

Curriculum Vitae

Yann Bourgeois

Ph.D. in Ecology, Biodiversity and Evolution

Personal information

Identity

Birth date: June 12th 1987 (33 years old)

[Scholar](#) and [Orcid](#)

Nationality: French

Languages: French (native), English (fluent), German (intermediate, B1)

Professional address

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Education

- Sept. 2009- Aug. 2013 PhD student at the University of Toulouse, France. Investigating the proximate causes of a color polymorphism in a passerine bird, *Zosterops borbonicus*. Defense: **23th of July 2013**. Supervisor: Christophe Thébaud.
- Sept. 2007-Aug. 2009 Master in Biosciences (M1, M2), Ecole Normale Supérieure de Lyon.
- Sept. 2006-Aug. 2007 Admission by competitive examination to Ecole Normale Supérieure de Lyon, France. Bachelor of Science, major in Molecular and Cell Biology.

Employment history

- Jan. 2020-to date Lecturer in Bioinformatics at the University of Portsmouth, UK.
- Sept. 2016-to Dec. 2019 Post-doctoral researcher in Stéphane Boissinot's group at NYU Abu Dhabi. Evolutionary genomics of vertebrates using whole-genome sequences.
- Sept. 2013- Aug. 2016 Post-doctoral researcher in Dieter Ebert's group in Basel, Switzerland. Study of the evolutionary dynamics of host-parasite interaction in *Daphnia magna*.

Research projects and grants

- September 2020 Co-investigator on a conservation project focusing on the endangered Reunion harrier (**103,088 euros**). Lead PI: **Steve Augiron**, SEOR. Role: investigating the mutational load and past history of the species. Funded by **Conseil Régional de La Réunion (France)**, *Programme Opérationnel FEDER Réunion Conseil Régional 2014-2020*.
- April 2020-Sept 2021 Co-investigator on a project investigating SARS-CoV2 dynamics in Portsmouth region (**£288,800**). Lead PI: **Samuel Robson**, Portsmouth University. Funded by **COG-UK**.
- February 2020 Marie Curie Fellowship (Returning Investigator) from the **European Research Council**. Project BrachyAdapt: adaptation to the urban environment in *Brachypodium distachyon*. (**190,000 euros**, score of **92.8%**). Declined due to taking a permanent position in Portsmouth.
- April 2010 ATUPS program travel grant from Toulouse University (**1,500 euros**). One month in **Hopi Hoekstra's laboratory**, Harvard, United States.
- Sept. 2010-Aug. 2013 PhD supported by a grant from the **French Ministry of Higher Education and Research (50,000 euros)**.
- Sept. 2006-Aug. 2010 Master and first year of PhD supported by a grant from the **French Ministry of Higher Education and Research (67,000 euros)**.

Teaching activities

- January 2020- to date Lectures and workshops in Bioinformatics (Master level), population genetics, Python and R (L1, L2), and Introduction to Biology (60 hours).
- Sept. 2018-Aug. 2019 Supervision of an undergraduate student (**Imtiyaz Hariyani**): population genomics of transposable elements in a complex of Ethiopian frogs (genus *Ptychadena*). Evaluation of undergraduate research theses in population genetics.
- Sept. 2017-Aug. 2018 Supervision of three undergraduate students (Jigar Govind, Sudikhya Shrestha, Mona Nehme): population genetics and signatures of balancing selection at immune genes in endemic Ethiopian frogs. Invited lecture in evolutionary immunology at **NYUAD** (1 hour).
- Sept. 2014-Jun. 2015 Basics in Population Genetics for bachelor students. 20 hours. Participation to BlockKurse at the **University of Basel**. Co-supervision of **four bachelor students** for a short research project (three months).
- Oct. 2010-Jun. 2012 Supervision of bachelor and master students. Co-supervision of an ornithology module (organized by Christophe Thébaud).

Oct. 2009-Jan. 2010 Animal anatomy and Plant organization practical classes for bachelor students.
18 hours.

Scientific service

- **Reviewer** for *eLife*, *PCI Genomics*, *Genome Biology and Evolution*, *Molecular Biology and Evolution*, *Ibis*, *The Auk*, *PeerJ*, *Genetica*, *Molecular Ecology*, *Molecular Ecology Resources*, *BMC Evolutionary Biology*, *Global Change Biology*, *Biology Letters*, *Genetics and Molecular Biology*, the Czech Science Foundation, the Hong Kong Research Grants Council and the US-Israel Binational Science Foundation.
- **Involved in COG-UK** (2020-2021), a network aiming at obtaining and analyzing COVID-19 genome sequences in the United Kingdom.
- **Assessor** for PhD. committees (2020): Francesca Noyce (University of Portsmouth), Christina Scott (University of Portsmouth), Nikolaos Minadakis (Botanical Institute, University of Zurich), Matthieu Breil (ISEM, University of Montpellier), James Robbins (University of Portsmouth).
- **Examiner** for PhD viva (2020): Werner Struss (University of Portsmouth).
- **Co-organizer of the post-doctoral day** in Basel (Sept. 2015), with short talks from post-doctoral researchers in biology.
- **Representative of Ph.D. students** in Toulouse (2010).

Others

- **Animal manipulation certifications:** The CITI Basic Course in Laboratory Animal Welfare for Investigators, Staff and Students, Reducing Pain and Distress in Laboratory Mice and Rats, Working with Amphibians in Research Settings.
- **Fieldwork:** Five months of fieldwork on leatherback turtles in French Guiana (2008), two months of fieldwork on endemic birds in Reunion island (2009-2014), three weeks of fieldwork in Siberia (collection of *Daphnia magna* samples, 2015), three months of fieldwork in Ethiopia (bird and amphibian collection, 2016-2018).

Publications in peer-reviewed scientific journals

* shared first authorship. Underlined titles are considered the most significant.

[31] Ameline C., **Bourgeois Y.X.C.**, Voegtli F., Savola E., Andras J., Engelstaedter J., Ebert D. (2021). A two-locus system with strong epistasis underlies rapid parasite-mediated evolution of host resistance. Preprint on [BioRxiv](#). In press in **Molecular Biology and Evolution**.

[30] **Bourgeois Y.X.C.**, Ruggiero R.P., Hariyani I., Boissinot S. (2020). Disentangling the determinants of transposable elements dynamics in vertebrate genomes using empirical evidences and simulations. **PLoS Genetics**.

[29] The COVID-19 Genomics UK (COG-UK) consortium. (2020) An integrated national scale SARS-CoV-2 genomic surveillance network. **The Lancet Microbe**.
Note: report on COV-19 epidemics in Portsmouth region regularly updated and available at <https://github.com/YannBourgeois/A-phylo-dynamic-analysis-of-SARS-CoV-2-outbreak-in-a-densely-populated-city-Portsmouth-UK->

- [28] **Bourgeois Y.X.C.**, Bertrand J.A.M., Delahaie B., Holota H., Thébaud C., Milá B. (2020). *Differential divergence in autosomes and sex chromosomes is associated with intra-island diversification at a very small spatial scale in a songbird lineage.* [Molecular Ecology](#). Preprint on BioRxiv.
- [27] **Bourgeois Y.X.C.**, Boissinot S. (2019). *Selection at behavioural, developmental and metabolic genes is associated with the northward expansion of a successful tropical colonizer.* [Molecular Ecology](#).
- [26] **Bourgeois Y.X.C.**, Boissinot S. (2019). *On the population dynamics of junk: a review on the population genomics of transposable elements.* [Genes](#).
- [25] **Bourgeois Y.X.C.**, Ruggiero R.P., Manthey J., Boissinot S. (2019). *Recent secondary contacts, linked selection and variable recombination rates shape genomic diversity in the model species *Anolis carolinensis*.* [Genome Biology and Evolution](#).
- [24] Boissinot S., **Bourgeois Y.**, Manthey J.D., Ruggiero R. (2019). *The mobilome of reptiles: Evolution, Structure, Function.* [Cytogenetic and Genome Research](#).
- [23] **Bourgeois Y.X.C.**, Stritt C., Gordon S., Vogel J., Walser J-C., Roulin A. (2018). *Genome scan for selection highlights the impact of biotic and abiotic constraints in natural populations of a model grass, *Brachypodium distachyon*.* [The Plant Journal](#).
- [22] Roman I.*, **Bourgeois Y.***, Reyes-Velasco J., Jensen O.P., Waldman J., and Boissinot S. (2018). *Contrasted patterns of divergence and gene flow among five fish species in a mongolian rift lake following glaciation.* [Biological Journal of the Linnean Society](#).
- [21] Toenshoff E.R., Fields P.D., **Bourgeois Y.X.C.**, Ebert D. (2018). *The end of a 60-year riddle: Identification and genomic characterization of an iridovirus, the causative agent of White Fat Cell Disease in zoo plankton.* [G3: Genes|Genomes|Genetics](#).
- [20] Reyes-Velasco J., Manthey J.D., **Bourgeois Y.**, Freilich X., Boissinot S. (2018). *Revisiting the phylogeography, demography and taxonomy of the frog genus *Ptychadena* in the Ethiopian highlands with the use of genome-wide SNP data.* [PloS One](#).
- [19] Ruggiero R.P.*, **Bourgeois Y.X.C.***, Boissinot S. (2017). *LINE insertion polymorphisms are abundant but at low frequencies across populations of *Anolis carolinensis*.* [Frontiers in Genetics](#).
- [18] Delahaie B., Cornuault J., Masson C., Bertrand J.A.M., **Bourgeois Y.X.C.**, Milá B. & Thébaud C. (2017). *Narrow hybrid zones in spite of very low population differentiation in neutral markers in an island bird species complex.* [Journal of Evolutionary Biology](#).
- [17] **Bourgeois Y.X.C.**, Delahaie B., Gautier M., Lhuillier E., Malé P-J.G., Bertrand J.A.M., Cornuault J., Wakamatsu K., Bouchez O., Mould C., Bruxaux J., Holota H., Milá B., Thébaud C. (2017). *Previously undescribed locus on chromosome 1 underlies a melanic plumage polymorphism in a wild passerine bird.* [Royal Society Open Science](#).
- [16] Bento G., Routtu J., Fields P., **Bourgeois Y.X.C.**, Du Pasquier L., Ebert D. (2017). *A complex genetic polymorphism underlies resistance to a pathogen in a planktonic crustacean.* [PloS Genetics](#).

- [15] **Bourgeois Y.X.C.***, Roulin A.*, Müller K., Ebert D. (2017). *Parasitism drives host genome evolution: Insights from the *Pasteuria ramosa* - *Daphnia magna* system.* [Evolution](#).
- [14] Roulin A.C., **Bourgeois Y.X.C.**, Stiefel U., Walser J-C., Ebert D. (2016). *A photoreceptor underlies natural variation in *Daphnia magna* diapause induction.* [Molecular Biology and Evolution](#).
- [13] **Bourgeois Y.X.C.**, Bertrand J.A.M., Delahaie B., Cornuault J., Duval T., Milá B., Thébaud C. (2016). *Candidate gene analysis suggests untapped genetic complexity in melanin-based pigmentation in birds.* [Journal of Heredity](#).
- [12] Bertrand J.A.M.*, Delahaie B.*, **Bourgeois Y.X.C.**, Duval T., García-Jiménez R., Cornuault J., Pujol B., Thébaud C., Milá B. (2016). *The role of natural selection and historical factors in driving population differentiation along an elevational gradient in an island passerine bird.* [Journal of Evolutionary Biology](#).
- [11] **Bourgeois Y.X.C.***, Bertrand J.A.M.*, Thébaud C. (2016). *Point-count estimation of Réunion Grey White-eye population density for investigating a case of small spatial scale variation in a bird.* [The Ostrich](#).
- [10] Besnard G., Bertand J.A.M., Delahaie B., **Bourgeois Y.X.C.**, Lhuillier E., Thébaud C. (2016). *Valuing museum specimens: high-throughput DNA sequencing on historical collections of New Guinea crowned pigeons (Goura).* [Biological Journal of the Linnean Society](#).
- [9] Cornuault J., Delahaie B., Bertrand J.A.M., **Bourgeois Y.X.C.**, Milá B., Heeb P. & Thébaud C. (2015). *Morphological and plumage colour variation in the Réunion Grey White-eye (Aves: Zosterops borbonicus): assessing the role of selection.* [Biological Journal of the Linnean Society](#).
- [8] van de Crommenacker J., **Bourgeois Y.X.C.**, Warren B., Jackson H., Fleischer-Dogley F., Groombridge J., Bunbury N. (2015). *Using molecular tools to guide management of invasive alien species: assessing recent hybridization in an introduced bird population.* [Diversity and Distributions](#).
- [7] Casquet J., **Bourgeois Y.X.C.**, Cruaud C., Gavory F., Gillespie R.G., Thébaud C. (2015). *Community assembly on remote islands: a comparison of Hawaiian and Mascarene spiders.* [Journal of Biogeography](#).
- [6] Bertrand J.A.M., **Bourgeois Y.X.C.**, Delahaie B., Duval T., García-Jiménez R., Cornuault J., Heeb P., Milá B., Pujol B., Thébaud C. (2014). *Extremely reduced dispersal and gene flow in an island bird.* [Heredity](#).
- [5] **Bourgeois Y.X.C.**, Lhuillier E., Cézard T., Bertrand J.A.M., Delahaie B., Cornuault J., Duval T., Bouchez O., Milá B., Thébaud C. (2013). *Mass production of SNP markers in a non-model passerine bird through RAD sequencing and contig mapping to the zebra finch genome.* [Molecular Ecology Resources](#).
- [4] Cornuault J., Khimoun A., Harrigan R.J., **Bourgeois Y.X.C.**, Milá B., Thébaud C., Heeb P. (2013). *Role of ecology in the geographical separation of blood parasites infecting an insular bird.* [Journal of Biogeography](#).

- [3] **Bourgeois Y. X. C.**, Bertrand J.A.M., Thébaud C., Milá B. (2012). *Investigating the role of the Melanocortin-1 receptor gene in an extreme case of microgeographical variation in the pattern of melanin-based plumage pigmentation.* [PloS One](#).
- [2] Warren B.H., Bermingham E., **Bourgeois Y.**, Estep L.K., Prys-Jones R.P., Strasberg D., Thébaud C. (2012). *Hybridization and barriers to gene flow in an island bird radiation.* [Evolution](#).
- [1] Bertrand J. A. M., García-Jiménez R., **Bourgeois Y.**, Duval T., Heeb P., Thébaud C., Milá B. (2012) *Isolation and characterization of twelve polymorphic microsatellites loci for investigating an extreme case of microgeographical variation in an island bird (Zosterops borbonicus).* [Conservation Genetics Resources](#).

Preprints and articles in preparation

Bourgeois Y.X.C., Fields P., Bento G., Ebert D. *Balancing selection for pathogen resistance reveals an intercontinental signature of Red Queen coevolution.* In review in **Ecology Letters**.

Bourgeois Y.X.C., Hazzouri, K.M., Warren B.H. *Going down the rabbit hole: a review on methods for population genomics in natural populations.* Preprint on [BioRxiv](#).

Selection of oral contributions to conferences and seminars

Bourgeois Y., Boissinot S. (2018). Population genomics of a successful colonizer: linking molecular approaches to ecology in a squamate. Speciation meeting, IST Austria, Vienna.

Bourgeois Y., Stephane Boissinot. (2018). Population genomics of the green anole reveals evolutionary forces shaping diversity in a reptile. NYU Abu Dhabi Research Conference, United Arab Emirates.

Bourgeois Y., Fields P., Bento G., Roulin A., McTaggart S., Little T., Obbard D., Ebert D. (2015). Increased diversity at a locus involved in resistance to parasitism in *Daphnia magna*. ESEB 2015, Lausanne.

Bento G., Routtu J., **Bourgeois Y.**, Ebert D. (2015). Genetics of natural variation of *Daphnia magna* resistance to a bacterial pathogen. ESEB 2015, Lausanne.

Ebert D., Routtu J., Bento G., **Bourgeois Y.** (2014). Mapping of a parasite resistant locus in the *Daphnia magna* genome. EMBO Conference on the Mighty Daphnia: Past, Present and Future. Birmingham.

Bourgeois Y.X.C. SNPs characterization by RAD-sequencing for studying color polymorphism in an island bird (2013). Journée d'échanges et de retours sur les développements technologiques de la plateforme génomique de Toulouse. Presentation at the Toulouse genomic platform.

Posters

Bourgeois Y.X.C., Boissinot S. (2019). Population genomics of transposable elements in the green anole. SMBE Manchester

- Bourgeois Y.X.C.**, Boissinot S., Manthey J., Ruggiero R., Reyes-Velasco J. (2018). Population genomics of green anole (*Anolis carolinensis*) reveals evolutionary forces shaping diversity in a reptile. Evolution Joint Congress Montpellier
- Bourgeois Y.X.C.**, Fields P., Bento G., Ebert D. (2017). Widespread balancing selection at a resistance locus in the water flea *Daphnia magna*. ESEB Groningen
- Milà B., **Bourgeois Y.**, Bertrand J., Cornuault J., Delahaie B., Thébaud C. (2015). Divergent selection and reduced dispersal drive phenotypic diversification at a very small spatial scale in an island bird. ESEB 2015, Lausanne.
- Bento G., Routtu J., **Bourgeois Y.X.C.**, Hall M., Kaberer N., Ebert D. (2014). Host - pathogen coevolution in the *Daphnia magna* - *Pasteuria ramosa* system. EMBO Conference on the Mighty Daphnia: Past, Present and Future. Birmingham.
- Milà B, **Bourgeois Y.X.C.**, Bertrand J.A.M., Delahaie B. & Thébaud C (2013). Inter- and intra-island speciation in a tropical passerine bird: inference from genetic, genomic and ecomorphological data. 4th Meeting of the Spanish Society for Evolutionary Biology (SESBE) - Barcelone, Spain.
- Bourgeois Y.X.C.**, Milà B., Thébaud C. (2013). RADseq phylogenomics reveal the recent diversification history of a polymorphic songbird (*Zosterops borbonicus*) on the island of Reunion. II Iberian Congress of Biological Systematics, Barcelona, Spain.
- Bourgeois Y.X.C.**, Bertrand J., Duval T., Warren B.H., Milà B., Thébaud C. (2012). Genetic mechanisms driving to melanic polymorphism in an island bird. Evolution Congress, Ottawa, Canada.
- Bertrand J.A.M., **Bourgeois Y.X.C.**, Duval T., García-Jiménez R., Cornuault J., Milà B., Thébaud C. (2012). Selection-constrained dispersal drives fine-scale genetic differentiation in an island bird (*Zosterops borbonicus*). Evolution Congress, Ottawa, Canada.