

# Julien Devilliers

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**Citizenship:** French

## Research interests

I am an entomologist/evolutionary biologist, interested in the evolution of sensory system and communication in insects. My work combines phylogenomics, comparative transcriptomics, single-cell RNA-sequencing, whole genome sequencing, microscopy and behaviour. I mainly use mosquitoes and butterflies as study models. Current research interests include circadian rhythm tuning of the sensory system and polarised light vision.

## Professional experience

**Postdoctoral Associate, Virginia Tech** (Blacksburg, VA, USA) 03/2025 – Present

*Topic:* Single-cell RNA-seq and circadian integration of temperature in mosquitoes.

*Supervisor:* Dr. Clément Vianuger.

**Research Technician, University of Leicester** (Leicester, UK) 11/2024 – 03/2025

*Topic:* Genome assembly and transcriptomics analysis of sexual dimorphism in mosquitoes.

*Supervisor:* Dr. Roberto Feuda.

## Education

**PhD, University of Leicester** (Leicester, UK) 09/2021 – 01/2025

*Thesis:* Molecular characterisation and evolution of the sensory system in mosquitoes

*Supervisors:* Dr. Roberto Feuda, Prof. Ezio Rosato, Prof. Charalambos Kyriacou, Dr. Ben Warren.

**MSc, Muséum National d'Histoire Naturelle** (Paris, France) 09/2019 – 08/2021

*Topics:* Biology, Ecology and Evolution, specialised in Systematic, Evolution and Paleontology.

*Thesis:* Co-evolution of vision and blue iridescence in the blue *Morpho* butterfly genus.

*Supervisors:* Dr. Violaine Llaurens, Dr. Vincent Debat.

**BSc, Université Jean-Monnet** (Saint-Étienne, France) 09/2017 – 08/2019

*Topics:* Biology of organisms and populations.

*Thesis:* Phylogeny of *Perispherus* genus (Blaberidae, Perisphaerinae).

*Supervisors:* Dr. Frédéric Legendre (Muséum National d'Histoire Naturelle, Paris, France)

**PACES (1st year of medicine), Université Jean-Monnet** (Saint-Étienne, France) 09/2015 – 08/2017

*Topics:* Medicine (outside *numerus clausus*).

## Funding

<b>Research culture support funds</b> (College of Life Sciences, University of Leicester, UK) <b>£600</b>	2023
<b>PhD studentship</b> (College of Life Sciences, University of Leicester, UK) <b>~£70,000</b>	2021

## Teaching experience

<b>Course Instructor, Department of Biochemistry</b> (Virginia Tech, USA)	Spring 2026
BCHM 4354: Biochemical Communication ( <i>Undergraduates</i> )	
Multidisciplinary investigation of odorant communication. Molecular biology, gene evolution, protein structure, statistical analysis, interpretation and critical scientific reading.	
<b>Lecture, College of Life Science</b> (University of Leicester, UK)	Summer 2024
Optional course: Introduction to <i>R</i> coding and visualisation ( <i>PhD students</i> )	
<b>Lecture, College of Life Science</b> (University of Leicester, UK)	Summer 2024
Optional course: First year statistics [adapted with Prof. Eamonn Mallon] ( <i>PhD students</i> )	
<b>Demonstration/marking, Department of Genetics</b> (University of Leicester, UK)	Spring 2024
BS1050: From Individuals to Populations – An Introduction to Genetics ( <i>Undergraduates</i> )	
Analysis of single nucleotide polymorphism in human populations mapping Sanger sequencing onto the human genome browser.	
<b>Demonstration, Department of Genetics</b> (University of Leicester, UK)	Spring 2022-2024
BS2009: Genomes ( <i>Undergraduates</i> )	
Wet lab demonstration with plasmid cloning and fruit fly phenotyping.	

## Supervision/Mentoring

### *PhD students:*

Meiers Dixon, rotation student (Virginia Tech, VA, USA)	08/2025 – 09/2025
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### *MSc students:*

Ruman Khalid, MSc student in biology (University of Leicester, Leicester, UK)	01/2024 – 07/2024
Harini Suresh, MSc student in biology (University of Leicester, Leicester, UK)	01/2023 – 07/2023

### *Undergraduate students:*

Anna Korennaia, Undergraduate in biochemistry (Virginia Tech, VA, USA)	08/2025 – Present
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## Talks and Posters

### *Talks:*

<b>Ento24</b> (Royal Entomological Society)	Liverpool, UK (2024)
Molecular evolution of vision: combining single-cell, bulk RNA-seq and microscopy to unravel the visual system in mosquitoes	
<b>3rd Joint Congress on Evolutionary Biology</b> (ESEB/ASN/SSB/SSE)	Montréal, Canada (2024)
Molecular evolution of vision in mosquitoes	

<b>Ento23</b> (Royal Entomological Society)	Penryn, UK (2023)
Anopheles gambiae, male vs. female: a single cell transcriptomic approach	
<b>Ento22</b> (Royal Entomological Society)	Lincoln, UK (2022)
Evolution of the sensory system in dipterans and the origin of hematophagy	

### *Posters:*

<b>SMBE23</b> (Society of Molecular Biology and Evolution)	Ferrara, Italy (2023)
Multiple emergences of hematophagy in Diptera: Is there a genetic background required for such behaviour?	
<b>EuroEvoDevo2022</b> (European Society for Evolutionary Developmental Biology)	Naples, Italy (2022)
Evolution of the sensory system in mosquitoes	

### *Other talks (Departmental visits):*

<b>Centre for Advance Study of Collective Behaviour</b>	16/05/2024
Invited by Dr. James Foster (University of Konstanz, Konstanz, Germany)	
<b>Vice-chancellor's visit Department of Genetics and Genomes Biology</b>	11/01/2024
Invited by Dr. Jacqui Shaw (Head of the Department, University of Leicester, Leicester, UK)	
<b>Évolution et Développement des Variations Phénotypiques (EDVP) team</b>	13/03/2023
Invited by Joséphine Ledamoisel (PhD student, Institut de Systématique, Évolution, Biodiversité, MNHN, Paris, France)	

## Outreach

<b>BugFest 2025</b> (Virginia Tech, USA)	18/10/2025
Mosquito larvae exhibition.	
<b>Kids Tech University 2025</b> (Virginia Tech, USA)	05/04/2025
Mosquito larvae exhibition.	
<b>AutumnFest 2023</b> (University of Leicester, UK)	15/08/2023
Exhibition bugs (mosquitoes [larvae and adults], bumblebees and wasps) to Alumni community.	
<b>Pint of Science 2023</b> (The Globe, Leicester, UK)	24/05/2023
Public talk on insect colour vision.	

## Professional services

<b>Post-Graduate Researchers representative</b>	25/09/2022 – 25/09/2024
Department of Genetics and Genome Biology, University of Leicester, UK	
<b>Post-Graduate Researchers week organisation committee</b>	06/2024
Organisation of two weeks training and activities to improve mental health and research culture (College of Life Sciences, University of Leicester, UK).	
<b>Neurogenetics group retreat organisation committee</b>	07/11/2023
Organisation of a group retreat (one week) in Chester (University of Leicester, UK)	

**Peer-Review:** PLOS One, PNAS, Animal Behavior, Acta Parasitologica.

## Publications

### *Original research articles:*

**Devilliers, J.**, Warren, B., Rosato, E., Kyriacou, C.P. & Feuda, R. (2025) Hematophagy Generates a Convergent Genomic Signature in Mosquitoes and Sandflies. *Genome Biology and Evolution*, 17, evaf044. doi: [10.1093/gbe/evaf044](https://doi.org/10.1093/gbe/evaf044)

**Devilliers, J.**, Marshall, H., Warren, B., Kyriacou, C.P., Araripe, L.O., Bruno, R.V., *et al.* (2024) Molecular correlates of swarming behaviour in *Aedes aegypti* males. *Biology Letters*, 20, 20240245. doi: [10.1098/rsbl.2024.0245](https://doi.org/10.1098/rsbl.2024.0245)

Zadra, N., Tatti, A., Silverj, A., Piccinno, R., **Devilliers, J.**, Lewis, C., *et al.* (2023) Shallow Whole-Genome Sequencing of *Aedes japonicus* and *Aedes koreicus* from Italy and an Updated Picture of Their Evolution Based on Mitogenomics and Barcoding. *Insects*, 14, 904. doi: [10.3390/insects14120904](https://doi.org/10.3390/insects14120904)

### *Book chapters:*

**Devilliers, J.**, Emili, E., Vanni, V., Solana, J., Feuda, R. (2025). An Optimized SPLiT-Seq Protocol for Insects. In: Bonizzoni, M., Ometto, L. (eds) *Insect Genomics*. Methods in Molecular Biology, 2935. Humana, New York, NY. doi: [10.1007/978-1-0716-4583-3\\_11](https://doi.org/10.1007/978-1-0716-4583-3_11)

### *Preprints - submitted manuscripts:*

Ledamoisel, J., Dang, A., **Devilliers, J.**, Marvillet, T., Lemoine, S., Lopez-Villavicencio, M., *et al.* (2025) Evolution of opsin genes in closely-related species of butterflies specialized in different microhabitats. *BioRxiv*. doi: [10.1101/2025.06.13.659549](https://doi.org/10.1101/2025.06.13.659549)

Goldman, O.V., DeFoe, A.E., Qi, Y., Jiao, Y., Weng, S.-C., Hourri-Zeevi, L., . . . , **Aedes aegypti Mosquito Cell Atlas Consortium**, *et al.* (2025) A single-nucleus transcriptomic atlas of the adult *Aedes aegypti* mosquito. *Cell*, Under revision. doi: [10.1101/2025.02.25.639765](https://doi.org/10.1101/2025.02.25.639765)