Jacques Serizay

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Academic positions

Tenured research scientist (CNRS "Chargé de Recherche") — *Paris, France* — *2025–present*
Institut Pasteur, Department of Genetics and Genomics
CNRS UMR3525, Genetics of Genomes

Post-doctoral researcher — *Paris, France* — *2020–2025*
Institut Pasteur, Department of Genetics and Genomics
Institut de Biologie de l'École Normale Supérieure
Post-doc advisors: Pr. Romain Koszul, Dr. Alice Meunier

Visiting researcher — *Los Angeles, USA* — *2014–2015*
UCLA, Department of Biological Chemistry
Mentor: Pr. Kathrin Plath

Education

PhD in Genomics — *Cambridge, UK* — *2016–2020*
University of Cambridge
PhD supervisor: Pr. Julie Ahringer

Diploma of the École Normale Supérieure — *Paris, France* — *2016*
École Normale Supérieure de Cachan

MSc in Genetics and Development Biology — *Cachan, France* — *2016*
École Normale Supérieure de Cachan & Magistère Européen de Génétique

BSc in Biology and Health — *Cachan, France* — *2013*
École Normale Supérieure de Cachan & Université Orsay Paris-Sud

Other scientific appointments

Elected member of the Technical Advisory Board, Bioconductor consortium — *2024–2027*
· Contribute to strategic decisions and technical leadership for advancing bioinformatics research.
· Spearhead initiatives promoting open-source tool development within the consortium.

Certified Carpentries Instructor, the Carpentries organization — *2024–present*
· Lead workshops to teach foundational programming, data science and bioinformatics to researchers.

Package reviewer, Bioconductor consortium — *2024–present*
· Review emerging tools, fostering innovation across the Bioconductor ecosystem.
· Ensure quality and adherence to coding standards for bioinformatics packages.

Member of the Tidyomics working group, international — *2024–present*
· Develop and promote tidy principles for multi-omics data analysis.
· Promote collaborations to enhance reproducibility and data integration practices.

Reviewer for scientific journals — *2024–present*
· Bioinformatics, BMC Bioinformatics

Scholarships and awards

Visiting researcher grant (€10,000), Pasteur Technology Training Program — *2025*
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.

Travelling grant — *2023*
Gordon Research Conference Chromosome Dynamics

1st place (€2,400), Hackathon Digital 4 Genomics — *2022*
Predicting physical interactions between nuclear parasites and host chromosomes

Post-doctoral research fellowship (3 years fully funded) — *2021*
Association pour la Recherche sur le Cancer

Student fellowship (£56,976) — *2016*
Medical Research Council Doctoral Training Grant

Student fellowship (€63,168) — *2012*
Ecole Normale Supérieure Paris-Saclay

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

2026	**Invited**	Department seminar at SaiGENCI, Adelaide, AU
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 9th Gordon Conference on Chromosome Structure and Function, US
	Selected	Talk at the 3R Conference (Replication, Repair, Recombination), FR
	Selected	Talk at the 20th Bioconductor, US
2023	**Invited**	Talk at Qbio Symposium, FR
	Organizer	Workshop at the European Bioconductor Conference, BE
	Selected	Talk at the 19th Bioconductor, US
	Selected	Talk at the 9th Gordon Conference Chromosome Dynamics, IT
2022	Selected	Talk at the 5th EMBO European Cilia Conference, GE
	Selected	Poster at the EMBO Workshop: Cell Cycle: one engine–many cycles, GE
2021	**Invited**	Talk at the 2nd 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 *C. elegans* Conference, US
2017	Selected	Talk at the International *C. elegans* Conference, US

Open-source software development

momics	Store and manipulate multi-omics data	*js2264/momics*
metator	Bin metagenomic contigs based on proximity ligation data	*js2264/metator*
tidyCoverage	Extract and aggregate genomic track signals	*js2264/tidyCoverage*
HiCExperiment	Data structure for Hi-C in R	*js2264/HiCExperiment*
HiContacts	In-depth Hi-C investigation in R	*js2264/HiContacts*
plyinteractions	Genomic grammar for genomic interactions	*js2264/plyinteractions*
tidyomics	Open project to create tidy analysis packages for omics data	*tidyomics*
OHCA	Orchestrating Hi-C analysis with Bioconductor	*js2264/OHCA*
BiocBook	Write, containerize and publish versioned technical monographs	*js2264/BiocBook*
periodicDNA	K-mers periodicity at small and large scale	*js2264/periodicDNA*
RegAtlas	Tissue-specific regulatory atlas in C. elegans	*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	*PhD*	–	*2024– present*
Manon Perrot	*PhD*	–	*2023– present*
Ghislaine Sonagnon	*Master*	n.d.	*2025*
Emilie Doan	*Master*	n.d.	*2024*
Lea Meneu	*PhD*	Then hired at Syntato (UK)	*2022–2024*
Michella Khoury Damaa	*PhD*	Then Junior post-doc at Institut de Biologie de l'ENS (FR)	*2021–2024*
Thomas Brochier	*Master*	Then PhD at Max Planck Institute MPI-CBG (GE)	*2018*
Ruxandra Tesloianu	*Master*	Then PhD at Sanger Institute (UK)	*2017*