CV of the researcher

Benjamin Guinet

PROFESSIONAL EXPERIENCE (post-PhD)

14/09/2023 – present

Postdoctoral Researcher. Centre for Palaeogenetics & Natural history museum, Stockholm. Supervised by Dr Tom van der Valk.
Main research: using ancient DNA from 4,000 to one million years old specimens to understand past microbial interaction in ancient extinct megafauna (e.g., mammoths).

EDUCATION

01/10/2019 – 21/03/2023 (Award date)

PhD in evolutionary genomics. Department of COEVOL Multi-Scale Coevolution (LBBE), University Claude Bernard Lyon1 (UCBL1), France. Supervisor: Dr Julien Varaldi. Thesis: " Global study of viral domestication in parasitoid wasps". Funded by doctoral scholarship from the French Ministry of Sciences.

Winner of the PhD thesis award in fundamental virology science (Bruxelles - 2024).

2017 – 2019 (Award date)

MSc in Biology (Ecology, Evolution, Genomics). University Claude Bernard Lyon1 (UCBL1), France.

2017 (first semester of third year bachelor)

Erasmus exchange. University of Tromsø, Norway.

2014-2017

BSc in Biology (Science and Biodiversity).University Claude Bernard Lyon1 (UCBL1), France.

MANUSCRIPTS IN PEER-REVIEWED JOURNALS

- 2024 | **Exploring five centuries of inbreeding, isolation, health and conflict in Las Gobas: A Northern Medieval Iberian Necropolis**
  Statue: Published in Science Advances
  Ricardo Rodríguez-Varela, Reyhan Yaka, Zoé Pochon, Iban Sanchez-Pinto, José Luis Solaun,Thijessen Naidoo, Benjamin Guinet, Patxi Pérez-Ramallo, Vendela Kempe Lagerholm,Violeta de Anca Prado, Cristina Valdiosera, Maja Krzewinska, Lourdes Herrasti,Agustín Azkarate, Anders Götherström. Doi : 10.1126/sciadv.adp8625

- 2024 | **A novel and diverse family of filamentous DNA viruses associated with parasitic wasps**
  Statue: Published in Virus Evolution (2024)
  Benjamin Guinet, Matthieu Leobold, Elisabeth A. Herniou, Pierrick Bloin, Nelly Burlet, Justin Bredlau, Vincent Navratil, Marc Ravallec, Rustem Uzbekov, Karen Kester, Dawn Gundersen Rindal, Jean-Michel Drezen, Julien Varaldi, Annie Bézier.
  Doi : 10.1093/ve/veae022

- 2023 | **Endo-parasitoid lifestyle promotes domestication of dsDNA viruses**
  Statue: Published in eLife (2023)
  Benjamin Guinet, David Lepetit, Sylvain Charlat, Peter N Buhl, David G Notton, Astrid Cruaud, Jean- Yves Rasplus, Julia Stigenberg, Damien M de Vienne, Bastien Boussau, Julien Varaldi. Doi : 10.7554/eLife.85993

- 2021 | **A Behavior-Manipulating Virus Relative as a Source of Adaptive Genes for Drosophila Parasitoids**
  Statue: Published in MBE
  Deborah Di Giovanni, David Lepetit, Benjamin Guinet, Bastien Bennetot, Matthieu Boulesteix, Yohann Couté, Olivier Bouchez, Marc Ravallec, Julien Varaldi.
  Doi : 10.1093/molbev/msaa030

MANUSCRIPTS IN PREPARATION

- **Late Pleistocene Mammoth calf herpesvirus infection**
  Status: Submission soon to Current Biology
  Benjamin Guinet, Nikolay Oskolkov, Love Dalén, Tom van der Valk.

- **A million-year transect of microbes recovered from mammoth remains**
  Status: Submission soon to Science
  Benjamin Guinet, Nikolay Oskolkov, Love Dalén, Tom van der Valk.

- **Environmental instability promote reticulated and hybrid speciation, evidence from an Indo-Pacific species complex (Aves: Pachychephala)** Status: In writing process
  Martin Irestedt, Ingo A Müller, Filip Thörn, Leo Joseph, Benjamin Guinet, Tom van der Valk, Knud Andreas Jønsson.

- **Dating the origin of a viral domestication event in parasitoid wasps attacking Diptera**
  Status: In review in Proc Biol Sci
  Benjamin Guinet, Jonathan Vogel, Ralph Peters, Jan Hrcek, Matthew L. Buffington, Julien Varaldi. Biorxiv : Doi : 10.1101/2024.05.24.595704

SELECTED PRESENTATIONS IN INTERNATIONAL CONFERENCES

- 2024 | (talk) A comprehensive investigation of Woolly mammoth remains associated with microbes, **Hologenomics Conference**, Copenhagen, Danmark.
- 2024 | (poster) A comprehensive investigation of Woolly mammoth remains associated with microbes. Society for Molecular Biology and Evolution Conference (**SMBE**), Puerto Vallarta, Mexico.
- 2022 | (talk) Exploring the parasitoid diversity for virus domestication, Society for Evolutionary Biology (**ESEB**), Prague, Czech-republic.
- 2022 | (talk) Timing of a viral domestication event in a clade of parasitic wasps, Congress of the International Society of Symbiosis **(ISS)/Holobiont**, Lyon, France.
- 2021 | (talk) Endogenization of dsDNA viruses as a widespread source of adaptation in endoparasitoid species, **Environmental and Agronomical Genomics Symposium**, Tours, France.

COORDINATED COLLABORATIONS

- 2024 - now | Project : Metagenomic on mammoth remains
  Laboratories : *Centre for paleogenetics (**Sweden**),* SciLifeLab (**Sweden**) **Principal researchers :** *Pr. Love Dálen, Dr Nikolay* Oskolkov. **Output:** Work under review in **X**.
- 2023 - 2024 | Project : Datation of a viral domestication in Diptera parasitoids
  Laboratories : *Bonn Museum (**Germany**),* Institute of Entomology (**Czech Republic**), USDA-ARS (**USA**) **Principal researchers :** *Dr. Ralph Peters, Dr Jan Hrcek, Matthew L. Buffington* **Output:** Work under review in **Proceedings of the Royal Society B**.
- 2022 - 2023 | Project : Description of a novel dsDNA viral family
  Laboratory : Insect Biology Research Institute (**France**)
  Principal researchers : Dr. Elisabeth Herniou and Jean-Michel Drezen
  Output: Work published in **Virus Evolution** and under review in the *International Committee on Taxonomy of Viruses* (**ICTV**).
- 2020 - 2023 | Project : Assessing viral domestication in parasitoid wasps
  Laboratories : NMCC (**United Kingdom**), Zoological Museum (**Denmark**), INRAE (**France**), Swedish National History Museum (**Sweden**), *LBBE (**France**),*
  Principal researchers : Dr. Peter N Buhl, Dr. David G Notton, Dr. Jean-Yves Rasplus, Dr. Julia Stigenberg, Dr. Damien M de Vienne, Dr. Bastien Boussau. Dr. Varaldi.
  Output: Work published in **Elife.**

ADDITIONAL QUALIFICATIONS

- **Bioinformatics skills** in programming (R, Bash, Python), high performance and cloud computing, data workflows and self contained environments.
- **Dating of viral phylogenies** using BEAST, MrBayes and RevBayes.
- **Characterization of new viruses** including their genomic, ecology and structures (establishment of a new dsDNA viral family).
- **Molecular laboratory skills** on NGS modern DNA including DNA extraction, PCR and long read Nanopore sequencing.
- **Languages:** French (mother tongue), English (proficient), Spanish (B2 level).
- **Community service:** Reviewed 2 papers (Virus Evolution and Journal of invertebrate pathology)

AWARD AND FELLOWSHIP

- 2024 | **PhD thesis award in fundamental virology science** (Bruxelles).
- 2024 | Travel fellowship to assist in the French Virology day in 2024.

TEACHING AND MENTORING ACTIVITIES

- 2019-2023 | **Teaching assistant (192 hours total),** Department of Biometry, Lyon1 University. Course: General genetics (first year bachelor program), Population genetics, Biostatistics and Bioinformatics (second year bachelor program).
- 2019 | **Co-mentoring** of a MSc student during her internship.

PUBLIC ENGAGEMENT

- 2022 | **Participation in the “Declics" program** (As part of the Declics initiative, I was able to participate in a 3-hour session at the Albert Camus high school in Rilleux-la-Pape. The main objective was to answer questions from students about our scientific background and work).
- 2019-now | **Member of the Pangolin project** (the Pangolin Project, launched in October 2017, is a science outreach initiative for all ages, focused on promoting biodiversity conservation.)

RECENT COURSES

- 2023 | Ethics in research (Lyon1)
- 2022 | Bayesian inference for biology (Lyon1)

PARTICIPATION IN SCIENTIFIC SOCIETIES

- 2024 | French Society of Virology. Member.
- 2023-now | European Society of Evolutionary Biology (ESEB). Member.

MEDIA PUBLICATIONS

- 2022 | **POP Science online journal : https://popsciences.universite-lyon.fr/ressources/retracer-lhistoire-des-contes-de-fees-a-laide-de-la-biologie-evolutive/**
- 2020 | **PhD work presentation in the BarCamp initiative: https://www.youtube.com/watch?v=TQgC46l9z3w**
- 2020 | **National Scientific Research Center (CNRS) : (https://www.cnrs.fr/en/node/4473)**

POPULARIZING SCIENCE ARTICLES

- 2022 | **Scientific publishing: system description and history:** https://www.projetpangolin.com/le-systeme-de-publication-scientifique/
- 2021 | **Sexual selection, from sexy dancing to cheating: anything goes!: https://www.projetpangolin.com/la-selection-sexuelle/**
- 2021 | **Parasitoid wasps between science fiction, domestication and viruses!: https://www.projetpangolin.com/les-guepes-parasitoides-domestications-virus/**
- 2020 | **The tales that lull us to sleep in our childhood and trace our history: https://www.projetpangolin.com/les-contes-bercent-notre-enfance-et-retracent-notre-histoire/**
- 2020 | **Natural selection : https://www.projetpangolin.com/selection-naturelle-mecanismes-exemples-concrets/**

WORKSHOPS DEVELOPED FOR SCHOOLS AND HIGH SCHOOLS

Link of the workshops : https://www.projetpangolin.com/nos-ateliers/

- **Write the city of tomorrow (High school - last year) -** Students are divided into teams and work together (using objective, clearly sourced maps) to build the environmentally-friendly, sustainable and ethical city of tomorrow. This game enables them to create a society aligned with their vision of the world, and in which they would have their own place.
- **Be the change (High school - first year) -** This session, which has been tested on several thousand high school students, puts humans back into the heart of ecosystems. By verbalizing the emotions that teenagers experience in the Anthropocene, they take the first step towards the awareness that will inspire them to take action.
- **The cashew nut trial (High school - first year) -** In this workshop, high school students take on the role of litigators. They build an argument to win their client's case, using cards presenting real, non-oriented information.
- **One session for elementary school -** Constructed in four stages (two manual workshops and two interactive workshops with playmobil), the "petits pas" session accompanies children aged 6 to 10 in their ecological awakening. The central objective is to understand the relationships that exist between the different species evolving in the same ecosystem, and the impact of humans (positive or negative) within these dynamics.

OTHER ACHIEVEMENTS

- 2022 | Declics Ambassador
- 2021 | Qualified for the French University Kickboxing Championships
- 2020 | Finisher Lyon Urban Trail