

# Jacques Serizay

Chargé de Recherche Classe Normale, CNRS

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## 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

### 1<sup>st</sup> 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)

Ecole 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, Mancia 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	<b>Invited</b>	Keynote talk at the European Bioconductor Conference 2025, ES
	Selected	Poster at EMBO Workshop: EvoChromo: Evolutionary approaches to research in chromatin,
2024	<b>Invited</b>	Talk at JOBIM Symposium: Open Days in Biology, Informatics and Mathematics, FR
	<b>Invited</b>	Talk at Physics meets Biology Symposium, FR
	Selected	Talk at the 9 <sup>th</sup> Gordon Conference on Chromosome Structure and Function, US
	Selected	Talk at the 3R Conference (Replication, Repair, Recombination), FR
	Selected	Talk at the 20 <sup>th</sup> Bioconductor, US
2023	<b>Invited</b>	Talk at Qbio Symposium, FR
	Organizer	Workshop at the European Bioconductor Conference, BE
	Selected	Talk at the 19 <sup>th</sup> Bioconductor, US
	Selected	Talk at the 9 <sup>th</sup> Gordon Conference Chromosome Dynamics, IT
2022	Selected	Talk at the 5 <sup>th</sup> EMBO European Cilia Conference, GE
	Selected	Poster at the EMBO Workshop: Cell Cycle: one engine-many cycles, GE
2021	<b>Invited</b>	Talk at the 2 <sup>nd</sup> 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

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

## 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