

# Quentin Geissmann

quentin.geissmann13@imperial.ac.uk

Date of Birth: 27<sup>th</sup> December 1986

Address: 38 Woodleigh gardens, SW16 2SY, London, UK

Nationality: French

Webpage: <https://quentin.geissmann.net>

## RESEARCH EXPERIENCE

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|-----------------------|---|
| 2014–2018             | <p><i>PhD student.</i> Department of Life Sciences, Imperial College London. <b>High-throughput Acquisition, Analysis and Alteration of Sleep in <i>Drosophila</i></b> (Dr. G. Gilestro).</p> <ul style="list-style-type: none"><li>• Statistical analysis and modelling of large time series</li><li>• Computer-aided design, 3d printing and electronics</li><li>• Machine learning applied to behaviour analysis</li></ul> |
| 2010–2013             | <p><i>Research technician.</i> Department of Animal and Plant Sciences, Sheffield University. <b>Stress, Resistance and Evolution of Bacteria Facing the Insect Immune System</b> (Prof. J. Rolff).</p> <ul style="list-style-type: none"><li>• Image processing, computer vision</li><li>• Experimental microbiology and flow cytometry</li><li>• Bioinformatics</li></ul>   |
| 2010<br>(six months)  | <p><i>Master's placement.</i> Global Health Institute, EPFL (Switzerland). <b>Molecular and Functional Characterisation of the Peptidoglycan Recognition Protein LC (PGRP-LC) in <i>Drosophila</i> immunity</b> (Dr. C. Neyen, Prof. B. Lemaitre).</p> <ul style="list-style-type: none"><li>• Confocal microscopy</li><li>• Experimental genetics</li><li>• Molecular biology</li></ul>                                      |
| 2009<br>(five months) | <p><i>Master's placement.</i> UMR 1272: Insect Physiology, Signalling and Communication, INRA Versailles. <b>Electrophysiological Study of Olfactory Receptor Neurones of Male <i>Spodoptera littoralis</i> in Response to a Female Pheromone</b> (Dr. P. Lucas, PI. S. Anton).</p> <ul style="list-style-type: none"><li>• Electrophysiological data analysis</li><li>• Single sensillum recording</li></ul>                 |

## EDUCATION

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|-----------|--|
| 2013–2014 | <p><i>MSc. Bioinformatics and Theoretical Systems Biology</i>, distinction. Imperial College, London.</p>  |
| 2008–2010 | <p><i>MSc. Integrative Biology and Physiology</i>, equivalent distinction. Specialist modules: “Molecular phylogenetics” and “Mathematical modelling in biology”. Université Pierre et Marie Curie, Paris.</p> |
| 2005–2008 | <p><i>BSc. Biology of Organisms</i>, equivalent first. Specialist modules: “Behavioural biology”, “Ecological interactions”. Université de Bourgogne, Dijon.</p>   |

## SCIENTIFIC COMPUTING AND PROGRAMMING<sup>1</sup>

In addition to my primary interest in biology, I have extensive experience in computer programming and have developed several scientific applications in various languages:

R	<i>Highly competent</i> : base functions, statistics, algebra, data visualisation and package development.
python	<i>Highly competent</i> : scientific computing, package development and web applications.
C/C++	<i>Highly competent</i> : OpenCV (image processing & machine learning), OpenMP and standard library.
System	<i>Highly competent</i> : GNU/Linux.
Web	<i>Competent</i> : javascript and HTML/CSS.

## TEACHING, SUPERVISION AND OUTREACH

2017–2018	<i>Statistics in R</i> to undergraduate students, teaching assistant, 12h/year.
2017	Public engagement at Imperial College festival: interactive presentation of ethomics, 2h.
2016–2017	Lecture seminar: “High-throughput analysis of sleep behaviour” for the Applied Biosciences and Biotechnology MSc, 2h/year.
2014–2017	<i>Python programming</i> for the Bioinformatics and Theoretical Systems Biology MSc, teaching assistant, 12h/year.
2014–2018	Supervision of masters and undergraduate students, on average three students per year.
2013	<i>Unix tools for biologists</i> , at Next Generation Sequencing workshop, Sheffield University, 3h.

## PUBLICATIONS<sup>2</sup>

2018	<b>Q. Geissmann</b> , L. García Rodríguez, E. J. Beckwith, G. F. Gilestro. Rethomics: an R framework to analyse high-throughput behavioural data. <i>bioRxiv preprint</i> .
2017	<b>Q. Geissmann</b> , L. García Rodríguez, E. J. Beckwith, A. S. French, A. R. Jamasb, and G. F. Gilestro. Ethoscopes: An open platform for high-throughput ethomics. <i>PLoS Biology</i> .
2017	E. J. Beckwith, <b>Q. Geissmann</b> , A. S. French, and G. F. Gilestro. Regulation of sleep homeostasis by sexual arousal. <i>eLife</i> .
2016	S. Fan*, <b>Q. Geissmann</b> *, E. Lakatos*, S. Lukauskas*, A. Ale, A. C. Babbie, P. D. W. Kirk, and M. P. H. Stumpf. MEANS: python package for Moment Expansion Approximation, inference and Simulation. <i>Bioinformatics</i> .
2014	L. Duvaux, <b>Q. Geissmann</b> , K. Gharbi, J.-J. Zhou, J. Ferrari, C. M. Smadja, and R. K. Butlin. Dynamics of Copy Number Variation in Host Races of the Pea Aphid. <i>Mol Biol Evol</i> .
2013	<b>Q. Geissmann</b> . OpenCFU, a New Free and Open-Source Software to Count Cell Colonies and Other Circular Objects. <i>PLoS ONE</i> .

## SIGNIFICANT POSTERS AND PRESENTATIONS

2018	Invited speaker: How much sleep does a fly <i>really</i> need? <i>Life Sciences Departmental Seminar, Imperial College London</i> .
2017	Poster: <b>Q. Geissmann</b> , L. García Rodríguez, E. J. Beckwith, and G. F. Gilestro. Is sleep deprivation really lethal to flies? <i>European Drosophila Research Conference, London</i> .
2017	Invited speaker: Is sleep deprivation really lethal to flies? <i>Champalimaud Centre for the Unknown, Lisboa</i> .
2017	Poster: <b>Q. Geissmann</b> , L. García Rodríguez, E. J. Beckwith, and G. F. Gilestro. Next generation activity monitoring sheds new light on <i>Drosophila</i> sleep. <i>UK clock club, Oxford</i> .
2015	Invited speaker: High throughput quantification of sleep in fruit fly. <i>MRC translational innovation mixers, London</i> .

<sup>1</sup>Most of my contributions are open-source and publicly available (see <http://github.com/qgeissmann>)

<sup>2</sup>Detailed list on my webpage (<https://quentin.geissmann.net#publications>)

\* Co-first authorship