

CURRICULUM VITAE

Pierre Echaubard, PhD

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Professional Appointment

Sept. 13 – current **Research associate and project manager (Ecology and Health).** Global health Asia Integrative Education and Research programme, Faculty of Public Health, Mahidol University, Thailand.

1. We provide technical support and advice in relation to the linkages between the environment and public health with a focus on infectious diseases emergence, transmission and control. We collaborate with WHO-TDR writing scoping reviews, syntheses and reports on the topic.

2. We design and implement "Global Health" research in Southeast Asia with a focus on three main areas of investigation: liver fluke research and sustainable control, health systems and modernization; environment health and pathogenic landscapes.

3. We develop "global health" and "infectious diseases" courses, lectures and seminars for diverse academic institutions in the region as well as organize workshops for health professional with a focus on "integrative methods and models for Emerging Zoonotic Diseases" and transdisciplinarity implementation.

Advisor: Prof. Bruce A. Wilcox (Global Health Asia, Mahidol University)

Sept. 13 – Dec 15 **Postdoctoral researcher.** Tropical Disease Research (TDR) Laboratory Faculty of Medicine Khon Kaen University and Biology Department, Laurentian University (LU), Canada

Research area: Asian liver fluke, *Opisthorchis viverrini*, transmission ecology and sustainable control.

Advisors: Banchoo Sripa (TDR), Frank F. Mallory (LU), Bruce A. Wilcox (MU)

Education

July 08 – October 12 PhD, Boreal Ecology program, Laurentian University, ON, Canada
Thesis title: Evolution and Ecology of Amphibian Emerging Infectious Diseases: a context-dependent approach of ranavirus virulence in *Lithobates (Rana) pipiens*,
Supervision: David Lesbarrères, GEARG, Biology Department, Laurentian University, Sudbury and Bruce Pauli, Environment Canada.

Mandatory courses (mark):

Biol 5086 – topics in Community Ecology (95/100)

Biol 6056 – Doctoral Seminars: (87/100)

Biol 4066 – Quantitative Ecology: (89/100).

- July 07 – Dec. 07** Scientific Diving Bachelor equivalent degree. University of Rennes 1, France.
Marine ecology, underwater photography, quantitative ecology, biometry, cartography, sampling techniques, Biodiversity management.
- May 06 – May 07** PhD, Evolutionary Ecology, ETH Zurich, Switzerland.
Thesis title: Evolutionary epidemiology of *Nosema Bombii* infecting *Bombus terrestris*.
Supervision: Prof. Paul Schmid-Hempel, Department of Evolutionary Biology and Ecology, ETH Zurich, Switzerland. Stopped.
- 2004 – 2006** Master Degree II (Evolutionary Biology and Ecology). University of Montpellier II, France, Honours.
Large overview of all areas of Evolutionary Biology and Ecology including host-parasite co-evolution, human evolution, evolutionary genetics, Biogeography, community ecology, population biology, Functional and evolutionary ecology, Biostatistics.
Thesis title: Conflicts between Wolbachia and Microsporidian parasites within OP insecticide resistant *Culex pipiens* mosquitoes.
Supervision: Dr. Yannis Michalakis, UMR IRD/CNRS 2724 GEMI, at the Research Institute for Development (IRD), Montpellier, France.
- 2003 – 2004** Master Degree I (Evolutionary Biology and Population Biology). University of Burgundy, Dijon, France. Honours
Lectures in Evolution, Behavioral Ecology, Population genetics, Population Biology, Macroecology, Quantitative Ecology and Modeling (behavioral ecology), Biostatistics, Conservation Biology and Biodiversity.
Thesis title: Spine morphology and ectosymbioses in Antarctic Cidaroids (Echinoldea).
Supervision: Dr. Thierry Rigaud and Prof. Bruno David, UMR CNRS 5561 Biogeosciences, Dijon, France.
- 2000 – 2003** Bachelor (General Biology and Geology), University of Burgundy, Dijon, France. Honours. Elective courses in Biostatistics and Evolutionary Biology.
- 1999 – 2000** General certificate of Education (baccalauréat) Physics and science.

Research Interests and Experience

I am using host-parasite interactions as a model system to investigate evolutionary and ecological mechanisms. The questions I am particularly interested in are local adaptation, the evolution of virulence and resistance/tolerance and more recently the link between ecological processes and infectious diseases transmission dynamics. I rely on a wide variety of conceptual frameworks and methodologies ranging from population genetics, life history evolution, coevolution theory, evolutionary epidemiology, population biology and design both lab and field experiments to address my research questions.

While I have focused in the past mainly on theoretical aspects of host-pathogens coevolution and infectious diseases transmission dynamics, I am currently using these theoretical foundations to develop integrative research at the interface between ecosystem and human health. Using a complex system thinking narrative, I currently contribute to the elaboration of a conceptual framework incorporating ecological and evolutionary dimensions with the aim to 1) better understand the Asian liver fluke *Opisthorchis viverrini* transmission dynamics through field surveys, experimental infection trials and mathematical modeling, 2) to guide and stimulate the elaboration of cohesive and holistically educated, hence more sustainable, research and disease control initiatives in Southeastern Asia.

Past Research Projects

- 2008 – 2012** Phd project (Laurentian U., ON, Canada); supervisors: (Dr.) David Lesbarrères and Bruce Pauli: « Evolution and Ecology of an Amphibian Emerging Infectious Disease: a context-dependent approach of ranavirus virulence in *Lithobates (Rana) pipiens* ». My research involved the design of laboratory infection experiments and field studies. I used a combination of genotyping, end-point PCR, TCID50 assays and GIS to assess the effects of host density, temperature, host-pathogen genotypic interactions and landscape fragmentation in modulating the outcome of ranavirus-*Lithobates pipiens* interactions and transmission.
- 2006 – 2007** Phd project (ETH Zurich, Switzerland); supervisor: (Prof.) Paul Schmid-Hempel: « Evolutionary Epidemiology of *Crithidia bombi* and its host *Bombus terrestris* ». Investigation of *C. Bombi* strains diversity and infection's temporal and spatial dynamic in the field using microsatellite markers.
- Jan. - April 2006** Independent research project (Institut des Sciences de l'Evolution, UMR CNRS 5554, University of Montpellier); supervisor: (Dr.) Mylène Weill: "Variability and expression of ankyrin domain genes in *Wolbachia* infecting the mosquito *Culex pipiens*". Sequencing of genetic domains correlated to cytoplasmic incompatibility induced by *Wolbachia* infecting *C. pipiens*.
- Jan. - Dec. 2005** Master II research project (Institut de recherche pour le Développement, UMR IRD/CNRS 2724 GEMI); supervisor: (Dr.) Yannis Michalakis: "Conflicts between *Wolbachia* and Microsporidian parasites within OP insecticide resistant *Culex pipiens* mosquitoes". Investigation of the synergistic effects of *Wolbachia* bacteria and *Vavraia culicis* microsporidia on *C. pipiens* fitness. Design of factorial experiments, use of life history traits as fitness indicators, use of qPCR to quantify *Wolbachia* density.
- June-Sept. 2004** Independent Research project (UMR CNRS 5171, Setes, France); supervisor: (Dr.) François Bonhomme: "Evolutionary genetics of the Abyssal Gastropod *Lepetodrilus*". Use of microsatellite markers to assess genetic structuration in *Lepetodrilus* populations
- Jan.-June 2004** Master I research (University of Burgundy, UMR CNRS 5561 Biogeosciences); supervisor: (Dr.) Thierry Rigaud: "Spine morphology and ectosymbioses in Antarctic cidaroids (*Echinoidea*)". Morphometric analyses of sea urchin spines and multivariate analyses to assess the influence of spine morphology on symbionts colonization.

Research Technical skills and methodology

Population genetics: Genotyping (Microsatellites), SNPs, Softwares: Structure, Genepop, Fstat, Arlequin, Micro-checker.

Molecular Biology: DNA extraction (CTAB or Kit), PCR, PCR RFLP (AluI digestion), qPCR (SYBRgreen), DNA purification, Sequencing.

Bioinformatics: knowledge in primers design, sequences analysis (Multialin, Chromas, Gene Marker)

Microbiology: TCID50 assays, Plaque assays, single step growth curves

Morphometry: sea urchins spines and mosquito wings morphology analysis with Optimas and ImageJ softwares.

Experimental Ecology: factorial infection and transmission experiments, life history traits, experimental inoculation of parasites (microsporidia, ranavirus and *Opisthorchis viverrini*), breeding of mosquitoes, snails, bumble bees and frogs, ranavirus manipulation and culture, *Opisthorchis viverrini* egg culture, field experimental design and wildlife sampling (snails, amphibians, insects, birds)

Statistics and experimental design: General and Generalized linear model, multivariate analysis; R.

Geospatial analyses: kriging and co-kriging, risk mapping, patch connectivity/fragmentation assessment (Arc GIS)

Research training and Workshops

- 2016** WHO-ASEAN NDI Expert panel consultation on Health and the Environment. Organized by the WHO special programme for Research and Training in Tropical Diseases (TDR), April 4-7th, Manila, the Philippines. Consultant.
- Water-related diseases workshop. Feb. 15th - 16th 2016, Vientiane, Lao PDR. Organized by CIRAD (UR AGIR) and the FP7 European SEA-EU-NET programme. Invited expert
- Integrative Models and Methods for Emerging Zoonotic Diseases (IMM-EZD) workshop. January 11th-13th 2016, Khao Yai National Park, Thailand. Organized by Global health Asia, MoPH Thailand, CDC. Invited expert
- 2014** Integrative Models and Methods for Emerging Zoonotic Diseases (IMM-EZD) workshop. April 28th-May 1st 2014, Khon Kaen Pullman hotel and conference center, Khon Kaen, Thailand. Organized by Global health Asia, MoPH Thailand, CDC. Participant
- R mini course by Prof. Cameron Hurst, Khon Kaen University. Starting date: march 13th 2014 (for 8 weeks).
- 2013** Computing for data analysis in R. Online course by Robert Peng, John Hopkins University. Starting date 23th of September 2013 (4 weeks).
- GIS training and support, ESRI virtual campus online courses through J.N Desmarais Library, Laurentian University, Sudbury, Ontario, Canada (2012).
- 2011** Workplace Hazardous material Information System training (WHMIS), Northern Centre for Advanced Technology Inc. (NORCAT) training (2011).
- Northern Center for Advanced Technology Inc, Contractor orientation program. Qualifies for working on mining properties and provides general rules of conduct and safety (2011).
- 2010** Ecology and Evolution of Infectious Diseases workshop (Evolution), Colorado State University (continuing education), 6th-9th June 2010, Cornell University, Ithaca, New-York, USA. Using R to investigate evolution of infectious diseases.

Publications

Published and in press.

- 2015** Pierre Echaubard, Bruce Pauli and David Lesbarrères. Ranavirus infection in Northern Leopard Frogs: the timing and number of exposure matters. *Journal of Zoology* (in press)
- Pierre Echaubard, Banchob Sripa, Frank Mallory, John F Smith and Bruce Wilcox. The importance of socio-ecological context in Eco-health initiatives. *EcoHealth: Volume 12, Issue 1 (2015), Page 4-7*
- AD Ziegler, P Echaubard, YT Lee, CJ Chuah, C Grundy-Warr, BA Wilcox, L Laithevewat, P Sithithaworn, TN Petney, X Ong, R Andrews, N Khuntikeo, P Tungtang. Untangling the Complexity of Liver Fluke Infection and Cholangiocarcinoma in NE Thailand Through Transdisciplinary Learning. *Ecohealth* (in press).
- Joël C. Leduc, Pierre Echaubard, Vance Trudeau, David Lesbarrères. Copper and nickel nitrate effects on the growth and mortality of *Lithobates pipiens* tadpoles in a field-collected smelting effluent water: ecological and experimental perspectives. *Environmental chemistry and toxicology* (in press)
- Andrée-Michelle D'Aoust-Messier, Pierre Echaubard, Vincent Billy and David Lesbarrères. *Ranavirus* in Nunavut: first report of ranavirus in the far north. *Diseases of Aquatic Organisms* (in press)
- 2014** Pierre Echaubard, Joel Leduc, Bruce Pauli, V. Gregory Chinchard, Jacques Robert and David Lesbarrères. Environmental dependency of Amphibian-ranavirus genotypic interactions: evolutionary processes and applied perspectives. *Evolutionary Applications* 7 (7): 723-733.

- Elizabeth A. Morrison, Pierre Echaubard, David Lesbarrères and Craig R. Brunetti. Complete genome sequences of 3 novel frog virus 3 (FV3) isolates, and comparison across closely related ranaviral strains. *Virology journal* 11:46 doi:10.1186/1743-422X-11-46;
- 2013 Lesbarreres, David; Ashpole, Sara; Bishop, Christine; Blouin-Demers, Gabriel; Brooks, Ronald; Echaubard, Pierre; Govindarajulu, Purnima; Green, David; Hecnar, Stephen; Herman, Tom; Houlihan, Jeff; Litzgus, Litzgus; Lougheed, Stephen; Mazerolle, Marc; Paszkowski, Cindy; Rutherford, Pamela; Schock, Danna; Storey, Kenneth. Conservation of Herpetofauna in Northern Landscapes: Threats and Challenges from a Canadian perspective. *Biological Conservation* 170: 48-55.
- 2011 Pierre Echaubard, Kevin Little, Bruce Pauli, David Lesbarrères. Context-dependent effect of ranaviral infection on Northern Leopard frog life history traits. *PLoS one*, 5(10) e13723.
- Pierre Echaubard and David Lesbarrères. Habitat fragmentation, Genetic diversity reduction and pathogen prevalence in the Northern leopard frog (*Lithobates pipiens*). *Proceedings of the 16th "Days of knowledge" conference organized by the Canadian Association of Francophony*.
- 2010 Pierre Echaubard, O Duron, P Agnew, C Sidobre, V Noël, M Weill and Y Michalakis. 2009. Rapid evolution of *Wolbachia* density in insecticide resistant *Culex pipiens*. *Heredity* 104: 15-19.
- 2008 Olivier Duron, Anthony Boureau, Pierre Echaubard, Arnaud berthomieux, Claire Berticat, Philippe Fort and Mylène Weill. Variability and expression of ankyrin domain genes in *Wolbachia* infecting the mosquito *Culex pipiens*. *Journal of Bacteriology* 189: 4442- 4448.

In revision.

Pierre Echaubard, Charles Ramcharan and David Lesbarrères. Host-Parasite Evolutionary-Ecology: En Route to a New Paradigm from Genes to Communities (re-submission to *Ecological Monographs*).

Pierre Echaubard, Banchoh Sripa, Frank F Mallory and Bruce Wilcox. The Role of Evolutionary Biology in Research and Control of Liver flukes in Southeast Asia. (review article) *Infection Genetics and Evolution* (accepted with minor revisions)

Christina Sunyoung Kim, Pierre Echaubard, Apiporn Suwannatrai, John F Smith, Bruce Wilcox, Sasithorn Kaewkes, Paiboon Sithithaworn, Banchoh Sripa. Seasonal and Spatial Environmental Influence on *Opisthorchis viverrini* Intermediate Hosts, Abundance and Distribution: Insights on Transmission Dynamics and Sustainable Control. *PLoS Neglected Tropical Diseases* (accepted with revisions).

Parichat Saenna, Cameron Hurst, Pierre Echaubard, Bruce A. Wilcox and Banchoh Sripa. Food Sharing as a Risk Factor in *Opisthorchis viverrini* Infection: Evidence from Two Villages in Northeastern Thailand. *Infectious Diseases of Poverty* (accepted with revisions).

Submitted

Pierre Echaubard, Bruce Pauli and David Lesbarrères. Habitat fragmentation, genetic diversity depletion and pathogen prevalence: a landscape genetics approach in the Leopard frog-ranavirus system (submitted to *Molecular Ecology*)

Jennifer Steele, Carsten Richter, Pierre Echaubard, Parichat Saenna, Virginia Stout and Bruce A. Wilcox. Risk factors for cholangiocarcinoma in the *Opisthorchis viverrini* endemic lower Mekong region: a systematic review and meta-analysis. Submitted to *Lancet Infectious Diseases*

Pierre Echaubard, Tomas Leon, Kulwadee Suwanatrai, Sasithorn Kaewkes, Frank F Mallory and Banchoh Sripa. Assessing *Opisthorchis viverrini* transmission dynamics: Experimental and modeling investigations of miracidium infectiousness and survival over time and across a temperature gradient. Submitted to *PLoS Neglected Tropical Diseases*.

Bruce Wilcox and Pierre Echaubard. Balancing biomedical and ecological perspectives in research framing of liver fluke and CCA in Thailand. Submitted commissioned review for *Parasitology International*.

Commissioned scoping reviews:

Reviews commissioned by the World Health Organization (WHO), Special Programme for Research and Training in Tropical Diseases (TDR) :

Wilcox B., Echaubard P., Richter C., Steele J. Health, Biodiversity, Traditional Knowledge and Climate Change Adaptation. WHO-TDR 2015

Wilcox B., Echaubard P., Richter C., Steele J. Health and Climate Change in Dryland Socio-Ecological Systems. WHO-TDR 2015

Book in preparation :

Building Resilience for Health in Southeast Asia: From People to Ecosystems. Wilcox B. A. and Echaubard P. editors.

Editorial appointment:

2013- present. Associate Editor for *Infection Genetic and Evolution* (Elsevier, Editor in Chief: Michel Tibayrenc, Impact Factor 3.1). Assessment of 40+ manuscripts which topics range from pathogens genotyping and molecular epidemiology to vaccines development.

2013-present. English editor for the *Asian Pacific Journal of Allergy and Immunology* (50+ manuscripts edited)

Reviewer for: *Ecological applications*, *Parasitology international*, *Viruses*, *The Northeastern Naturalist*, *Infection Genetics and Evolution*

PUBLONS PROFILE: <https://publons.com/author/441094/pierre-echaubard#profile>

Academic Conference Presentations

2016 John F. Smith* & Pierre Echaubard. Complexity of social/behavioural OV infection risk factors, needs greater social, behavioural and bio-medical sciences collaboration. Workshop on Social and Anthropological Aspects of CCA. Tuesday 26th April 2016, Khon KAen University Thailand.

Wilcox B. A.* & Echaubard P. Challenges and Opportunities in Integrative health Research. Oral presentation. International Conference on Neglected Tropical Diseases in Asia (NTDASIA 2016). Jan 14-15, 2016, Khon Kaen, Thailand.

P. Echaubard*, B. Sripa, F. Mallory and B. A. Wilcox. The role of Evolutionary Biology in liver fluke research and control in Southeast Asia. Oral presentation. NTDASIA 2016, Jan 14-15, 2016, Khon Kaen, Thailand.

John F. Smith*, Pierre Echaubard, and B. A. Wilcox. Toward Evidence Based Liver Fluke and CCA Intervention in NE Thailand. Poster presentation. NTDASIA 2016, Jan 14-15, 2016, Khon Kaen, Thailand.

2015 P. Echaubard, B. Sripa, F. Mallory and B. A. Wilcox. The role of Evolutionary Biology in liver fluke research and control in Southeast Asia. Oral presentation. 9th National Health Research Forum, Vientiane, Lao PDR, Oct. 13-14, 2015.

B. A. Wilcox, P. Echaubard, C. Richter*, S. Saksena, J. Fox, J. Xu, A. Zeigler. Toward a Theory of Pathogenic Landscapes: Insights from Three Disparate Diseases in the Mekong Region. Oral presentation. 3rd One Health Summit, Davos, Switzerland, Oct. 4-6, 2015.

Raphael Duboz*, Aurelle Binot, Panomsak Romburom, Pierre Echaubard, Carsten Richter, Jennifer Steele, Bruce Wilcox. Participatory One Health Modeling. Oral Presentation. 5th International Conference on Infectious Diseases Dynamics, Clearwater Beach, Florida, USA, Dec 1-4, 2015.

Pierre Echaubard*, Tomas Leon, Kulwadee Suwanatrai, Sasithorn Kaewkes, Frank F Mallory and Banchob Sripa. Assessing *Opisthorchis viverrini* transmission dynamics: Experimental and modeling investigations of miracidium infectiousness and survival over time and across a temperature gradient. International Congress of Liver Flukes and Cholangiocarcinoma: Towards control and elimination *Orchid Ballroom 1, Pullman Raja Orchid Hotel Khon Kaen, Thailand 11-12 May 2015*

Bruce Wilcox*, Carsten Richter, Pierre Echaubard, Jennifer Steele, and Boripat Siriaoonrat. Liver fluke and cholangiocarcinoma in a social-ecological systems context: disease control implications for northeast Thailand. Oral presentation. International Congress of Liver Flukes and Cholangiocarcinoma: Towards control and elimination *Orchid Ballroom 1, Pullman Raja Orchid Hotel Khon Kaen, Thailand 11-12 May 2015*

Jennifer Steele, Carsten Richter, Pierre Echaubard, Virginia Stout, Parichat Saenna, and Bruce Wilcox*. Considering multiple risk factors for public health interventions to reduce cholangiocarcinoma in the lower Mekong region: a systematic review and meta-analysis. Poster presentation. International Congress of Liver Flukes and Cholangiocarcinoma: Towards control and elimination *Orchid Ballroom 1, Pullman Raja Orchid Hotel Khon Kaen, Thailand 11-12 May 2015*

John F. Smith*, Pierre Echaubard, Carsten Richter, Jenny Steele and Bruce A. Wilcox. Toward Evidence Based Liver Fluke and CCA Intervention in NE Thailand. Poster presentation. International Congress of Liver Flukes and Cholangiocarcinoma: Towards control and elimination *Orchid Ballroom 1, Pullman Raja Orchid Hotel Khon Kaen, Thailand 11-12 May 2015*

Christina Sunyoung Kim*, Pierre Echaubard, Apiporn Suwannatrai, John F Smith, Bruce Wilcox, Sasithorn Kaewkes, Pailoon Sithithaworn, Banchob Sripa. Seasonal and Spatial Environmental Influence on *Opisthorchis viverrini* Intermediate Hosts, Abundance and Distribution: Insights on Transmission Dynamics and Sustainable Control. Oral presentation. International Congress of Liver Flukes and Cholangiocarcinoma: Towards control and elimination *Orchid Ballroom 1, Pullman Raja Orchid Hotel Khon Kaen, Thailand 11-12 May 2015*.

2014 Pierre Echaubard*, Carsten Richter, Bruce Wilcox. Ecology, Evolution and Genetics: A Post-Modern Synthesis toward improving understanding and control of zoonotic diseases in Southeast Asia. Oral presentation at the 12th International conference on Molecular Epidemiology and Evolutionary Genetics of Infectious Diseases (MEEGID). 11-13 December 2014, Bangkok, Thailand.

Pierre Echaubard*, Marleen Werkman, Carsten Richter, Bruce Wilcox, Frank Mallory, Banchob Sripa. Elucidating Liver fluke transmission: moving from a static life-cycle perspective to a dynamic functional approach. Oral presentation. Symposium on Neglected Tropical Diseases in Asia (NTDASIA 2014) "Interdisciplinary Research on Liver Flukes". Sept. 16-17, 2014, Khon Kaen, Thailand.

Carsten Richter, Pierre Echaubard*, Jianchu Xu, Frank Mallory, Bruce Wilcox. Principles and methods to understand snails - helminthes transmission dynamics in the field: a technical report. Poster presentation. NTDASIA 2014

Jennifer Steele, Carsten Richter, Parichat Saenna, Virginia Stout, Pierre Echaubard, Sara Samiphak, and Bruce Wilcox*. Thinking beyond *Opisthorchis viverrini* infection for risk of cholangiocarcinoma in Northeast Thailand. Poster presentation. NTDASIA 2014.

Allan Ziegler*, Bruce Wilcox, Carl Grundy-Warr, Joon Chuah, Pierre Echaubard. Persistence of High *Opisthorchis Viverrini* Infection and Cholangiocarcinoma in Northeastern Thailand: A Multi-Cultural and Interdisciplinary Investigation to Understanding the Potential Social, Cultural and Environmental Drivers of the Disease Poster presentation. NTDASIA 2014.

- Pierre Echaubard*, Frank Mallory, Banchob Sripa and Bruce Wilcox. Human parasites and landuse practices: eco-evolutionary drivers of disease risks. 15th Khon Kaen Veterinary Annual International conference. 24-25 April, 2014, Khon Kaen, Thailand. **Invited speaker.**
- 2013** Pierre Echaubard and David Lesbarrères*. Environmental dependency of Ranavirus/Amphibian genotypic interactions: A coevolutionary Rubik's cube. **Invited presentation** in symposium: "Ecological and evolutionary perspectives on infectious disease in theory and practice". 8th Canadian Society for Ecology and Evolution (CSEE) conference. May 12-15, 2013, University of British Columbia, Kelowna, Canada. (National)
- Pierre Echaubard*, Lindsay Wilkinson, Bruce Pauli, David Lesbarrères. Habitat fragmentation, host genetic diversity depletion and pathogen prevalence in *Lithobates (Rana) pipiens*: a landscape genetics approach. Oral presentation. 8th CSEE conference.
- Andrée-Michelle D'Aoust-Messier*, David Lesbarrères, Pierre Echaubard, Vincent Billy. Ecological genetics and diseases at the periphery: a wood frog story. Oral presentation. 8th CSEE conference.
- 2012** Pierre Echaubard*, Bruce Pauli and David Lesbarrères. Habitat fragmentation, host genetic diversity and pathogen prevalence: a landscape genetic approach in the Leopard frog-ranavirus system. Oral presentation, 7th World Congress of Herpetology (WCH) conference. 8th-13th August, University of British Columbia, Vancouver, Canada. (International).
- David Lesbarrères*, Pierre Echaubard, Dana Schock. Infectious diseases as a threat to Canadian amphibian populations. Invited presentation, Symposium: "Canadian Herpetofauna: What are the threats?". 7th WCH conference.
- 2011** Pierre Echaubard*, Joel Leduc, Bruce Pauli and David Lesbarrères. *Ranavirus*/Amphibian genotypic interactions in variable environment: a coevolutionary Rubik's cube. Oral presentation, 21th CARCNET (Canadian Amphibian and Reptile Conservation Network) conference. 9th-12th Sept, Lakehead University, Thunder Bay, Ontario, Canada. (National).
- Pierre Echaubard*, Joel Leduc, Bruce Pauli and David Lesbarrères. *Ranavirus*/Amphibian genotypic interactions in variable environment: a coevolutionary Rubik's cube. Oral presentation, 5th CSEE (Canadian Society for Ecology and Evolution) conference. 14th-17th May, Banff Center, Banff, Canada. (National)
- 2010** Pierre Echaubard* and David Lesbarrères. *Lithobates pipiens* stages susceptibility to Ranavirus: insights on FV3 transmission patterns. Oral presentation, 20th CARCNET (Canadian Amphibian and Reptile Conservation Network) conference. 17th-20th Sept, Acadia University, Wolfville, Nova Scotia, Canada. (National).
- Pierre Echaubard* and David Lesbarrères. *Host-parasite evolutionary ecology: towards a new paradigm?*. Oral presentation, OEEC (Ontario Ecology and Ethology Colloquium) conference. 14th-16th July 2010, Laurentian University, Sudbury, On, Canada (regional).
- Pierre Echaubard* and David Lesbarrères. *Host-parasite evolutionary ecology: towards a new paradigm?*. Poster presentation, EEID (Ecology and Evolution of Infectious Diseases) conference. 3rd-5th June 2010, Cornell University, USA (International)
- Pierre Echaubard* and David Lesbarrères. *Écologie évolutive des relations hôte-parasite : vers un nouveau paradigme?* Oral presentation, 17^{eme} journée des Sciences et Savoirs de l'Université Laurentienne, 1st april 2010 (regional, awarded best presentation)
- 2009** Pierre Echaubard*, Kevin Little, David Lesbarrères. Context-dependant effect of ranaviral infection on life history of the Northern leopard frog (*Rana pipiens*). Oral presentation, 19th CARCNET (Canadian Amphibian and Reptile Conservation Network) conference. 25th-29th Sept, Saskatoon, Saskatchewan, Canada. (National).
- Pierre Echaubard*, Kevin Little, David Lesbarrères. Context-dependant effect of ranaviral infection on life history of the Northern leopard frog (*Rana pipiens*). Oral presentation, 3rd CSEE (Canadian Society for Ecology and Evolution) conference. 14th-17th May, Dalhousie University, Halifax, Canada. (National)

- Pierre Echaubard* and David Lesbarrères. Fragmentation d'habitat, diversité génétique et maladie d'amphibiens. Oral présentation. 16eme journée des Sciences et Savoirs de l'Université Laurentienne, 3rd april 2009 (institutional, 4th best oral presentation)
- Pierre Echaubard* and David Lesbarrères. Habitat fragmentation, genetic diversity and Amphibian diseases. Oral presentation. Laurentian University, Graduate research symposium. 11-12th February 2009 (Institutional)
- 2007 Pierre Echaubard* & Yannis Michalakis. Transgenerational costs for the mosquito *Aedes aegypti*. Poster. ESF-FWF Conference, « The Impact of the Environment on Innate Immunity » 22-27 April 2007, Obergurgl, Austria (International)
- 2006 Pierre Echaubard*, Olivier Duron, Philip Agnew, Christine Sidobre, Yannis Michalakis. Evolution of Wolbachia density in *Culex pipiens* : toward an optimal association ? Poster presentation. 5th R.E.I.D (Réseau Ecologie des Interactions Durables), January 9 – 12, 2006, Dijon, France.
- 2005 Pierre Echaubard*, Philip Agnew, Christine Sidobre, Yannis Michalakis. *Conflicts between Wolbachia and other parasites within insecticide resistant mosquitoes*. Poster presentation. 10th congress of the European society for evolutionary biology, August 15 - 20, 2005, Jagiellonian University, Cracow, Poland.

Academic Conference and Workshop Organization

- July 2016 2nd international symposium "Biodiversity and Health in SouthEast Asia", Mahidol University, Bangkok, Thailand. 11-13 July 2016. Organizing committee.
- Jan. 2016 NTD Asia 2016, 13-15 January, 2016, Khon Kaen, Thailand. Member of the Organizing committee and scientific poster evaluation board.
- Oct. 2015 Research methods and scientific publishing. Lead presenter and organizer. Faculty of Education, Khon Ken University, Khon Ken, Thailand.
- Aug. 2012 Volunteer organizer at the 7th World Congress of Herpetology (WCH7), 8th -14th Aug., University of British Columbia, Vancouver, Canada.
- July 2010 Organization of the Ontario Ecology and Ethology Colloquium (OEEC), 14th-16th July, Laurentian University, Sudbury, On, Canada (<http://oeec2010.jimdo.com/>)
- Jan. 2005 Volunteer organizer at the International Conference: « Biodiversité, science et gouvernance », 24th-28th January, Paris, FRANCE.

Awards

- 2012 Laurentian Research Symposium "Outstanding Research Award"
- 2011 Ontario Graduate Scholarship (OGS) for international student (15000\$). This is the first time in Laurentian University history, that an international graduate student received this grant.
- 2010 The Watson family graduate fellowship (2000\$)
1st price of the best oral communication at the "17th journée des sciences et savoirs", Laurentian University (1000\$).
- 2009 4th price of the best oral communication at the "16th journée des sciences et savoirs", Laurentian University (200\$).
- 2008/11 Fee Waiver for International student: "this award is given to a student who has good grades and excellent research potential" (6000\$).
- 2008 NSERC Pilot Program for Reinforcement of Research Capacity. Motivated by academic results and research potential (5850\$).

Teaching Experience

Through my research experience I learnt how to develop my own independent and creative thinking. When I am teaching I believe it is fundamental to encourage students' confidence and to support their originality in order to promote their own unique perspectives while delivering organized and extensive knowledge.

- February 2016** . Science communication in theory and practice. Lecture for bachelor students, faculty of Nursing, Khon Kaen University.
- Sept – Dec. 2015** 359.710 Topics in Tropical Medicine, Tropical Medicine Graduate Program, Faculty of medicine, Khon Kaen University, Thailand. Advanced issues and research progress in the area of tropical medicine, Application of current knowledge and techniques in biomedical sciences, epidemiology, one health and ecohealth. Course co-organizer
- March 2015** 359.711 Tropical Disease Control, Tropical Medicine Graduate Program, Faculty of medicine, Khon Kaen University, Thailand. Invited lecturer.
- Lecture 1 The Science of Tropical Disease Prevention & Control Past, Present and Future
- Lecture 2 Systems science concepts and applications to Disease Control and Prevention
- September 2014** Lecture: Health risks at the Human – Ecosystem interface: an eco-evolutionary perspective. Tropical Disease Research laboratory, Biomedical Seminar Series, Khon Kaen University, Thailand.
- May – June 2014** "Liver fluke workshop". Assisting with teaching principles of evolution, ecology, landscape ecology. Implementation of study projects around the themes of landuse change, ecological disruption and disease transmission for bachelor students from the National University of Singapore (Singapore) and Khon Kaen University (Thailand).
- Winter 2011-2012** Sessional Assistant professor. BIOL 2356F- Principles of ecology, Laurentian University, On, Canada.
- 2009-2010** Organization of the Laurentian Interaction seminar. Monthly seminar dedicated to mainly young Ecologist and evolutionary biologist.
- 2008-2011** Teaching Assistant at Laurentian university, department of Biology. I organized introductory lectures and designed laboratory demonstrations to illustrate course concepts. I was also responsible for reports assessments and advising students
- BIOL 1506 FLL– Biology I laboratories (60+ students)
 - BIOL 1506 FLL– Biology II laboratories (60+ students)
 - BIOL 3706 EL – General Entomology (30 students)
 - BIOL 4016 F – Field Ecology x3 (14 students)
 - BIOL 3327 F – Experimental Methods (12 students)
 - BIOL 4797 E – Environmental physiology (21 students)
 - BIOL 2706 F – Comparative zoology x2 (25 students)
 - BIOL 4717 E – Animal Behavior x3 (50+ students)
- Guest Lectures: "Insect locomotion" for the course BIOL 3706 General entomo.
 "insect sampling" for the course BIOL 4016 EL Field Ecology
 "Cellular respiration" for BIOL 1506F, Biology 1
- 2006-2007** Organisation of the Zurich Interaction Seminar. Weekly seminar dedicated to mainly young Evolutionary Biologists and ecologists. ETH Zurich.
- 2003-2004** Biostatistics (40 hours): teaching assistant at the University of Burgundy, France.

Mentoring

I am really eager to confer a conceptual dimension to my supervision, delivering important basic principles helping the students contextualizing their research questions and providing them with a framework along which they can articulate their own ideas and develop their critical thinking skills.

- May 2015 – present** Co-supervision of Christina Sunyoung Kim PhD project: The Social and Ecological Determinants of *Opisthorchis viverrini* Transmission in Lawa Lake, Khon Kaen, Thailand.
- April – Sept. 2014** Co-supervision of Jukkrid Chayos Msc project: Experimental investigations of *Opisthorchis viverrini* extra-uterine egg maturation and survival: assessing transmission risk from definitive host to snails.
- Sept 2010 – June 2012** Co-supervision of Joel Leduc MSc project. Ecotoxicology and Amphibian Emergent Infectious Diseases. Laurentian University
- Feb. 2011 – April 2012** Co-supervision of Vincent Billy's internship: individual discussions in evolutionary ecology and lab supervision in the context of the "amphibian diseases genetic screening" project at Laurentian University.
- April – Sept. 2010** Co-supervision of Joel Leduc' honors project. Investigations of Host genotype by parasite genotype by environment interactions in the *Ranavirus/Lithobates pipiens* system. Laurentian University
- April – Sept. 2010** Co-supervision of Lindsay Wilkinson' work study project. Landscape genetics and amphibian Emergent Infectious Diseases. Laurentian University
- 2008-2009** Co-supervision of Kevin Little 4th year project: Factors affecting the virulence of Frog Virus 3 on Northern leopard frog tadpoles. Laurentian University

Professional Memberships

- 2008-2012** Member of the Canadian Society for Ecology and Evolution (CSEE)
Member of the Laurentian Sustainable Earth Club
Member of the Canadian Amphibian and Reptile Conservation Network (CARCNET)

Additional Skills and Interests

- Languages** French: fluent (mother tongue)
English: TOEFL: 100/120 (2008) followed by 7 years in English-speaking environments
Spanish: conversational, good oral and written understanding
Thai: beginner
- Community services** past student representative for the **President's Action Committee on the Environment (PACE)**, Laurentian University
Past Graduate Student Association delegate for the Boreal Ecology Department at Laurentian University
BAFA (French certification for children supervision)
- Sport** 3*** CMAS diving licence, Biology guide, PADI Divemaster and scientific diver
Trekking, Rock and Ice Climbing.
- Arts** drawing, painting, wooden jewelry and music

References

Dr. David Lesbarrères, Genetics and Ecology of Amphibian Research Group, Biology Department of Laurentian University 935 Ramsey Lake Road Sudbury, Ontario P3E 2C6 Canada, dlesbarreres@laurentian.ca, tel: 705-675-1151 x 3232 (Phd supervisor).

Prof. Frank Malory, Biology Department, Laurentian University 935 Ramsey Lake Road Sudbury, Ontario P3E 2C6 Canada, Fmalory@laurentian.ca (postdoctoral advisor).

Prof. Albrecht Schulte-Hostedde, Canada Research Chair (tier 2) in Applied Evolutionary Ecology, Biology Department, Laurentian University 935 Ramsey Lake Road Sudbury, Ontario P3E 2C6 Canada, aschulte@laurentian.ca, tel: 705-675-1151 x 2356 (Phd committee).

Prof. Bruce Wilcox, Integrative Education and Research Program, Faculty of Public Health, Mahidol University, Bangkok, Thailand and Cummings School of Veterinary Medicine, Tufts University, Medford, MA 02155, USA. wilcox.bruce@gmail.com (postdoctoral advisor).

Dr. Michel Tibayrenc, IRD research director, Editor-in-Chief, Infection, Genetics and Evolution, Maladies Infectieuses et Vecteurs Ecologie, Génétique, Evolution et Contrôle (MIVEGEC), Institut de Recherche pour le Développement (IRD), 34394 cedex 5 Montpellier, France . Michel.Tibayrenc@ird.fr (Editorial advisor).

Dr. Serge Morand, CNRS Research Director, Team Evolution Expérimentale des Communautés: serge.morand@univ-montp2.fr (research collaborator and advisor).

Prof. Alan Zielger, National University of Singapore. geoadz@nus.edu.sg (research collaborator)

Prof. John F. Smith, Auckland University of Technology and Khon Kaen University. johnsm@kku.ac.th (advisor and research collaborator - Public Health).