

PERSONAL INFORMATION

Fabre, Anne-Claire

ResearcherID: J-4492-2014

Web site: <http://anne-claire-fabre.weebly.com/>

Current position (Marie- Skłodowska Curie fellowship)

January 2016-2018:

Postdoc in Evolutionary biology

FunEvol Laboratory

Museum National D'Histoire Naturelle

Paris, France

Previous position (Fondation Fyssen fellowship)

January 2014-Present:

Postdoc in Evolutionary biology

Animal Locomotion Laboratory

Evolutionary Anthropology Department

Duke University

Durham, USA

EDUCATION

15/09/2010 – 15/09/2013 **PhD supervised by S Peigné, A Goswami and R Cornette**

Centre National de Recherche Scientifique/ Museum National D'Histoire Naturelle/ Université Paris Diderot

London Global University/ Department of Genetics, Evolution and Environment, University College London/ London, United Kingdom

Dissertation: How can the interplay between form and function enlighten the evolution of organisms in their ecological context?

01/09/2009 – 03/07/2010 **Master Degree in Interdisciplinary Approaches to Life Sciences**
Université Paris Diderot/ Paris, France (2nd year)

01/09/2007 – 01/07/2008 **Master Degree Systematic, Evolution and Palaeontology**
Université Pierre et Marie Curie / Paris, France (2nd year)

01/09/2007 – 01/07/2008 **Master Degree Paleontology,**
Université de Poitiers / Poitiers, France (1st year)

01/09/2003 – 01/06/2006 **Bachelor of Science in Biology / Geology, 2006**
Université Montpellier II, Montpellier, France

GRANTS

2016-2018 Postdoc Marie Skłodowska-Curie [International Fellowship-ReIntegration] (PI, 200k€)

2014 – 2016 Postdoc: Research grant of the **Fondation Fyssen** (PI, 50k€)

2010-2013 – PhD: Research grant of the **CNRS** and **UCL Impact Grant** (PI, 30k€ & 30k€)

2010-2013 – Travel grant of the **Fondation Bettencourt-Schueller** (3k€)

PUBLICATIONS (in peer-reviewed journals)

* corresponding author and leading author in the paper

Genise JF, Garrouste R, Nel P, Grandcolas P, Maurizot P, Cluzel D, Cornette R, **Fabre A-C** and A Nel (2012). *Asthenopodichnium* in fossil wood: different trace makers as indicators of different terrestrial palaeoenvironments. *Palaeogeography, Palaeoclimatology, Palaeoecology* 365-366: 184-191.

Herrel A, **Fabre A-C**, Hugot J-P, Keovichit K, Adriaens D, Van Hoorebeke L and R Cornette (2012). Ontogeny of the cranial system in *Laonastes aenigmamus*. *Journal of Anatomy* 221 (2):128-137.

Polly PD, Lawing AM, **Fabre A-C** and A Goswami (2013). Phylogenetic principal components analysis and geometric morphometrics. *Hystrix* 24(1):1-9.

Fabre A-C, Cornette R, Slater G, Argot C, Peigné S, Goswami A and E Pouydebat (2013). Getting a grip on the evolution of grasping in musteloid carnivorans: a three-dimensional analysis of forelimb shape. *Journal of Evolutionary Biology* 26(7):1521-1535.

Fabre A-C, Cornette R, Peigné S and A Goswami (2013). Influence of body mass on the shape of forelimb in musteloid carnivorans. *Biological Journal of the Linnean Society* 110(1):91-103.

Fabre A-C, Cornette R, Perrard A, Boyer D, Prasad GVP, Hooker JJ and A Goswami (2014). A three-dimensional morphometric analysis of the locomotory ecology of *Deccanolestes*, a eutherian mammal from the late Cretaceous of India. *Journal of Vertebrate Paleontology* 34(1):146-156.

Fabre A-C, Goswami A, Peigné S and R Cornette (2014). Morphological integration in the forelimb of musteloid carnivorans. *Journal of Anatomy* 225(1):19-30.

Fabre A-C, Cornette R, Huyghe K, Andrade DV and A Herrel (2014). Linear versus geometric morphometric approaches for the analysis of head shape dimorphism in lizards. *Journal of Morphology* 275:1016-1026.

Robovska-Havelkova P, Aerts P, Rocek Z, Prikryl T, **Fabre A-C** and A Herrel (2014). Do all frogs swim alike? The effect of ecological specialization on swimming kinematics in frogs. *Journal of Experimental Biology* 217:3637-3644.

Fabre A-C, Andrade DV, Huyghe K, Cornette R and A Herrel (2014). Interrelationships between bones, muscles, and performance: biting in the lizard *Tupinambis meriana*. *Evolutionary Biology* 41:518-527.

Fabre A-C, Cornette R, Goswami A and Peigné S (2015) Do constraints associated with the locomotor habitat drive the evolution of forelimb shape? A case study in musteloid carnivorans. *Journal of Anatomy* 226:596-610.

Fabre A-C, Salesa MJ, Cornette R, Antón M, Morales J and S Peigné (2015) Quantitative inferences on the locomotor behaviour of extinct species applied to *Simocyon batalleri* (Ailuridae, Late Miocene, Spain). *The Science of Nature* 102:30.

Botton-Divet L, A Houssaye, A Herrel, **A-C Fabre** and R Cornette (2015) Tools for quantitative form description; an evaluation of different software packages for semi-landmark analysis. *Peer J* 3:e1417.

* Dumont M, Wall CE, Botton-Divet L, Goswami A, Peigné S and **A-C Fabre** (2016) Do functional demands associated with locomotor habitat, diet, and activity pattern drive skull shape evolution in musteloid carnivorans? *Biological Journal of the Linnean Society* 117(4):858-878.

Fabre A-C, Bickford D, Segall M and A Herrel (2016) Does diet drive head shape evolution in gape-limited predators? A case study with homalopsine snakes. *Biological Journal of the Linnean Society* 118(3):634-647.

Granatosky M, Tripp C, **Fabre A-C** and D Schmitt (2016). Patterns of quadrupedal locomotion in a vertical clinging and leaping primate (*Propithecus coquereli*) with implications for understanding the functional demands of primate quadrupedal locomotion. *American Journal of Physical Anthropology* 160: 644-652.

Segall M, Cornette R, **Fabre A-C**, Godoy-Diana R and A Herrel (2016) Does aquatic foraging impact head shape evolution in snakes? *Proceedings of the Royal Society B* 283: 20161645.

Dollion A, Measy GJ, Cornette R, Carne L, Tolley K, da Silva J, Boistel R, **Fabre A-C** and A Herrel (2016) Does diet drive the evolution of head shape and bite force in chameleons of the genus *Bradypodion*? *Functional Ecology* doi: 10.1111/1365-2435.12750

Botton-Divet L, Cornette R, **Fabre A-C**, Herrel A and A Houssaye (*in press*) Morphological analysis of long bones in semi-aquatic mustelids and their terrestrial relatives. *Integrative and Comparative Biology*

Botton-Divet L, Cornette R, Houssaye A, **Fabre A-C** and A Herrel (*in press*) Swimming and running, a study of the convergences in long bone morphology among semi-aquatic mustelids (Carnivora: Mustelidae). *Biological Journal of the Linnean Society*

Manzano A, Herrel A, **Fabre A-C** and V Abdala (*accepted with major revision*) Does variation in brain anatomy reflect locomotor ecology in anurans? *Journal of Anatomy*.

Fabre A-C, Marigó J, Granatosky M and D Schmitt (*accepted with major revision*) Functional associations between support use and forelimb shape in Strepsirrhines and its relevance to inferring locomotor behavior in early primates. *Journal of Human Evolution*

Manzano A, Herrel A, **Fabre A-C** and V Abdala (*accepted with major revision*) Does variation in brain anatomy reflect locomotor ecology in anurans? *Journal of Anatomy*

Fabre A-C, Peckre L, Pouydebat E, Herrel A, Wall C and (*accepted with major revision*) Holding-on: co-evolution between infant carrying and grasping behaviour in strepsirrhines *Scientific Reports*

SHORT NOTE

McCleary RJR, Bickford DP, Herrel A and **A-C Fabre** (2014). *Gerarda prevostiana* (Gerard's Watersnake). REPRODUCTION. *Herpetological Review* 45(3): 516

MANUSCRIPTS IN PREPARATION

Fabre A-C, Granatosky M and D Schmitt (*in prep*) Covariation between locomotion behavior and forelimb shape in Prosimians. *American Journal of Physical Anthropology*

Fabre A-C, Granatosky M and D Schmitt (*in prep*) Interrelationships between locomotor biomechanics and forelimb shape in Strepsirrhini. *Journal of Human Evolution*

INVITED SYMPOSIUM PRESENTATIONS

Fabre A-C, Peckre L, Wall C, Herrel A and E Pouydebat. Influence of grasping ability on forelimb long bone shape in Prosimians. 6th European Federation for Primatology, Roma, Italy; 25-28 august, 2015.

Fabre A-C, Salesa MJ, Cornette R, Antón M, Morales J and S Peigné. Quantitative inferences on the locomotor behavior of extinct species: new insights from 3D surface geometric morphometrics approaches, 75th SVP, Dallas, Texas, USA; 14-17 October, 2015.

Fabre A-C, Dumont M, Wall CE, Brewer D, Ehmke E, Welsch K and A Herrel. Does bite force matter in shaping the head of strepsirrhines primates, ASM, Minneapolis, Minnesota; 24-28 June, 2016.

Fabre A-C. The evolution of prehensile behaviour and forelimb morphology in prosimians. 50th Anniversary Symposium in celebration of the Duke Lemur Center, 21-23 September, 2016.

INVITED SEMINARS

2013. What influences the forelimb shape in musteloid carnivorans? Departmental seminar

at **Hull York Medical School, York, UK.**

2013. Locomotion et forme du membre antérieur chez les carnivores. Séminaire de l'UMS 2700, **MNHN, Paris, France.**

2015. What are the relationships between locomotion, grasping behavior and shape of the forelimb in mammals? Séminaire du mardi de l'ISYEB, **MNHN, Paris, France.**

2015. How can the interplay between form and function enlighten the evolution of organisms in their ecological context? Interdepartmental Seminar **University College London/Imperial College/Museum of Natural History London, London, UK.**

ORAL PRESENTATIONS (*Published abstracts)

* **Fabre A-C**, Dumont M, Wall C, Brewer D, Ehmke E, Welser K, Dumont E, Godfrey L and A Herrel. Geometric morphometric approaches to inferring bite force and diet in extinct strepsirrhines. *Annual meeting of the Society of Integrative and Comparative Biology*, New Orleans, USA; 4-8 January, 2017.

Fabre A-C. The evolution of prehensile behaviour and forelimb morphology in prosimians. Symposium en l'honneur de la célébration du 50^{ème} anniversaire du Duke Lemur Center, Durham, Caroline du Nord, Etats-Unis ; 21-23 September, 2016.

* **Fabre A-C**, Granatosky MC, Hanna J and D Schmitt. Coevolution between forelimb shape and loading regime in strepsirrhines. *International Congress of Vertebrate Morphology*, Washington, Washington DC, USA; 29 June- 4 July, 2016.

* Botton-Divet L, **Fabre A-C**, Herrel A, Cornette R and A Housaye. How to become aquatic with the mustelid toolkit? A morphometric insight into aquatic mustelid long bone evolution. *International Congress of Vertebrate Morphology*, Washington DC, USA; June 29- July 4, 2016.

* **Fabre A-C**, Dumont M, Wall CE, Brewer D, Ehmke E, Welser K and A Herrel. Does bite force matter in shaping the head of strepsirrhines primates, ASM, Minneapolis, Minnesota, USA; 24-28 June, 2016.

Fabre A-C, Marigó J, Granatosky MC and D Schmitt. Functional associations between substrate use and forelimb shape in strepsirrhines and its relevance to inferring locomotor behavior in early primates. II Iberian Symposium on Geometric Morphometrics, Madrid, Spain; 9-10 June, 2016.

Botton-Divet L, Housaye A, **Fabre A-C**, Herrel A, Cornette R. Running, bouncing, swimming: a morphometric study of Mustelinae and Lutrinae long bones and the link with ecology. 9th Symposium National de Morphométrie et Evolution des Formes, Paris, France ; 1-2 June, 2016.

Fabre A-C, Peckre L, Wall CE and E Pouydebat. Influence des comportements de saisie sur la morphologie du membre antérieur des lémuriens. 9th Symposium National de Morphométrie et Evolution des Formes, Paris, France ; 1-2 June, 2016.

Herrel A, Wall CE and **Fabre A-C**. Form-function relationships in the cranium of strepsirrhine primates. 9th Symposium National de Morphométrie et Evolution des Formes, Paris, France 1-2 June, 2016.

Segall M, Cornette R, **Fabre A-C**, Godoy-Diana R and A Herrel. Does underwater prey capture impact head shape evolution in snakes? 9th Symposium National de Morphométrie et Evolution des Formes, Paris, France ; 1-2 June, 2016.

* **Fabre A-C**, Peckre L, Brewer D, Ehmke E, Welser K, E Pouydebat and C Wall. Influence of grasping ability on forelimb long bone shape in Prosimians. *Annual meeting of the Society of Integrative and Comparative Biology*, Portland, USA; 3-7 January, 2016.

Fabre A-C, Dumont M, Wall CE, Brewer D, Ehmke E, Welser K and A Herrel. Does bite force matter in shaping the head of strepsirrhines primates, ASM, Minneapolis, Minnesota; 24-28 June, 2016.

Fabre A-C, Marigó J, Granatosky MC and D Schmitt. Functional associations between substrate use and forelimb shape in strepsirrhines and its relevance to inferring locomotor behavior in early primates. II Iberian Symposium on Geometric Morphometrics, Madrid, Spain; 9-10 June, 2016.

Botton-Divet L, Houssaye A, **Fabre A-C**, Herrel A, Cornette R. Running, bouncing, swimming: a morphometric study of Mustelinae and Lutrinae long bones and the link with ecology. 9th Symposium National de Morphométrie et Evolution des Formes, Paris, France; 1-2 June, 2016.

Fabre A-C, Peckre L, Wall CE and E Pouydebat. Influence des comportements de saisie sur la morphologie du membre antérieur des lémuriens. 9th Symposium National de Morphométrie et Evolution des Formes, Paris, France; 1-2 June, 2016.

Herrel A, Wall CE and **Fabre A-C**. Form-function relationships in the cranium of strepsirrhine primates. 9th Symposium National de Morphométrie et Evolution des Formes, Paris, France; 1-2 June, 2016.

Segall M, Cornette R, **Fabre A-C**, Godoy-Diana R and A Herrel. Does underwater prey capture impact head shape evolution in snakes? 9th Symposium National de Morphométrie et Evolution des Formes, Paris, France; 1-2 June, 2016.

* Botton-Divet L, Cornette R, Herrel A, **Fabre A-C** and A Houssaye. Is the forelimb of semi-aquatic mustelids adapted to locomotion in different environments? A morphometric study. *Annual meeting of the Society of Integrative and Comparative Biology*, Portland, USA; 3-7 January, 2016.

Fabre A-C, Peckre L, Wall C, Herrel A and E Pouydebat. Influence of grasping ability on forelimb long bone shape in Prosimians. 6th European Federation for Primatology, Roma, Italy; 25-28 august, 2015.

Fabre A-C, Cornette R, Peigné S, Goswami A and M Dumont. What influences the shape of the skull in musteloids carnivorans? 6th cranio-cervical Systems in vertebrates meeting, Ghent, Belgium; 7-10 July, 2015.

Herrel A, Wall C and **A-C Fabre**. Form-function relationships in the cranium of strepsirrhine primates. 6th cranio-cervical Systems in vertebrates meeting, Ghent, Belgium; 7-10 July, 2015.

Herrel A, **Fabre A-C** and R Cornette. Do functional constraints drive vertebrate skull shape evolution? A comparison between mammals and lizards. 8th Symposium National de Morphométrie et Evolution des Formes, Dijon, France; 2014.

* **Fabre A-C**, Goswami A, Peigné S and R Cornette. Morphological integration in the forelimb of musteloid carnivorans. *Annual meeting of the Society of Integrative and Comparative Biology*, Austin, USA; January 03-07, 2014.

* **Fabre A-C**, Cornette R, Goswami A and S Peigné. Influence of locomotor style on the shape of the forelimb in musteloid carnivorans. *International Congress of Vertebrate Morphology*, Barcelona, Spain; July 08-13, 2013.

* **Fabre A-C**, Slater G, Cornette R, Peigné S, Goswami A and E Pouydebat. Getting a grip on the evolution of grasping in carnivores: a three-dimensional analysis of forelimb shape. *Annual meeting of the Society of Integrative and Comparative Biology*, San Francisco, USA; January 03-07, 2013.

Fabre A-C, Slater G, Cornette R, Peigné S, Goswami A and E Pouydebat. Getting a grip on the evolution of grasping in carnivores: a three-dimensional analysis of forelimb shape. *International Symposium Form*, Paris; November 28-30, 2012.

* **Fabre A-C**, Cornette R, Delapre A, Baylac M, Keovichit K and J-P Hugot. Populational and geographical study of a relictual rodent from the Laos (*Laonastes aenigmamus*). 3D study of its skull and its mandible. VIth *European Congress of Mammalogy*, Paris, France; July 19-23, 2011.

* Herrel A, Cornette R, **Fabre A-C**, Souter T, Adriaens D, Vanderniepen P, Van Hoorebeke L and J-P Hugot. The masticatory system in *Laonastes aenigmamus*: function and development. VIth *European Congress of Mammalogy*, Paris, France; July 19-23, 2011.

Fabre A-C, Cornette R, Baylac M and S Peigné. Morpho-functional study of the vertebral column of the Carnivora (Mammalia): approach by the tridimensional geometric morphometrics. *Symposium National de Morphométrie et Evolution des Formes*, Montpellier, France; May 27-28, 2011.

POSTER PRESENTATIONS (*Published abstracts)

* Botton-Divet L, **Fabre A-C**, Houssaye A, Herrel A and R Cornette. Ecomorphology of the hind limb long bones in Mustelidae (Mammalia: Carnivora). *International Congress of Vertebrate Morphology*, Washington DC, USA; June 29- July 4, 2016.

* Herrel A, Bohmer C, **Fabre A-C**, Herbin M, Cornette R and S Peigné. Form-function relationships and the evolution of arboreal locomotion in mammals. *International Congress of Vertebrate Morphology*, Washington DC, USA; June 29- July 4, 2016.

* Segall M, Cornette R, **Fabre A-C**, Godoy-Diana R and Herrel A. Water as a driver of evolution: the example of aquatic snakes. *International Congress of Vertebrate Morphology*, Washington DC, USA; June 29- July 4, 2016.

Marigó J, **Fabre A-C**, Boyer DM. Is the astragalus a good bone for inferring locomotion in extinct primates? II Iberian Symposium on Geometric Morphometrics, Madrid, Spain; 9-10 June, 2016.

Herrel A, Taverne M, **Fabre A-C**, Cornette R and Z Tadic. Seasonal changes in morphology and performance in insular lizards: plasticity or survival? 9th Symposium National de Morphométrie et Evolution des Formes, Paris, France; 1-2 June, 2016.

Marigó J, **Fabre A-C**, Boyer DM. Is the astragalus a good bone for inferring locomotion in extinct primates? 9th Symposium National de Morphométrie et Evolution des Formes, Paris, France; 1-2 June, 2016.

Michaud M, **Fabre A-C**, Peigné S, Veron G. Diversification phénotypique des Eupleridae (Mammalia, Carnivora), famille endémique de Madagascar. 9th Symposium National de Morphométrie et Evolution des Formes, Paris, France; 1-2 June, 2016.

* **Fabre A-C**, Salesa MJ, Cornette R, Antón M, Morales J and S Peigné. Quantitative inferences on the locomotor behavior of extinct species: new insights from 3D surface geometric morphometrics approaches, 75th SVP, Dallas, Texas, USA; 14-17 October, 2015.

Peckre L, Pouydebat E, Herrel A, Wall C and **A-C Fabre**. The evolution of manipulation behaviour in strepsirrhines. 6th European Federation for Primatology, Roma, Italy; August 25-28, 2015.

Botton-Divet L, Houssaye A, **Fabre A-C** and R Cornette. Does the best wine come in old bottles? A sliding semi-landmarks software comparison. Zoology 2014, the 21st Benelux Congress of Zoology, Institute of Zoology, Liege, Belgium; December 12-13, 2014

Djurakic M, Herrel A, **Fabre A-C** and R Cornette. How accurate do 2D geometric morphometrics quantify shell shape in chelonians? 17th European Congress of Herpetology, Veszprém, Hungary; August 22-27, 2013.

Fabre A-C, Cornette R, Slater G, Argot C, Peigné S, Goswami A and E Pouydebat. Getting a grip on the evolution of grasping in carnivores: a three-dimensional analysis of forelimb shape. 10th Annual meeting of the *London Evolutionary Research Network Conference*, London, UK; November 6, 2012.

* **Fabre A-C**, Cornette R, G Prasad, D Boyer and A Goswami (2011). A 3-D morphometric analysis of the locomotory ecology of *Deccanolestes*, a eutherian mammal from the late Cretaceous of India. *71st Annual Meeting of the Society of Vertebrate Paleontology*, Paris Las Vegas, Las Vegas, Nevada, USA; November 2-5, 2011.

* **Fabre A-C**, Cornette R, Goswami A and S Peigné. Morpho-functional study of the vertebral column of small carnivoran: 3D landmark surface approach. *European Congress of Mammalogy*, Paris, France; July 19-23, 2011.

* **Fabre A-C**, Cornette R, Baylac and S Peigné (2011). Morpho-functional study of the vertebral column of small carnivoran: 3D landmark surface approach. *European Congress of Mammalogy*, Paris, France; July 19-23, 2011.

Fabre A-C, Cornette R, Baylac M, Argot C, Herrel A, Goswami A and S Peigné. What are the influences that shape the craniocervical system of the Carnivora Musteloidea (Mammalia)? *5th International meeting on cranio-cervical systems in Vertebrates*, Paris, France; July 5-8, 2011.

Former Students

Graduate students (2):

-Margot Michaud (Museum National d'Histoire Naturelle, Paris, France, co-advisors G Veron and S. Peigné) Peut-on définir une radiation adaptative ? Etude du taux de diversification moléculaire versus disparité phénotypique chez les mammifères Carnivora - 2016-2019

-Fanny Pages (Museum National d'Histoire Naturelle, Paris, France, co-advisor Anick Abourachid) Anatomie de l'hoazin, histoire naturelle et évolutive - 2016-2019

Master degree (5):

2016

- Aurélien Lowie (Erasmus +, co-supervisors A. Herrel and R. Boistel) Evolution of grasping behaviour in Amphibians.

- Margot Michaud (Paris 6, Master 2 SEP; co-supervisors S. Peigné and G. Veron) Diversification phénotypique des Eupleridae (Mammalia, Carnivora), famille endémique de Madagascar.

- Cécile Moureaux (Paris XI, M1 magister - avec A. Herrel) Impact du milieu sur l'évolution de la capacité de préhension chez les grenouilles.

2015

- Louise Peckre (Master 2 ; co-supervisor E. Pouydebat and A. Herrel) Evolution des comportements de saisie et manipulation fine des strepsirrhiniens, now PhD student at the German Primate Center, Göttingen, Germany

2013

- Anne Vazeille (Paris 6, Master 1 SEP; co-supervisors S. Peigné and R. Cornette) Ecomorphologie crânienne et l'orientation des orbites des Musteloidea (Carnivora) en

fonction de leur stratégie locomotrice.

2011

- Livia Basher (Paris 6, Master 2 SEP; co-supervisors S. Peigné and R. Cornette) Variations morphologiques de l'articulation distale de l'humérus des Musteloidea (Carnivora)

Undergraduate students (2):

2016

- Andy Boens (Université de Lille, Licence 3 BOP, co-supervisor A. Herrel) Relations forme-fonction de la mandibule des strepsirrhiniens.

- Raphael Lahrer (IUT de Cergy Pontoise, DUT, co-supervisor A. Houssaye) Adaptation des primates à l'arboricole.