Thomas BRAZIER

37 years old

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One child
Civil partnership

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https://thomasbrazier.github.io

INTERESTS

Population Genomics
Evolutionary Biology
Molecular Evolution

SKILLS

Population genomics

Statistics & Data Science

R, Python, Bash/Unix
Bioinformatics, Snakemake

French (native speaker)
English (written, spoken)

Driving license

ACADEMIC BACKGROUND

2022 – 2024. **Post-doc CNRS. ECOBIO UMR 6553**

2019 – 2022. **Ph.D. Recombination Landscapes and Genome Evolution in Angiosperms**
CNRS/Rennes 1 University
ECOBIO UMR 6553, EvoAdapt Team
(Genome Evolution and Adaptation)
Supervisor: Sylvain Glémin

2017 – 2019**. M.Sc. Biodiversity Ecology & Evolution**
Rennes 1 University – with honors
(top of the class)

2017**. B.Sc. Biology of Organisms**
Aix-Marseille University – with honors
(top of the class)

2015 – 2016. **B.Sc. Life Science**
Paris 6 University Pierre et Marie Curie / FOAD

2007 – 2010**. ENS Louis Lumière**
Cinema, Photography & Sound School
École Nationale Supérieure Louis Lumière – with honors

2004 – 2007**. Bachelor of Arts**
Paris X Nanterre University – with honors

2004**. High School Diploma**
Science – with honors

PROFESSIONAL BACKGROUND

2010-17. Grip/Key grip. Cinema and television

POST-DOC EXPERIENCE

2024-2026 (incoming, 24 months). Project: ERC EvolSV
Claire Mérot
Genomic Structural Variants and genetic diversity at a macro-scale:
How variable and how similar are structural diversity and
evolutionary patterns followed by SVs across the tree of life, and why?

2023-2024 (18 months). Project: ANR CisTransEvol
Sylvain Glémin, Thomas Lenormand et al.
Evolution of gene expression and the runaway process

PUBLICATIONS

Brazier T. & Glémin S., **2023.** Ubiquitous recombination gradients within plant genic regions shaped by recombination hotspots. BioRXiv. https://doi.org/10.1101/2023.12.12.571209

Brazier T. & Glémin S., **2022.** Diversity and determinants of recombination landscapes in flowering plants. PLoS Genetics. https://doi.org/10.1371/journal.pgen.1010141

Brazier T., Cherif E., Martin J.F., Gilles A., Blanchet S., Zhao Y., et al., **2022.** The influence of native populations' genetic history on the reconstruction of invasion routes: the case of a highly invasive aquatic species. Biol Invasions. https://link.springer.com/10.1007/s10530-022-02787-6

Foley N.M., Petit E.J., **Brazier T.**, Finarelli J.A., Hughes G.M. Touzalin F., Puechmaille S.J., Teeling E.C., **2020.** Drivers of longitudinal telomere dynamics in the long-lived bat species, *Myotis myotis*. Mol Ecol. https://doi.org/10.1111/mec.15395

IN PREPARATION

Brazier T. & Glémin S. Evolution of recombination rates under different mating systems in plants.

Siri Birkeland S., Gustafsson A.L.S., Gizaw A., Chala D., Fraccasetti M., **Brazier T.**, Schrøder-Nielsen A., Slotte T., Rieseberg L.H., Brysting A.K., Glemin S., Nowak M.D., Brochmann C. What drives the rapid buildup of sterility barriers in the Arctic crucifer *Draba nivalis*?

Brazier T., Zarzoso-Lacoste D., Lehnen L., Jan P.-L., Puechmaille S.J., Petit E.J. The geometry of gametic dispersal in a flying mammal, *Rhinolophus hipposideros.*

COMMUNICATIONS (PRESENTING)

2021. Evolution. Talk
2021. Post-Docs and Student Meiosis Conference. Talk
2022. Petit Pois Déridé. Poster
2022. Scientific Days of the Doctoral School. Poster
2023. Jacques Monod Conference. Sex unfolded. Poster
2024. PopGroup 57. Oral

REVIEW ACTIVITY

Reviewer for **eLife** (1 article) and **Journal of Evolutionary Biology** (1 article)

ACADEMIC INTERNSHIPS

2019. bachelor's degree (6 months), INRAE UMR DECOD.
Supervisor : Scott McCairns
Inferring invasion pathways and source population of the topmouth gudgeon (*Pseudorasbora parva*) in Europe with Machine Learning and ABC
(published in Biol. Invasions)

2018. bachelor's degree (4 months), INRAE UMR DECOD. Supervisor : Eric Petit
Limited male dispersal and mating system in lesser horseshoe bats (*Rhinolophus hipposideros*): estimates from parentage assignment (**article in preparation**)

TEACHING & SUPERVISION

2019 – 2022. Teaching assistant (3 years, 192 hours)
Practicals in bio-informatics & statistics (B.Sc. & M.Sc., 160 hours).
Practicals in Ecology (B.Sc., 20 hours).
Jury Member of Oral Defenses (M.Sc., 12 hours).

2023. Project Tutoring (2 students, 3 hours)
During one semester, I have been tutoring two Master students (M2) for a practical programming project which I designed and led (one hour per week effectively). They had to code quality controls and visualisation tools which will be integrated in our own SV calling pipeline.

2020. Co-supervisor of Léo Salema-Gabrelle, M.Sc. internship (M1)
Léo studied the evolution of recombination patterns and their genomic consequences in angiosperms.

2021. Co-supervisor of Elise Rolland, M.Sc. internship (M2)
Elise implemented a bioinformatic pipeline to estimate recombination landscapes at fine scale from population data.

2023. Co-supervisor of Lune Angevin, M.Sc. internship (M1)
Lune implemented a bioinformatic pipeline to detect and call genomic structural variants based on the Darwin Tree of Life data.

GRANTS

2022. ECOBIO Grant for a metagenomic study of micro-organisms communities in forest soil between ancient and recent forest lands (€ 5000). In this project I will develop skills for sampling forest soil, DNA extraction and sequencing micro-organisms.

2023. ECOBIO Grant. Funding for a 6 month M2 internship (2024). Recombination and GC gradients in plant genomes.

WORKSHOPS & COURSES

2019. Introduction to Wolfram Mathematica
2019. C++ programming. M.Sc. class (Rennes)
2020. GDR Ecostat. Statistics for ecology workshop (Rennes)
2021. Ethic & Integrity (MOOC FUN)
2021. CNRS Summer school. Detection and Annotation of Transposable Elements
2021. Biogenouest Platform. Introduction to Genome Assembly/Annotation with Galaxy
2021. Python programming (MOOC FUN)
2022. Docker (MOOC OpenClassrooms)
2022. Specialization Machine Learning (MOOC Coursera)
2023. Phylogenomic. CNRS Formation led by Stephan Guindon (Montpellier)

ADDITIONAL INFORMATION

Laboratory life

2020 – 2023. Elected member of the Doctoral School advisory board (Rennes)
2020 – 2022. Book club led by **Martin Lascoux** (Uppsala University)
2019 – now. Recurrent animator of the ECOBIO laboratory journal club
2021 – now. Volunteer for the Labo 1.5 initiative in the ECOBIO laboratory

Collaborations outside the laboratory

Adam Eyre-Walker (University of Sussex, UK). Adam Eyre-Walker is focused on the rate, pattern and effects of mutations. As the effect of recombination can mimic mutagenic effects and selection in favors of certain nucleotide bases, I began to discuss with him for paper based on my thesis. Besides, I am also involved with him in a project aiming to estimate effective population sizes based on patterns of linkage disequilibrium. As such, I am invited to give a seminar at his lab.

Laurent Duret & Nicolas Lartillot (LBBE, Lyon University). I am involved in the HotRec French ANR project, which is studying meiotic recombination in metazoans, while I'm studying in parallel recombination patterns in plants. I do recurrent meetings and travels at the LBBE.

Christian Brochmann (Oslo University). I was involved in the Speciation Clock project in Norway, for which I applied population genetics methods to study population structure and demography between populations of the Arctic crucifer *Draba nivalis.* (article in preparation)