

# Gerardo A. Martín Muñoz de Cote

## Curriculum vitæ



22 Birkbeck Rd.  
London, W3 6BG UK

Mobile: (+44) 745 304 2948  
email: [gerardommc@gmail.com](mailto:gerardommc@gmail.com)

Born: 2 March 1981—Oxford, England  
Nationality: Mexican/British

## Education

- 2012-2017 PHD College of Public Health, Medical and Veterinary Sciences, James Cook University. Thesis: **Modelling Hendra virus transmission from flying foxes to horses.**
- 2007-2010 MSc in Conservation Biology, Instituto de Ecología A.C. Thesis: **A model of leptospirosis and comparison of its frequency between two sites in the Perote ground squirrel (*Spermophilus perotensis*), and two domestic species.**
- 2001-2006 BSc in Veterinary Medicine and Zootechnics, Universidad de LaSalle Bajío.
- 2000-2001 1st year Computer Science, Facultad de Matemáticas, Universidad de Guanajuato.

## Areas of specialisation

Infectious disease ecology • Public Health • Infectious disease modelling in wild animals • Ecological niche modelling • Spatial statistics • Geographic information

systems • Conservation biology

## Professional experience

- 2020 Pathology and Statistics Lecturer. Bachelor of Veterinary Sciences, Faculty of Veterinary Medicine and Zootechnics, Universidad Juárez del Estado de Durango. Durango, DGO. MX.
- 2018-2020 Research associate. Ecological Health Research Group ([Murray Lab<sup>1</sup>](http://murraylab.weebly.com/)), Department of Infectious Disease Epidemiology, Faculty of Medicine, Imperial College London at St. Mary's.
- 2017 External consultant. Project: "Modeling Spillover"(Defense Advanced Research Projects Agency, DARPA; D16AP00113), Bozeman Disease Ecology Lab, Montana State University.
- 2012-2016 PhD student.
- 2011-2012 Occasional field assistance for Dr. Martín Pereda, Universidad Juárez del Estado de Durango, Durango, DGO.
- 2007 Private veterinary practice in small pet species.
- 2006 Durrell Wildlife Conservation Trust, Jersey Zoo, Jersey, Channel Islands. Student placement. M.Sc. Javier López, head the Veterinary department. Research project: "A pilot study on the anaesthetic effects of the combination of Ketamine – medetomidine, and propofol in the anuran *Polypedates leucomystax*".
- 2006 Animal Pathology Laboratory, Regional Cattle Union, León, Guanajuato, Mex. D.V.M. Manuel Conrado González, head of the Pathology Laboratory. 600 h of professional social service.

## Grants, honors & awards

- 2012-2016 Research grant of the National Hendra Virus Research Program, Australia. RIRDC PRJ-008213.
- 2010 *Bernardo Villa* award in the 1st Latin-American Congress of Mammalogy. First prize for academic excellence in the category MSc best thesis.

---

<sup>1</sup><http://murraylab.weebly.com/>

## Publications & talks

### JOURNAL ARTICLES

- 2020 Murray, Kris A. **Martín, Gerardo** & Takuya Iwamura. **Focus on snake ecology to fight snakebite.** *The Lancet*.
- 2018 **Martín, Gerardo**; Becker, Daniel; Washburn, Alex & Raina K. Plowright. **Environmental persistence of influenza H5N1 is driven by temperature and salinity: insights from a Bayesian meta-analysis.** *Frontiers in Ecology and Evolution*.
- 2018 Brannelly, Laura A.; **Martín, Gerardo**; Lewellyn, John; Skerratt, Lee & Lee Berger. **Size dependant susceptibility to chytridiomycosis in the invasive *Rhinella marina*.** *Diseases of Aquatic Organisms*.
- 2018 **Martín, Gerardo**; Yáñez-Arenas, Carlos; Plowright, Raina K.; Carla Chen & Skerratt, Lee. **Hendra virus spillover is a bimodal system driven by climatic factors.** *EcoHealth*.
- 2018 **Martín, Gerardo**; Yáñez-Arenas, Carlos; Plowright, Raina K.; Carla Chen & Skerratt, Lee. **Climate change could increase the extent of areas at risk of Hendra virus spillover.** *EcoHealth*.
- 2017 Yáñez Arenas, Carlos Alberto; Rioja-Nieto, Rodolfo; Dzul-Manzanilla, Felipe; **Martín, Gerardo**; Chiappa-Carrara, Xavier; Buenfil-Ávila, Aura; Manrique-Saide, Pablo, Correa-Morales, Fabián; Díaz-Quinónez, José Alberto; Pérez-Rentería, Crescencio; Ordoñez-Álvarez, José & Herón Huerta. **Characterization of environmental suitability for the Asian tiger mosquito (*Aedes albopictus*) in México.** *Journal of Medical Entomology*.
- 2017 **Martín, Gerardo**; Webb, Rebecca J.; Plowright, Raina K.; Chen, Carla & Lee F. Skerratt. **Microclimates might limit indirect spillover of the bat borne zoonotic Hendra virus.** *Microbial ecology*.
- 2016 **Martín, Gerardo**; Skerratt, Lee; Yáñez-Arenas, Carlos; Plowright, Raina K. & Carla Chen. **Climatic suitability influences species specific abundance patterns of Australian flying foxes and risk of Hendra virus spillover.** *One Health Journal*.
- 2016 Alison J. Peel, Hume E. Field, Peter A. Reid, Raina K. Plowright, Christopher C. Broder, Lee F. Skerratt, David T. S. Hayman, Olivier Restif, Melanie Taylor, **Gerardo Martín**, Gary Crameri, Ina Smith, Michelle Baker, Glenn A. Marsh, Jennifer

Barr, Andrew C. Breed, James L. N. Wood, Navneet Dhand, Jenny-Ann Toribio, Andrew A. Cunningham, Ian Fulton, Wayne L. Bryden, Cristy Secombe, Lin-Fa Wang, **The equine Hendra virus vaccine remains a highly effective preventative measure against infection in horses and humans: ‘The imperative to develop a human vaccine for the Hendra virus in Australia’** *Infection Ecology and Epidemiology*. 6:31658.

- 2015 **Martín, Gerardo**; Plowright, Raina K.; Chen, Carla; Kault, David; Selleck, Paul & Lee F. Skerratt. 2015. **Hendra virus survival does not explain the pattern of transmission and implicates relatively direct transmission routes.** *Journal of General Virology*.
- 2015 Plowright, Raina; Eby, Peggy; Hudson, Peter; Smith, Ina; Westcott, David; Bryden, Wayne; Middleton, Deborah; Reid, Peter; McFarlane, Rosemary; **Martín, Gerardo**; Tabor, Gary; Skerratt, Lee; Anderson, Dale; Cramer, Gary; Quammen, David; Jordan, David; Freeman, Paul; Wang, Lin-Fa; Epstein, Jonathan; Marsh, Glenn; Kung, Nina & Hamish McCallum. 2015. **Ecological Dynamics of Emerging Bat Virus Spillover.** *Proceedings of the Royal Society B*.
- 2013 Valdez-Lares, Rosaura; **Martín-Muñoz de Cote, Gerardo A.**; Muñiz-Martínez, Raúl & Georgina Santos-Barrera. **New distributional records for amphibians from Durango, México.** *Herpetological Review*. 44 (4): 646-649.

## In-review

- 2020 **Martín, Gerardo**; Espinoza-Mendiola, Mario; Heupel, Michelle & Colin Simpfendorfer. **Estimating marine protected area network benefits for reef sharks.** *Journal of Applied Ecology*.
- 2020 Yáñez-Arenas, Carlos; **Martín, Gerardo**; Osorio-Olvera, Luis; Escobar-Luján, Jazmín; Castaño-Quitenro, Sandra; Chiappa-Carrara, Xavier & Enrique Martínez-Meyer. **The abundant niche-centroid hypothesis: key points about unfilled niches and the potential use of supraspecific modeling units.** *Biodiversity informatics*.

## Ongoing projects

- 2019 Martín, Gerardo & Kris Murray. **Redefining snakebites as a zoonotic disease: implications for global change forecasting.**

2019

Martín, Gerardo & Kris Murray. **Potential abundance of Sri Lankan venomous species.**

2019 Martín, Gerardo & Kris Murray. **Predicting the impacts of global change on snakebite burden.**

2018 Martín, Gerardo; Webb, Rebecca J.; Plowright, Raina K.; Chen, Carla & Lee F. Skerratt. **Tree cover in paddocks is the main determinant of exposure to Hendra virus in horses.**

2018 Kosch, Tiffany & Gerardo Martín. **Modelling the prevalence of amphibian chytridiomycosis in Peru.**

2018 Martín, Gerardo; Giles, John R.; Westcott, David; Parry, Hazel; Plowright, Raina; Chen, Carla & Lee F. Skerratt. **Landscape level mechanisms driving risk of Hendra virus spillover.**

#### NEWSPAPER ARTICLES

2013 Luly, Jon; Martín, Gerardo; Skerratt, Lee. 30 April 2013. **Breaking up bat colonies doesn't eliminate health risks.** *The Conversation* <sup>2</sup>

#### TALKS & POSTER PRESENTATION

2019 Association for Tropical Biology and Conservation, Asia-Pacific Chapter, Thulhiriya, Sri Lanka. **Abundance of venomous snakes of Sri Lanka in relation to climate and land cover.**

2019 MRC winter seminar series, Imperial College London at St. Mary's. **The ecology of snakebite.**

2017 Institutional seminar, Universidad de Guanajuato. **Ecology of infectious diseases: A chymera of biology?.**

2017 Wildlife disease association 2017 International Conference, San Cristóbal de las Casa, Chiapas, Mex. **Niche modelling studies on Hendra virus spillover ecology.** Talk.

2017

---

<sup>2</sup><http://theconversation.com/breaking-up-bat-colonies-doesnt-eliminate-health-risks-13580>

Mathematics Colloquium Seminar, CIMAT, A. C. **Quantitative techniques to study the ecology of disease spillover.**

- 2016 One Health Symposium. Division of Tropical Health and Medicine, College of Public Health, Medical and Veterinary Sciences, James Cook University. **Models that predict the risk of Hendra virus transmission from flying foxes to horses.** Talk.
- 2016 CBMDT and CBTID, College of Public Health, Medical and Veterinary Sciences Fitzroy island retreat. **Models of Hendra virus survival to infer transmission pathways from bats to horses.** Talk.
- 2016 CBMDT and CBTID, College of Public Health, Medical and Veterinary Sciences Fitzroy island retreat. **Models that predict risk of Hendra virus transmission from flying foxes to horses.** Poster.
- 2015 Wildlife Disease Association 2015 International Conference, Maroochydore, QLD, Australia. **Understanding frequency of contact between horses and Hendra virus.** Poster.
- 2014 Australasian Bat Society 2014 Conference. Townsville, QLD, Australia. **Hendra virus risk of spillover: The effect of weather and climate.** Talk.
- 2013 Wildlife Diseases Association Australasian section 2013 Conference. Grampians, VIC, Australia. **Contribution of climate and weather to the distribution of Hendra virus spillover events.** Talk.
- 2010 10th National Congress of Mammalogy and 1st Latinamerican Congress of Mammalogy, Guanajuato, Gto., Mexico. **A model of leptospirosis and the comparisson of its frequency between two sites in the Perote ground squirrel (*Xerospermophilus perotensis*) and two domestic species (*Capra hircus* and *Canis falimiaris*).** Talk.
- 2009 1st National Congress of Infectious Disease Ecology and Conservation Medicine , Veracruz, Ver., Mexico. **A model of leptospirosis and the comparisson of its frequency between two sites in the Perote ground squirrel (*Spermophilus perotensis*) and two domestic species.** Talk.

## Continuous education

2018

Workshop. Software carpentry workshop: GIT and Linux shell. Imperial College London. South Kensington.

2015 Workshop. Advanced techniques in data analysis with R. James Cook University, Townsville, QLD, AU. Lecturer: Murray Logan.

2014 2<sup>nd</sup> thematic schools “Ecology, Evolution and Control of Infectious Diseases”. Laboratory of Excellence CEBA, Mérida, Yucatán. Lecturer: Dr. Jean Francois Guégan.

## General skills

- Vehicle driving
  - Manual and automatic
  - Wheel on left and right hand sides (Australian driver’s licence type “O” from Queensland)
  - Small load vehicles
  - Moderate experience with 4WD vehicles
- Office: Libre/Open Office, MS Office, T<sub>E</sub>Xstudio
- Geographic information systems: R, Quantum GIS, SAGA
- Scientific writing
- Statistics with R: Spatial statistics, linear and non-linear regression, generalised linear models, generalised additive models, ecological niche modelling methods (Maxent, log-Gaussian fields, boosted regression trees, Poisson point process models), hypothesis tests.
- MCMC sampling for Bayesian statistics with JAGS (similar to WinBUGS and OpenBUGS)
- Field work
  - Small mammal trapping
  - Camera trap sampling
  - Animal tracking with GPS and radio emitters (limited experience)
- Modelling and systems thinking with Stella
- Image processing: The GIMP, Darktable

- Programming languages (in exponentially decreasing order of experience):
  - R,  $\text{\LaTeX}$ , Python, Maxima
- Image design and drawing: Inkscape, The GIMP
- Linux for general purpose use, mainly Ubuntu and Debian based distributions

## Languages

SPANISH. Mother tongue

ENGLISH. Read, write and speak. IELTS score 7.0 (2010).

## Other interests

- I've been playing classical guitar since 1998, although my first real lesson was in 2000 with Juan Márquez and then with the great guitarist Juan Carlos Laguna.
- Wildlife photography
- Swimming
- Experimenting and trying linux distributions

## Professional references

Dr. Lee Skerratt  
 College of Public Health, Medical and Veterinary Sciences  
 James Cook University  
 Douglas, 4810 QLD, Australia  
 Phone: +61 7 4781 6065  
 Email: [lee.skerratt@jcu.edu.au](mailto:lee.skerratt@jcu.edu.au)

Dr. Alberto González Romero  
 Departamento de Biología y Conservación de Vertebrados  
 Instituto de Ecología A. C.  
 Xalapa, Veracruz, México.  
 Phone: +52 228 842 1800 (ext) 4113  
 Email: [alberto.gonzalez@inecol.mx](mailto:alberto.gonzalez@inecol.mx)



Dr. Gerardo Suzán Azpiri  
Facultad de Medicina Veterinaria y Zootecnia  
Departamento de Etología, Animales silvestres y de Laboratorio  
Universidad Nacional Autónoma de México  
Distrito Federal, México  
Phone: +52 555 622 5941 (ext) 5  
Email: [gerardosuz@gmail.com](mailto:gerardosuz@gmail.com)

Dr. Carlos Yáñez-Arenas  
Facultad de Ciencias, Parque Científico y Tecnológico de Yucatán  
Universidad Nacional Autónoma de México  
Mérida, Yucatán, México  
Phone: +52 999 406 0009 (ext) 7627  
Email: [lichoso@gmail.com](mailto:lichoso@gmail.com)

Dr. Raina K. Plowright  
Bozeman Disease Ecology Lab, Department of Immunology and Microbiology  
Montana State University  
Bozeman, MT, USA  
Phone: +1 406 994 2939 Email: [rplowright@gmail.com](mailto:rplowright@gmail.com)