

Academic positions

Tenured research scientist (CNRS "Chargé de Recherche")

Institut Pasteur, Department of Genetics and Genomics
CNRS UMR3525, Genetics of Genomes

Paris, France

2025–present

Post-doctoral researcher

Institut Pasteur, Department of Genetics and Genomics
Institut de Biologie de l'École Normale Supérieure
Post-doc advisors: Pr. Romain Koszul, Dr. Alice Meunier

Paris, France

2020–2025

Visiting researcher

UCLA, Department of Biological Chemistry
Mentor: Pr. Kathrin Plath

Los Angeles, USA

2014–2015

Education

PhD in Genomics

University of Cambridge
PhD supervisor: Pr. Julie Ahringer

Cambridge, UK

2016–2020

Diploma of the École Normale Supérieure

École Normale Supérieure de Cachan

Paris, France

2016

MSc in Genetics and Development Biology

École Normale Supérieure de Cachan & Magistère Européen de Génétique

Cachan, France

2016

BSc in Biology and Health

École Normale Supérieure de Cachan & Université Orsay Paris-Sud

Cachan, France

2013

Other scientific appointments

Elected member of the Technical Advisory Board, Bioconductor consortium

- Contribute to strategic decisions and technical leadership for advancing bioinformatics research.
- Spearhead initiatives promoting open-source tool development within the consortium.

2024–2027

Certified Carpentries Instructor, the Carpentries organization

- Lead workshops to teach foundational programming, data science and bioinformatics to researchers.

2024–present

Package reviewer, Bioconductor consortium

- Review emerging tools, fostering innovation across the Bioconductor ecosystem.
- Ensure quality and adherence to coding standards for bioinformatics packages.

2024–present

Member of the Tidyomics working group, international

- Develop and promote tidy principles for multi-omics data analysis.
- Promote collaborations to enhance reproducibility and data integration practices.

2024–present

Reviewer for scientific journals

- Bioinformatics, BMC Bioinformatics

2024–present

Scholarships and awards

Visiting researcher grant (€10,000), Pasteur Technology Training Program

Short stay in the lab of Dr. Stefano Mangiola (Adelaide, AU) to contribute to the development of innovative AI tools dedicated to single-cell and spatial multi-omics data analysis.

2025

Travelling grant

Gordon Research Conference Chromosome Dynamics

2023

1st place (€2,400), Hackathon Digital 4 Genomics

Predicting physical interactions between nuclear parasites and host chromosomes

2022

Post-doctoral research fellowship (3 years fully funded)

Association pour la Recherche sur le Cancer

2021

Student fellowship (£56,976)

Medical Research Council Doctoral Training Grant

2016

Student fellowship (€63,168)

École Normale Supérieure Paris-Saclay

2012

Scientific contributions

Peer-reviewed publications

1. **Meneu, Chapard, Serizay**, Westbrook, Routhier, Ruault, et al. Sequence-dependent activity and compartmentalization of foreign DNA in a eukaryotic nucleus. **Science** 2025.
2. **Singh, Serizay, Couble**, Cabahug, Rosa, Chen, et al. High-resolution map of the *Plasmodium falciparum* genome reveals MORC/ApiAP2-mediated links between distant, functionally related genes. **Nature Microbiology** 2025.
3. Bignaud, Conti, Thierry, **Serizay**, Labadie, Poulain, et al. Phages with a broad host range are common across ecosystems. **Nature Microbiology** 2025.
4. **Serizay**, Khoury Damaa, Boudjema, Balagué, Faucourt, Delgehyr, et al. Cyclin switch tailors a cell cycle variant to orchestrate multiciliogenesis. **Cell Reports** 2025.
5. Khoury Damaa, **Serizay**, Balagué, Boudjema, Faucourt, Delgehyr, et al. Cyclin O controls entry into the cell-cycle variant required for multiciliated cell differentiation. **Cell Reports** 2025.
6. **Serizay**, and Koszul Epigenomics coverage data extraction and aggregation in R with tidyCoverage. **Bioinformatics** 2024.
7. Hutchison, Keyes, Crowell, **Serizay**, Soneson, Davis, et al. The tidyomics ecosystem: enhancing omic data analyses. **Nature Methods** 2024.
8. **Serizay**, Matthey-Doret, Bignaud, Baudry, and Koszul Orchestrating chromosome conformation capture analysis with Bioconductor. **Nature Communications** 2024.
9. **Serizay**, and Ahringer periodicDNA: an R/Bioconductor package to investigate k-mer periodicity in DNA. **F1000Research** 2021.
10. **Serizay**, and Ahringer Generating fragment density plots in R/Bioconductor with VplotR. **Journal of Open Source Software** 2021.
11. Pandya-Jones, Markaki, **Serizay**, Chitiashvili, Mancía Leon, Damianov, et al. A protein assembly mediates Xist localization and gene silencing. **Nature** 2020.
12. **Serizay**, Dong, Jänes, Chesney, Cerrato, and Ahringer Distinctive regulatory architectures of germline-active and somatic genes in *C. elegans*. **Genome Research** 2020.
13. Athie, Marchese, González, Lozano, Raimondi, Juvvuna, et al. Analysis of copy number alterations reveals the lncRNA ALAL-1 as a regulator of lung cancer immune evasion. **Journal of Cell Biology** 2020.
14. **Serizay**, and Ahringer Genome organization at different scales: nature, formation and function. **Current Opinion in Cell Biology** 2018.
15. Jänes, Dong, **Schoof, Serizay**, Appert, Cerrato, et al. Chromatin accessibility dynamics across *C. elegans* development and ageing. **eLife** 2018.

Preprints

16. **Serizay** & Koszul, Multi-modal data integration for machine learning applications
17. **Thomas, Serizay**, Mani, Couvet, Papon, Tamalet, et al., FOXJ1 transcriptional targets in human airway cells and multiciliogenesis in FOXJ1-associated primary ciliary dyskinesia
18. Perrot, **Serizay**, Koszul, 3D genome architecture as the foundation for synthetic chromosome engineering: from principles to AI-Guided design
19. Boudjema, Balagué, Jewett, **Serizay**, LoMastro, Mercey, et al., The MCC variant of the cell cycle incorporates two centriole biogenesis cycles
20. Borman, Benedetti, Muluh, Raulo, Valderrama, Sannikov, et al., Orchestrating Microbiome Analysis with Bioconductor

Scientific conferences and symposiums

2025	Invited	Keynote talk at the European Bioconductor Conference 2025, ES
	Selected	Poster at EMBO Workshop: EvoChromo: Evolutionary approaches to research in chromatin,
2024	Invited	Talk at JOBIM Symposium: Open Days in Biology, Informatics and Mathematics, FR
	Invited	Talk at Physics meets Biology Symposium, FR
	Selected	Talk at the 9 th Gordon Conference on Chromosome Structure and Function, US
	Selected	Talk at the 3R Conference (Replication, Repair, Recombination), FR
	Selected	Talk at the 20 th Bioconductor, US
2023	Invited	Talk at Qbio Symposium, FR
	Organizer	Workshop at the European Bioconductor Conference, BE
	Selected	Talk at the 19 th Bioconductor, US
	Selected	Talk at the 9 th Gordon Conference Chromosome Dynamics, IT
2022	Selected	Talk at the 5 th EMBO European Cilia Conference, GE
	Selected	Poster at the EMBO Workshop: Cell Cycle: one engine-many cycles, GE
2021	Invited	Talk at the 2 nd annual Qlife conference, FR
2020	Selected	Talk at the CSHL Conference Systems Biology: Global Regulation of Gene Expression, US
2019	Selected	Talk at the International <i>C. elegans</i> Conference, US
2017	Selected	Talk at the International <i>C. elegans</i> Conference, US

Open-source software development

<i>momics</i>	Store and manipulate multi-omics data	js2264/momics
<i>metator</i>	Bin metagenomic contigs based on proximity ligation data	js2264/metator
<i>tidyCoverage</i>	Extract and aggregate genomic track signals	js2264/tidyCoverage
<i>HiCExperiment</i>	Data structure for Hi-C in R	js2264/HiCExperiment
<i>HiContacts</i>	In-depth Hi-C investigation in R	js2264/HiContacts
<i>plyinteractions</i>	Genomic grammar for genomic interactions	js2264/plyinteractions
<i>tidyomics</i>	Open project to create tidy analysis packages for omics data	tidyomics
<i>OHCA</i>	Orchestrating Hi-C analysis with Bioconductor	js2264/OHCA
<i>BiocBook</i>	Write, containerize and publish versioned technical monographs	js2264/BiocBook
<i>periodicDNA</i>	K-mers periodicity at small and large scale	js2264/periodicDNA
<i>RegAtlas</i>	Tissue-specific regulatory atlas in <i>C. elegans</i>	js2264/RegAtlas

Educational activities

Workshop: Developing R/Bioconductor packages for Genomics (Physalia Courses)	2023–present
Workshop: RNA-seq analysis with Bioconductor (Carpentries)	2025
Workshop: Single cell RNA-seq analysis with R/Bioconductor (Physalia Courses)	2022–present
Workshop: NGS analysis for gene regulation and epigenomics (Physalia Courses)	2021–present
Workshop: Introduction to Multi-omics Data Integration and Visualisation (EBI, UK)	2021
Teaching: 1A Biology of the Cells (University of Cambridge)	2018

Student supervision

Corina Pascal	<i>PhD</i>	–	2024– present
Manon Perrot	<i>PhD</i>	–	2023– present
Ghislaine Sonagnon	<i>Master</i>	n.d.	2025
Emilie Doan	<i>Master</i>	n.d.	2024
Lea Meneu	<i>PhD</i>	Then hired at Syntato (UK)	2022–2024
Michella Khoury Damaa	<i>PhD</i>	Then Junior post-doc at Institut de Biologie de l'ENS (FR)	2021–2024
Thomas Brochier	<i>Master</i>	Then PhD at Max Planck Institute MPI-CBG (GE)	2018
Ruxandra Tesloianu	<i>Master</i>	Then PhD at Sanger Institute (UK)	2017