Benjamin Roche

Curriculum Vitae (April, 1st 2018)

ADDRESS Departamento de Etología y Fauna Silvestre
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Universidad Nacional Autónoma de México
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EDUCATION

University Paris 6 "Pierre et Marie Curie, (March 2017), Habilitation to supervise research (HDR) in Public health and Medicine
University Montpellier II, (July 2005-June 2008) PhD in Ecology and Evolutionary Biology
University Paris 6 "Pierre et Marie Curie "(Oct 2003-June 2004), Msc. Biomathematics
Conservatoire National des Arts et Métiers (Sept 2001-June 2003), Engineering studies in Computer Sciences, specialty in software development and artificial intelligence

GRANTS AND AWARDS

- September 2017 – August 2020 " **Cartography of intercellular network within the tumoral microenvironment in lung cancer and its reaction to carboplatine**". Institut National du Cancer (INCa). Task leader: $800,000
- September 2016 – August 2018 " **Development of a tool to support the decision making process for surveillance and vector control of dengue, chikungunya and Zika virus disease in Europe**". European Center for Disease Control and Prevention (ECDC). Task leader: $250,000
- March 2015 – December 2019 "**Pathogen's Niche: a new approach for infectious disease control (PANIC)**". Agence Nationale de la Recherche (ANR). Secretary of the Steering committee: $500,000
- October 2014 – October 2018 "**Pathogens interactions: A criminal conspiracy (STORY)**". Agence Nationale de la Recherche (ANR) Young Researcher. PI: $190,000
- September 2016- September 2018 **"Research for prevention or diagnostic biomarkers of gastric cancer"**. ACIP Pasteur Institute. Task leader (PI Eliette Touati): $80,000
- 2013 – Scientific excellence award from IRD.

GRANT - PAST

- January 2013- July 2017 "**Evolution of natural resistance to Cancer: Peto's paradox revisited**". Agence Nationale de la Recherche (ANR). Task leader (PIs Frédéric Thomas): $ 290,000
- April 2016 – September 2017 **"Impact of communication campaigns on human behavior and their consequences for vector-borne disease transmission"**. Institut National de Prévention et d'Education pour la Santé (INPES). PI: $70,000
- February 2017 – December 2017 "Modeling the impact of human behavior on vector-borne disease spreading. Centre National de la Recherche Scientifique (CNRS). PI: $24,000
- May 2014 – May 2015 "**Modeling Chikungunya spreading in Caribbean islands**". French Ministry of Health. Co-PI (PI: Pierre-Yves Boelle): $90,000
- January 2013- December 2015 "**Biodiversity and pathogen transmission**". French Foundation for Research in Biodiversity. co-PI (PIs: Jean-François Guégan and Jim Mills): $ 190,000
- September 2012 - September 2014 "**Regional Epidemiological Landscape Amazon Information System**". CNPq. Co-PI (PIs: Laurent Durieux and Denise Pires de Carvalho): R$ 215,000 (US$110,000)
- September 2012 - March 2013 "**Modeling of *Aedes albopictus* invasion in France**". French Ministry of Health. PI: $30,000

EMPLOYMENT RECORDS

After PhD

October 2017-Present: Research Director at the Research Institute for Development (IRD), UMMISCO lab (International Research Unit for Mathematical and Computational Modeling of Complex Systems), IRD Research Centre (Infectious Diseases department), Montpellier, FRANCE

September 2017-Present: Associated Professor at the National Autonomous University of Mexico, Faculty of veterinary research, Ciudad de Mexico, MEXICO

August 2014-Present: Head of the team "Epidemiology and Health" at the UMMISCO lab (International Research Unit for Mathematical and Computational Modeling of Complex Systems), IRD Research Centre (Infectious Diseases department), Montpellier, FRANCE

August 2011-Present: Co-director of the Centre for Ecological and Evolutionary Cancer Research (CREEC), IRD Research Centre (Infectious Diseases department), Montpellier, FRANCE

August 2011-September 2017: Permanent researcher at the Research Institute for Development (IRD), UMMISCO lab (International Research Unit for Mathematical and Computational Modeling of Complex Systems), IRD Research Centre (Infectious Diseases department), Montpellier, FRANCE

September 2010-July 2011: Permanent researcher at the Research Institute for Development (IRD), UMMISCO lab (International Research Unit for Mathematical and Computational Modeling of Complex Systems), Ecole Normale Supérieure Ulm, Paris, FRANCE

September 2009-August 2010: Post-doctoral research associate, Department of Ecology and Evolutionary Biology and the Center for Complex Systems Study, University of Michigan, Ann Arbor, MI, USA

September 2008- August 2009: Post-doctoral research associate, Odum School of Ecology, University of Georgia, Athens, GA, USA

July 2008: Scientific consultant, Food and Agriculture Organization for the United Nations (FAO), Roma, Italy

Before PhD

July 2004: Scientific Engineer (Bio-Informatics specialist) for the National Center of Ecological Analysis and Synthesis (NCEAS), Santa Barbara, CA, USA

January 2003 – June 2003: Leader of software design and development. Dismantling of nuclear power stations in France, Electricité de France, Châtou, France

November 2001 – December 2002: Developer for an Internet-Security software editor, VIGILANTe, Toulouse, France

UNDERGRADUATE STUDENTS

2017: **Philippe Travers**, « Impact of Short Text Messages on ITN usage measured by motion dataloggers in the context of malaria prevention in Burkina-Faso», Master of Public Health, French School of Public Health.
2016: **Cedric Perret**, « Interplay between ecological and evolutionary dynamics can shape cancer resistance patterns and community structure », Master in Evolutionary Ecology, University of Montpellier
2015: **Diana Karina Villa Meza**, « Modeling Chagas disease in Mexico », Master in Parasitology, University autonomous of Mexico (UNAM)
2014: **Thomas Sochacki**, « Modeling of Chikungunya epidemics in Caribbean islands », Master Approches Interdisciplinaires du Vivant, Universty Paris V Descartes.
2013: **Katie Fawcet**, « Using metagenomics approach to understand cholera dynamics in Bangladesh » Erasmus Mundus Master Programme in Evolutionary Biology.
2011: **Benoit Randuineau**, « Design of evolutionary traps for an improved vaccination against human influenza », University Paris 6 "Pierre et Marie Curie" (Ecology and Evolutionary Biology)

GRADUATE STUDENTS

Completed:

2011-2014: **Andres Garchitorena**. « Environmental changes, infectious diseases and economic development: the case of Buruli ulcer ». University Montpellier II and French School of Public Health (Ecology and Evolutionary Biology, Public Health). Co-supervision with Jean-François Guégan (IRD Montpellier).
Now researcher at the Institute of Research for Development IRD, Montpellier.

2012-2015: **Benoit Randuineau**. « Interactions between pathogens: Which influence for public health? ». University Paris 6 "Pierre et Marie Curie" (Ecology and Evolutionary Biology).
Co-supervision with Pr Bernard Cazelles (University Paris 6 "Pierre et Marie Curie", France).

2011-2015: **Farah Al-Shorbaji**. « Understanding the ecological and evolutionary dynamics of a generalist parasite at the fungal-animal boundary (*Sphaerothecum destruens*) ». University of Bournemouth (Biology).
Co-supervision with Dr Rudy Gozlan, Demetra Andreou and Robert Britton (University of Bournemouth, UK).
Now Technical Officer at the World Health Organization, Geneva, Switzerland.

2011-2017: **Bui Thi Mai Anh**. « Epidemiological modeling: a new language to attract medical doctors and public health experts to epidemiological modeling». University Paris 6 "Pierre et Marie Curie" (Computing Sciences).
Co-supervision with Dr Mikal Ziane and Serge Stinkwitch (University Paris 6 "Pierre et Marie Curie", France).
Now Lecturer at Software Engineering Department, Hanoi University of Science and Technology,

2014-2017: **Tazzio Tissot**. « Modeling tumor spatial structure: beating cancer from inside». University Montpellier II (Ecology and Evolutionary Biology).
Co-supervision with Pr Frédéric Thomas (CNRS, France).
Now temporary teaching assistant, University Pierre and Marie Curie, Paris, France.

2014-2017: **Camille Jacqueline**. « Immuno-ecology and emergence of cancerous cells: an indirect role of pathogens ». University Montpellier II (Ecology and Evolutionary Biology).
Co-supervision with Pr Frédéric Thomas (CNRS, France).
Now post-doctoral fellow, University of Pennsylvania, Pittsburgh, PA, USA.

Current students:

2016-2019: **Beatrice Gaillard**. « Characterizing human behavior against vector-borne diseases using digital epidemiology approaches». University Montpellier III (Ecology and social sciences).
Co-supervision with Pr Pierre-Jay Robert and Laurent Dormont (University Paul Valery, Montpellier, France).

2017-2020: **Jean-Marius Rakotondramanga**. « Mathematical modeling to improve malaria control in Madagascar». University Paris VI (Public Health).
Co-supervision with Dr Andres Garchitorena (IRD, Montpellier) and Dr Laurence Baril (Pasteur Institute of Madagascar, Antananarivo, Madgascar).

POST-DOCTORAL FELLOWS

Completed:

2013-2015: **Elsa Canard**. The interplay between ecological relationships, animal community structure and infectious diseases transmission.
Now researcher at INRA Rennes.

2013-2015: **Gabriel Garcia**. Relationships between biodiversity and infectious disease transmission at different spatial scales**.**
Now lecturer at the University Autonomous of Mexico (UNAM).

2015-2017: **Eve Miguel**. Ecology of malaria transmission in Bobo-Dioulasso, Burkina-Fasso.
Now researcher at the Institute of Research for Development IRD, Montpellier.

2015-2017: **Jessie Abate**. Influence of pathogen interactions on assemblage of pathogen communities and consequences for public health.
2016-2017: **Cindy Gidoin**. Evolutionary ecology of organs and consequences for carcinogenesis. **Now post-doc at the University of Basel.**
2016-2017: **Timothée Vergne**. Modeling spatio-temporal dynamics of infectious diseases to identify optimal public health strategies. **Now Assistant professor at the Veterinary school of Toulouse.**

Current:

GRADUATE ADVISORY COMMITTEES

Sara Kada, Eva Lievens, Lucrèce Delicat, Kevin Carolan (University of Montpellier), Arthur Kocher (University of Toulouse), Léa Joffrin (University of La Réunion), Getnet Kenadu Demissie (University of Montpellier).

PHD THESES EXAMINED

Hussein Khalil, **University of Umea (Sweden)**
Completion date: 06/04/17
Marie-Marie Olive, **University of Montpellier (France)**
Completion date: 09/12/16
Claude Flamand, **University of Paris X (France)**
Completion date: 18/12/15
Aaron Morris, **University of Bournemouth (UK)**
Completion date: 6/3/14
Julio Benavides, **University of Montpellier II (France) and London School of Hygiene and Tropical Medicine** (France) Completion date: 4/5/12
Eve Miguel, **University of Montpellier II (France)**
Completion date: 14/12/12

WORKING-GROUP PARTICIPATIONS

- Mathematical Biosciences Institute (MBI) workshop on "Disease ecology and Eco-Epidemiology", March 26th-30th 2018, Columbus (OH), USA. Invited.
- Ernst Strügmann Forum on "Evolutionary and Economic strategies for benefitting from other agents' investments", November 1st-6th 2015, Frankfurt, Germany. Invited.
- NESCENt Catalyst Meeting on "Biodiversity and Infectious Diseases", May 4th-5th 2015, Raleigh (NC), USA. Invited.
- NIH RAPIDD workshop on "Predicting flu phenotypic trait", March 19th-20th 2015, Cambridge, UK. Invited.
- BIODIS CESAB Working-group on "Biodiversity and Infectious Diseases", 2012-2015, Aix en Provence, France. Organizer.

CONGRESS PARTICIPATIONS

- **Roche B.** *Community epidemiology: how to consider the interactions between host and pathogen diversities.* Department of Ecology and Evolutionary Biology, University of California Los Angeles (UCLA). May 9th 2018, Los Angeles, CA, USA.
- **Roche B.** *Community epidemiology: how to consider the interactions between host and pathogen diversities.* Mathematical Biosciences Institute (MBI). March 26th-30th 2018, Columbus, OH, USA. Invited.
- **Roche B.** *Non-oncogenic infectious agents modulate cancer development through alteration of immune responses.* International society for evolution, ecology and cancer conference. December 7th-10th 2017, Tempe, AZ, USA.
- **Roche B.** *From immuno-ecology to Peto's paradox: how evolutionary ecology can improve our knowledge on cancer.* 2nd Anual Congress in Veterinary Oncology. November 30th 2017, Mexico City, Mexico. Invited.

- **Roche B.** *Climate change and human health: insights from evolutionary ecology and theoretical studies.* Special seminar on Climate change. November 9th 2017, Universidad Autonoma de Mexico (UNAM), Mexico City, Mexico. Invited.
- **Roche B.** *Phylodynamics of avian influenza: a smoking-gun for environmental transmission?* Mathematical Virology Symposium of the American Society for Virology meeting. June 24th 2017, Madison, Wisconsin, USA. Invited.
- **Roche B.** *When biodiversity protects from human health: theoretical expectations of dilution effect.* Symposium on zoonotic infections, April 6th 2017, Umea, Sweden. Invited.
- **Roche B.** *Biodiversity and infectious diseases* Pedagogic day of the Environmental council of "Ile-de-France" region, November 17th 2016, Pantin, France. Invited.
- Jacqueline C., Thomas F., **Roche B.** *An eco-immunological approach for cancer: a new role for infectious diseases?* Meeting of the International Society of Evolution, Medicine and Public Health, 23rd-25th 2016, Durham, USA.
- Abbate J., **Roche B.** *Connecting polymicrobial interactions with parasite community structure in human populations: insights from a large Gabonese cohort.* Ecology and Evolution of Infectious Diseases (EEID), June 3th-5th, Ithaca, USA (Poster)
- **Roche B.** *Dynamics of assemblage and evolution of pathogen communities.* Ecole Chercheurs de l'INRA, June 14th-17th, Pont à Mousson, France. Invited.
- **Roche B.** *Targeting the pathogen niche to improve public health strategies in low-income countries.* Special seminar at the Institut de Recherche en Sciences de la Santé (IRSS), Bobo-Dioulaso, Burkina-Faso. May 24th 2016. Invited.
- **Roche B.** *Impact of different triggers for intervention on the probability of local transmission and the size of the outbreak.* European Seminar (ECDC) on Zika virus infection and review of surveillance and control measures, April 20th-21st – 2016, Saint Maurice, France. Invited.
- **Roche B.** *About the importance of mathematical modeling to figure out infectious disease dynamics.* Special seminar at the Universidad Autonoma de Mexico, Mexico City, Mexico. October 18th 2015. Invited.
- **Roche B.** *Dilution effect vs pathogen diversity: what could the final outcome of biodiversity for human health?* 4th International congress on Disease Ecology, October 13th- 15th 2015, Tabasco, Mexico. Invited.
- **Roche B.** *Host and Parasite diversities jointly control disease risk in complex community.* International Conference on Conservation Biology, August 2nd- 6th 2015, Montpellier, France Invited.
- **Roche B.** *Chikungunya outbreak in Caribbean island: drivers of spatio-temporal dynamics and consequences for epidemics probability in metropolitan France.* Lexem Workshop, July 21st- 23rd 2015, Riva de la Garda, Italy. Invited.
- **Roche B.** *How human behavior drives the propagation of an emerging infection: the case of Chikungunya outbreak in Martinique island.* 13th Conference on Ecology and Evolution of infectious diseases, May 26th-29th 2015, Athens (GA), USA.
- **Roche B.** *Adaptive evolution and environmental durability jointly structure phylodynamic patterns in Avian Influenza Viruses*. RAPIDD Workshop, March 19-20th 2015, Cambridge, UK. Invited
- **Roche B.** *Buruli ulcer: The interactions between ecosystem, human and economic components do matter!* World Health Organization Meeting on Buruli Ulcer, March 23th 2015, WHO Headquarters, Geneva.
- García-Peña G.E., Garchitorena A.,Carolan K., Canard E., Prieur-Richard A.H., Suzán G., Mills J., **Roche B.**, Guégan J.F. *Disassembly rules influence presence of the environmentally acquired pathogen, Mycobacterium ulcerans.* BES and SFÉ Joint Annual Meeting, December 9th 2014, Lille, France.
- **Roche B.** *Should we eradicate all parasites?* Biodiversity and Health meeting, October 27th 2014, Ecole Veterinaire de Marcy l'Etoile. Invited.
- **Roche B.** *Dilution effect: current state of art.* Biodiversity and Health meeting, October 27th 2014, Ecole Veterinaire de Marcy l'Etoile. Invited.
- **Roche B.** *Reciprocal links between biodiversity and health.* Séminaires du Val de Grâce, March 27th 2014, Paris, France. Invited.

- **Roche B.** *Adaptive evolution and environmental durability jointly structure phylodynamics patterns in avian influenza viruses.* Departmental Seminar of "Evolution and Biological diversity" lab, December 19th 2013, Toulouse, France. Invited.
- **Roche B.**, Bourfia Y., Hbid H., Thomas F. *Dynamics of immune system and accumulation of cancerous cells.* Mathematics in cancer Dynamics, January 23rd-25th 2014, Marrakech, Morroco. Invited.
- **Roche B.**, Léger L., Elguero E., Fontenille D. Dispersion d'*Aedes albopictus* en France métropolitaine. Retex Dengue-Chikungunya, Ministère de la Santé, December 6th 2013, Paris, France. Invited.
- **Roche B.**, Bourfia Y., Hbid H., Thomas F. *Dynamics of immune system and accumulation of cancerous cells.* Ecological and Evolutionary aspects in Cancer, Conférence Jacques Monod, May 2d-5th 2013, Rocoff, France.
- **Roche B.**, Dobson A.P., Rohani P., Guégan J.F. *Linking community and disease ecology: The impact of species diversity on pathogen transmission.* Planet Under Pressure, March 25th-29th 2011, London, UK. Invited.
- **Roche B.** *Host and pathogen biodiversity: Which impact for public health?* Biodiversity and Emerging Infectious Diseases, 22-23 November 2010, Reunion island, France. Invited.
- **Roche B.** *Influence of host biodiversity on predictability of spatio-temporal dynamics of vector-borne diseases*. Conference on Mathematical and Computational Modeling of Complex Systems, 11-13 October 2010, Paris, France. Invited.
- **Roche B.**, Drake J.M. Rohani P. *Phylodynamics of influenza viruses: what is the role of environmental transmission?* Ecology and Evolution of Infectious Diseases, 3-5 June 2010, Cornell University, Ithaca, NY, USA. (Poster).
- **Roche B.**, Benbow M.E. and Guégan J.F. *Modeling transmission of* Mycobacterium ulcerans *through local food webs.* Annual meeting on Buruli Ulcer Initiative, 31 March - 2 April 2008, Geneva, International Conference Center, Switzerland.
- **Roche B.**, and Guégan J.F. *Avian influenza is water-borne transmitted.* Workshop ``Shared traits, extended phenotypes or GxGxE interactions'', 5 December 2007, Paris, France.
- **Roche B.**, and Guégan J.F. *Ecosystem dynamics may drive disease dynamics in wildlife.* Seminar at NSF/NIH Fogarty Center, 27 August 2007, Washington D.C. Invited.
- **Roche B.**, and Guégan J.F. *Community structure and composition: Implications for wildlife disease dynamics.* ESA Annual meeting, 5-10 August 2007, San Jose, CA, USA.
- **Roche B.** and Guégan J.F. *Impact of community structure and composition on disease dynamics in wildlife.* EcoHealth One, 7-10 October 2006, Madison, WI, USA.
- **Roche B.**, and Guégan J.F. *Spatial behavior of multi-host vector-borne diseases.* Ecology and Evolution of Infectious Diseases, 18-20 May 2006, Penn State, PA, USA (Poster). Invited
- **Roche B.**, Choisy M, Dorleans Y., Chau N.P., Flahault A., Valleron A.J. and Guégan J.F. *Metapopulation dynamics of chickenpox scrambled by zoster.* European Multicolloquium of Parasitology, 19-23 july 2004, Valencia, Spain (Poster).
- **Roche B.**, Choisy M., Dorleans Y., Chau N.P., Flahault A., Valleron A.J. and Guégan J.F. *Spatio-temporal dynamics of varicella in France: The influence of zoster.* Summer School of Mathematics in Biology and Medicine, 20-24 September 2004, Oeiras, Portugal. Invited.
- Guégan J.F., Broutin H., De Magny G., **Roche B.**, Choisy M. *Macroecology of population dynamics of infectious diseases: connecting geographical distributions with population processes.* Jacques Monod Conference 2004, 4-8 September 2004, Roscoff, France.

TEACHING - CURRENT

Master of Public Health (2010-)

Institution: French School of Public Health, Campus of Columbia University in Paris, France
Audience: International students on Public health (N.B: All lectures are in English)
Module: Global environmental changes and public health (co-organizer, 30 hours)

Global environmental changes and public health: an overview (3 hours)
Population dynamics changes and public health (3 hours)
Interactions between global environmental changes and public health (3 hours)
Biodiversity alteration and increase of pathogen transmission (3 hours)

Master of Ecology and Evolutionary Biology (2009-)
Institution: University of Montpellier, France.
Audience: Top French students in Ecology and Evolutionary Biology
Module: Ecology and evolution of infectious diseases
Adaptation, emergence and transmission of zoonotic diseases (3 hours)
Ecology of transmission: theoretical basics and fluctuations in space and time (3 hours)

Master of Ecology and Evolutionary Biology (2014-)
Institution: University of Montpellier, France.
Audience: Top French students in Ecology and Evolutionary Biology
Module: Quantitative epidemiology (Organizer, 24H)
Mathematical epidemiology (3 hours)
Evolutionary epidemiology (3 hours)

Modeling class on infectious diseases transmission (2013-)
Institution: Pasteur institute, Paris, France
Audience: PhD students, public health workers
Module: Modeling vector-borne transmission with R examples (3 hours)

TEACHING - PAST

Summer school of Complex Systems (2011-2013)
Institution: IRD, Bondy, France
Audience: PhD students, especially from developing countries.
Module: Introductive and advanced courses on complex systems (responsible of pedagogy, 270 hours)
Introduction and examples on R (6 hours)
Introduction and examples on Scilab. Fractal, epidemiological modeling (6 hours)
How to write a scientific paper? (3 hours)

PROFESSIONAL SERVICE

Manuscript reviewed for Proceedings of the National Academy of Sciences of the United States (PNAS), The Lancet Infectious Diseases, PLoS Currents Outbreaks, The American Naturalist, Journal of Theoretical Biology, Ecology Letters, Journal of Animal Ecology, EcoHealth, Biology Letters, Physical Review Letters, Physical Review E, Journal of the Royal Society Interface, Molecular Ecology, Management Science, Evolutionary Applications, Parasitology, Parasitology Research, Chaos Solutions and Fractals, Infection Genetics and Evolution, Proceedings of the Royal Society Series B, BMC Cancer, BMC Ecology, BMC Bioinformatics, Acta Tropica, Journal of Applied Ecology, PLoS One, Oikos, Nature Scientific Reports, Theoretical Ecology, Trends in Ecology and Evolution, PLoS Neglected Tropical Diseases, PLoS Computational Biology, Emerging Microbes and Infection, Nature Communications, Open Science, Ecological entomology, Environmental Microbiology, Trends in Parasitology, Frontiers in Microbiology, Faculty 1000, EcoSphere, BMJ Global Health, Annals of Oncology, Infectious Diseases and Povery and WHO Bulletin.

Review editor for EcoHealth (2014-) and Frontiers in Population and Evolutionary Dynamics (2017-), reviewer board for PLoS Current Outbreaks (2014-)

Ad-hoc referee for the "Agence Nationale de la Recherche" (equivalent to the French NSF), Medical Research Council (MRC) of UK, Ministry of health of Singapore, United-States-Israel Bi-national Science Foundation, NSERC (Natural Science and Engineering Research Council of Canada), Swiss National Science Fundation (SNSF), Grand scientific projects for Trente region (Italy), Pasteur Institute "Programmes Transversaux de Recherche", "Fonds de Recherche du Québec Santé" (FRQS) and Biodiversa European program.

Recruitment committee of permanent researcher at Research Institute for Development (IRD), section Ecology and Evolutionary Biology (2011-2015)

Post-doctoral recruitment committee at Research Institute for Development (IRD), representative of Ecology and Evolutionary Biology (2013, 2015)

PRESS COVERAGE

Nature News: Massive animals may hold secrets of cancer suppression.
Available at: www.nature.com/news/massive-animals-may-hold-secrets-of-cancer-suppression-1.12258

New Scientist: Saving species could keep humans healthy.
Available at: http://www.newscientist.com/article/dn21704-saving-species-could-keep-humans-healthy.html

BioScience: Interdisciplinarity in cancer research.
Available at : http://bioscience.oxfordjournals.org/content/65/8/750.full.pdf?etoc

Le Figaro (in French): Cancers: Pourquoi petits et gros mammifères sont à égalité.
Available at: http://www.lefigaro.fr/sciences/2014/07/27/01008-20140727ARTFIG00111-cancers-pourquoi-petits-et-gros-mammiferes-sont-a-egalite.php

Le Monde (in French): L'AND anti-cancer de la baleine boréale
Available at: http://www.lemonde.fr/sciences/article/2015/01/12/l-adn-anticancer-de-la-baleine-boreale_4554602_1650684.html

REFEREES

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Professor Aaron A. King
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Professor John Drake
University of Georgia
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Athens, GA 30602, USA
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Professor Andrew P Dobson
Princeton University
Department of Ecology and Evolutionary Biology
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Professor Leslie A Real
Emory University
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O. Wayne Rollins Research Center
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34394 Montpellier Cedex 5
FRANCE
Phone : +(33)467416205
E-mail: jean-francois.guegan@ird.fr

PUBLICATIONS

Under review/In revision

*Equally contributed
[1] Researchers from Southern countries
Supervised students are underlined

(S1) Al-Shorbaji F[1], Andreou D., Gozlan R.E., Britton J.R., and **Roche B.** (under review) The evolutionary dynamics of generalist pathogens with multiple modes of transmission. *Evolution*

(S2) **Roche B.**, Hosseini P., Prieur-Richard A.H., Vittecoq M., Garcia G., Mills J.N., Rizzoli A., Suzán G.[1], Guégan J.F., Ezenwa V.O. (in revision) On the theoretical generality of the dilution effect. *Ecology*

(S3) Miguel E., **Roche B.**, Donnelly C. (under review) Wildlife culling for disease control: potential benefits and known detrimental effects. *Biological Reviews*

(S4) Bui Thi M.A., **Roche B.**, Stinckwitch S., Ziane M., Ho T.V.[1] (in revision) Separation of Concerns in Epidemiological Modelling. *BMC Bioinformatics.*

(S5) **Roche B.*,** Randuineau B.*, Abbate J., Opatowski L., Cazelles B., Jacqueline C., Nguyen-Viet H.[1], Ezenwa V., (submitted) Pathogen interactions and public health: Moving from "fundamental" to "realized" population susceptibility.

(S7) Vergne T., Ducatez M., Rohani P., **Roche B** (submitted) Global patterns of association between cleavage site, electrostatic charge and N-glycosylation sites in H5 and H7 avian influenza virus hemagglutinins.

(S7) Kada S., Boulinier T., McCoy K.D., **Roche B.** (submitted) Superspreader and keystones species in a multi-host parasite system.

(S8) Abbate J.L., Ezenwa V.O., Guégan J.F., Choisy M., Nacher M., **Roche B.** (under review) Disentangling complex parasite interactions: protection against cerebral malaria by one helminth species is jeopardized by co-infection with another. *PLoS Neglected Tropical Diseases*

(S9) García-Peña G.E.[1], **Roche B.**, Vittecoq M., Castro-Arellano I[1], Stephens C., González Salazar C.[1], Guégan J.F., Suzán G.[1] (submitted) Hantaviruses at the interface between human and the wild: a shared infection.

(S10) Tissot T., Thomas F., **Roche B.** (submitted) The evolution of resistance and tolerance to cancer.

(S11) Jacqueline C., Faugère D., Renaud F., Missé D., Thomas F., **Roche B.** (under review) Non-oncogenic infectious agents modulate cancer development through alteration of immune responses against tumor growth.

(S12) Gidoin C., Thomas F., Roche B. (submitted) The relative contribution of organs to the host's fitness drives the evolution of cancer resistance mechanisms at organ scale.

(S13) Abbate J.L., Ezenwa V.O., Becquart P., Leroy E., **Roche B.** (submitted) Exposure to Ebola virus may increase susceptibility to malaria.

(S14) Gaillard B., Raude J., Baudin A., Garchitorena A., Simard F., Dormont L., Jay-Robert P., Salathé M., **Roche B** (under review) Public relations strategies, human behavior and public health: a new and crucial perspective for emerging vector-borne diseases. The case of French territories. *Bulletin of the WHO*

(S15) Groc S., Abbate J.L, Le Gal F., Gerber A., Tuaillon E., Albert J.L., Nkogué D.[1], Leroy E.M., **Roche B.**, Becquart P. (submitted) Prevalence and Diversity of Hepatitis B and Hepatitis Delta Virus in Gabon.

Peer-reviewed articles

(78) Jacqueline C., Bonnefoy N., Charrière G.M., Thomas F., Roche B. (in press) Personal history of infections and immunotherapy: unexpected links and possible therapeutic opportunitie. *Oncoimmunology*

(77) Jacqueline C, Abbate J.L., Sorci G., Guégan J.F., Thomas F., **Roche B.** (in press) The macroecology of cancer incidences in humans is associated with large-scale assemblages of endemic infections. *Infection, Genetics and Evolution*

(76) **Roche B.**, Ujvari B. and Thomas F. (in press) Fourth International Biannual Evolution and Cancer Conference (Resistance, Resilience and Robustness). Meeting report. Tempe, AZ, USA. 10–13 December 2017. *Evolutionary Applications*

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