-23, Herrenberg, Germany** (Poster).
14. Tielbörger K., **Liancourt P.**, Stenberg M., Oran S., Kigel J., Köchy M., Jeltsch F., Malkinson D., Prasse R. (2007) "Mediterranean ecosystems under global changes – integrative studies along aridity gradient". **GLOWA JR Status Conference, September 20-23, Herrenberg, Germany** (Oral presentation).
15. Bangerter S., **Liancourt P.**, Prasse R. (2007) "Evaluation of restoration measures of degraded semi arid rangelands under climate change in Jordan". **37th Annual Conference of the Ecological Society of Germany, Switzerland and Austria (GfÖ), September 10-14, Marburg, Germany** (Oral presentation).
16. **Liancourt P.**, Tielbörger K. (2007) "Plant strategies and local adaptation: the role of competition and the length of the vegetation season along an aridity gradient". **37th Annual Conference of the Ecological Society of Germany, Switzerland and Austria (GfÖ), September 10-14, Marburg, Germany** (Oral presentation)
17. **Liancourt P.** (2006) "Facilitation and ecological speciation: Disruptive or cohesive force". **ESF LESC Exploratory workshop, "Positive interactions, biodiversity and invisibility in a changing world", September 3-7, Arcachon, France** (Oral presentation).
18. Quétier F., Thébaud A., Davies I., de Chazal J., Daigney S., **Liancourt P.**, Rivoal F. & Lavorel S. (2005) "Scenario based projections of ecosystem services in mountain grasslands". **DIVERSITAS first open science conference "Integrating biodiversity science for human well-being", November 9-12, Oaxaca, Mexico** (poster).
19. **Liancourt P.**, Callaway R., Lavorel S., Michalet R. (2005) "Stress tolerance and competitive response ability determine the outcome of biotic interactions". **Joint ESA/INTECOL meeting, August 5-12, Montreal, Quebec, Canada** (Oral presentation).
20. **Liancourt P.** (2005) "Plant strategies and biotic interactions along trophic and non-trophic soil resource gradients: a study of herbaceous ecosystems". **Workshop ECOVEG, February 17-18, Lyon, France** (Oral presentation).
21. **Liancourt P.**, Corcket E., Michalet R. (2004) "Implication de la tolérance au stress et de la compétition dans les changements de dominance suite à l'irrigation et la fertilisation d'une pelouse sèche collinéenne". **6^{èmes} Journées d'Ecologie Fonctionnelle, March 10-12, Rennes, France** (Oral presentation).
22. **Liancourt P.**, Corcket E., Michalet R. (2003) "Dominance et compétition entre graminées structurantes d'écosystèmes herbacés collinéens". **5^{èmes} Journées d'Ecologie Fonctionnelle, March 12-14, Nancy, France** (Oral presentation).

23. **Liancourt P.**, Corcket E., Michalet R. (2002) “Contrasted responses of *Bromus erectus* and *Brachypodium pinnatum* to shade and drought in the field versus common garden experiment”. **Winter and annual general meeting, British Ecological Society, December 18-20 2002, Warwick, UK** (Oral presentation).
24. **Liancourt P.**, Corcket E., Michalet R. (2001) “Etudes expérimentales comparées de la réponse du Brome érigé et du Brachypode penné à l’ombre et à la sécheresse”. **3èmes Journées d’Ecologie Fonctionnelle, March 6-9, La Londe-Les-Maures, France** (Oral presentation).

Teaching activities

University of Grenoble, Department of Biology: **Lectures, labs and field courses dealing with community ecology: herbivory, mycorrhizae, biotic interactions, vegetation dynamic and biodiversity (third and fourth year students).**

2002-2003: half position lecturer-ATER (96 hours)

2001-2002: occasional lectures (44 hours)

University of Pennsylvania, Department of Biology:

2011: Guest lecture on plant-plant interactions/facilitation (1h)

Student Supervision

Graduate students:

- 2005-2010 :

I was co-advising for **Nicolas Gross** (PhD student at the University of Grenoble, 2003-2007, France) and **Yoann Le Bagousse-Pinguet** (PhD Student at the University of Constance, 2007-2010, Germany) during their PhDs.

I was also co-advising **Sara Bangerter** (PhD student from the University of Hannover, 2006-2008, Germany) and **Nasab Rawashd'eh** (PhD student from the Jordan University, 2006-2007, Jordan) in Amman.

Undergraduate students:

- 2010-2011:

Dietzen C.: “Effect of warming on functional composition at two slope location of the steppe grassland in Mongolia”, University of Pennsylvania, BSc (senior thesis)

Stahl J.: “Phenological changes under warming and grazing in the steppe grassland of Northern Mongolia”, University of Pennsylvania, BSc (senior thesis)

- 2005-2008

I supervised five field assistants (three from Germany and two from Jordan) during the field season in Jordan.

- 2002-2003

Huc Orduna T.C.: “réponse de *Bromus erectus*, *Brachypodium rupestre* et *Arrhenatherum elatius* à la fertilisation et au Benomyl”, ERASMUS student from Mexico (BSc).

Tissa F.: “Etude de la colonisation mycorhizienne chez trois graminées : Influence de la fertilization”, Maîtrise MBPE (MSc), UJF.

Stahl C.: “Variation du rapport carbone/azote foliaire le long de gradient de productivité”, DEUG de Biologie, UJF (BSc).

Bessière A.: “Mise en place et suivi d’expérimentations dans les pelouses du collinéen et du subalpin”, DEUG de Biologie (BSc).

- 2001-2002

Bouasria A.: “Facteurs biotiques, abiotiques et dynamique de succession: les grands concepts”, Maîtrise MBPE (MSc), UJF.

Gross N.: “Mycorhizes et interactions biotiques : Analyse bibliographique et mise en place d’un protocole experimental”, Maîtrise MBPE (MSc), UJF.

Raquet V.: “Interactions biotiques et stratégies le long de gradients de ressources dans les systèmes herbacés: participation au suivi expérimental”, Licence LBO (BSc), UJF.

Viard-Crétat F.: “Etude de la composition floristique le long de gradient de ressources édaphiques”, Maîtrise MBPE (MSc), UJF.

Michalet A.: “Les espèces invasives natives et exotiques : cas de *Brachypodium pinnatum* et de *Centaurea maculosa*.”. Stage de terminal en lycée agricole.

- 2000-2001

Breullin F.: “Etude des changements floristiques à court terme, en réponse à la fertilisation et l’irrigation”, Maîtrise MBPE (MSc), Université Pierre et Marie Curie Paris V.

Château B.: “Etude comparative de la réponse de différentes graminées typiques des pelouses sèches calcaires le long de gradients expérimentaux, Maîtrise MBPE (MSc), UJF.

Darmuzey V.: “Contribution à l’étude du fonctionnement des pelouses calcicoles : germinations de Brome érigé, Brachypode penné, Fromental élevé et connaissance des pratiques agro-pastorales”, stage de deuxième année d’école d’ingénieur de l’Institut National Agronomique de Paris-Grignon (Master of engineering).

Morand T.: “Contribution à la mise en place d’un dispositif expérimental pour l’étude des interactions biotiques le long de gradients d’eau et de nutriments”, DEUG de Biologie (BSc), UJF.

Professional organization and collective work

Ecological Society of America member

Reviewer for international journals and funding agencies: *American Journal of Botany, Basic and Applied Ecology, Biological invasion, Ecography, Ecology, Journal of Applied Ecology, Journal of arid environments, Journal of Ecology, Journal of Vegetation Science, New Phytologist, National Science Foundation (NSF), Oecologia, Oikos, Plant Ecology, Restoration Ecology.*

Other skills and activities

Driving licence

Languages: French (mother tongue), English (fluent), Spanish (school level), Arabic (basic level).

Other professional practice: Boarding school supervisor in 2000 and 2001 (17 hours/week).

Referees

R. Michalet, Full Professor. UMR INRA 1202 BIOGECO, Université de Bordeaux1, France (phone: 33 (0)5 40 00 88 95; r.michalet@ecologie.u-bordeaux1.fr).

K. Tielbörger, Full Professor, University of Tuebingen, Botanical Institute, Department of Plant Ecology, Germany (phone: 49-(0)7071-29-74246; katja.tielboerger@uni-tuebingen.de).

P. Petraitis, Full Professor, University of Pennsylvania, Department of biology, Leidy Labs, 3740 Hamilton Walk, 19104 Philadelphia, USA (ppetrait@sas.upenn.edu).

B. Casper, Full Professor, University of Pennsylvania, Department of biology, Leidy Labs, 3740 Hamilton Walk, 19104 Philadelphia, USA (bcasper@sas.upenn.edu).