

# Thomas Guillerme

Latest update: December 10, 2018

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GitHub: [TGuillerme](https://github.com/TGuillerme) — Google Scholar: [goo.gl/OP1XQG](https://scholar.google.com/citations?user=goo.gl/OP1XQG) — FigShare: [goo.gl/8fPU7k](https://figshare.com/profile/goo.gl/8fPU7k)

ORCID: [0000-0003-4325-1275](https://orcid.org/0000-0003-4325-1275) — ResearcherID: [G-9833-2014](https://www.researcherid.org/G-9833-2014)

## RESEARCH INTERESTS

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I'm interested in evolutionary biology at a large scale: the stories behind the history of life and the methodologies with which it is investigated. By combining classical methods such as descriptive palaeontology with modern bioinformatics tools and mathematical modeling, I work on understanding how to use morphology in evolutionary biology: from phylogenetic theory to macroevolution and macroecology.

## ACADEMIC CAREER

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- 2017 - Present: Postdoctoral Research Fellow in Vera Weisbecker's group  
School of Biological Sciences  
University of Queensland, St Lucia, Australia
- 2016 - 2017: Research Associate in Martin Brazeau's group  
Faculty of Natural Sciences, Department of Life Sciences  
Silwood Park Campus, Imperial College London, UK

## EDUCATION

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- 2012 - 2015: PhD in Zoology, Trinity College Dublin  
*Macroevolution with living and fossil species*  
Awarded as it stands.  
<http://dx.doi.org/10.6084/m9.figshare.1583337>
- 2010 - 2012: MSc in Palaeontology (honours), Université de Montpellier  
2<sup>nd</sup> year project: *Molecular clocks and evolutionary rates among primates: a palaeontological and genomic approach.*  
1<sup>st</sup> year project: *Southern France Upper Cretaceous Theropod teeth variability.*
- 2007 - 2010: BSc in Biology, Université de Montpellier

## PUBLICATIONS

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Peer reviewed - [Google Scholar profile: Thomas Guillerme](https://scholar.google.com/citations?user=goo.gl/OP1XQG)

- 2018: **Guillerme T.** dispRity: a modular R package for measuring disparity.  
*Methods in Ecology and Evolution*, DOI: [10.1111/2041-210X.13022](https://doi.org/10.1111/2041-210X.13022)
- 2018: **Guillerme T** and Cooper N. Time for a rethink: sub-sampling methods in disparity-through-time analysis. *Palaeontology*, DOI: [10.1111/pala.12364](https://doi.org/10.1111/pala.12364)
- 2017: Healy K, **Guillerme T**, Kelly SBA, Inger R, Bearhop S, Jackson AL. SIDER: an R package for predicting trophic discrimination factors of consumers based on their ecology and phylogenetic relatedness. *Ecography*, DOI: [10.1111/ecog.03371](https://doi.org/10.1111/ecog.03371)
- 2017: Turvey SA, Crees JJ, Hansford J, Jeffree TE, Crumpton N, Kurniawan I, Setiyabudi E, **Guillerme T**, Paranggarimu U, Dosseto A, van den Bergh GD. Quaternary vertebrate faunas from Sumba, Indonesia: implications for Wallacean biogeography and evolution *Proceedings of the Royal Society B*, 284 20171278, DOI: [10.1098/rspb.2017.1278](https://doi.org/10.1098/rspb.2017.1278)

- 2016: Kane A, Healy K, **Guillaume T**, Ruxton G, and Jackson AL. A Recipe for Scavenging - the natural history of a behaviour. *Ecography*, 39:001011, DOI: [10.1111/ecog.02817](https://doi.org/10.1111/ecog.02817)
- 2016: **Guillaume T** and Cooper N. Assessment of available anatomical characters for linking living mammals to fossil taxa in phylogenetic analyses. *Biology Letters*, 12 20151003 DOI: [10.1098/rsbl.2015.1003](https://doi.org/10.1098/rsbl.2015.1003)
- 2016: **Guillaume T** and Cooper N. Effects of missing data on topological inference using a Total Evidence approach. *Molecular Phylogenetics and Evolution* 94:146158, DOI: [10.1016/j.ympev.2015.08.023](https://doi.org/10.1016/j.ympev.2015.08.023)
- 2014: Healy K, **Guillaume T**, Finlay S, Kane A, Kelly SBA, McClean D, Kelly DJ, Donohue I, Jackson AL and Cooper N. Ecology and mode-of-life explain lifespan variation in birds and mammals. *Proceedings of the Royal Society B*, 281(1784). DOI: [10.1098/rspb.2014.0298](https://doi.org/10.1098/rspb.2014.0298)

In review/in press - see my [publications](#) page.

## AWARDS AND GRANTS

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- 2017: Royal Society International Scientific Seminar Award (£5000)  
co-awarded with Prof. Phillip Donoghue FRS and Dr Natalie Cooper
- 2017: Marie Skłodowska-Curie Action [Seal of Excellence](#)
- 2014: BES Photo Competition Student Prize (Ecology and Society)
- 2012: Trinity Postgraduate Research Studentship (€46800)

## COMPUTER SKILLS

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- Coding: **R**\*, **C**\*, **C++**, **Bash**\*, **HTML**, **L<sup>A</sup>T<sub>E</sub>X**\*, **git**\*
- Phylogenetics: **PAUP**, **MrBayes**\*, **BEAST**\*, **RAxML**, **PhyloBayes**, **CoEvol**, **MACSE**, **MAFFT**, **SEAvi**, **Tracer**, **Mesquite**, **R{ape}**, **R{phytools}**, **R{diversitree}**, **R{MCMCglmm}**, **R{caper}**, ...
- Morphometrics: **R{geomorph}**, **MorphoJ**, **TPS**
- Graphics: **Adobe Illustrator**, **Adobe Photoshop**, **Gimp**, **Inkscape**

\* Skills taught at workshops or courses (see below)

### Developed software:

- R{mulTree}**: Performs MCMCglmm on multiple phylogenetic trees. *Role: main author.*  
GitHub page: [github.com/TGuillaume/mulTree](https://github.com/TGuillaume/mulTree)
- R{dispRity}**: Measuring disparity in R. *Role: main author.*  
GitHub page: [github.com/TGuillaume/dispRity](https://github.com/TGuillaume/dispRity)
- R{SIDER}**: Stable Isotope Discrimination Estimation in R. *Role: co-author.*  
GitHub page: [github.com/healyke/SIDER](https://github.com/healyke/SIDER)
- Morphy**: A C library for morphological characters phylogenetic analysis. *Role: co-author.*  
GitHub page: [www.morphyproject.org/](http://www.morphyproject.org/)

## PRESENTATIONS

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### Invited seminars

- 2018: *University of Bath seminar series* - University of Bath, UK  
Talk: New approaches for measuring disparity and testing disparity hypothesis: a journey through mammalian morphological evolution.
- 2017: *ISEM seminar series* - Université de Montpellier, France  
Talk: Disparate views on mammalian disparity at the K-Pg.
- 2017: *Silwood Social Seminars Series* - Imperial College London, UK  
Talk: Multidimensionality in morphology.
- 2016: *Palaeobiology Discussion Group* - University of Bristol, UK  
Talk: Do we still need morphological characters data?

## International Conferences

- 2018: *CPEG 2018* - Leeds, UK  
Talk: Timespines: does predator-prey arms race interaction drives morphological adaptation through time?
- 2018: *Evolution 2018* - Montpellier, France  
Talk: The Rise of the Age of Mammals? Total Evidence tip-dated trees and disparity models to assess the effect of the K-Pg extinction on mammalian evolution.  
Available here: <https://bit.ly/2PFPIJQ>
- 2018: *Australian Mammal Society 2018* - Brisbane, Australia  
Symposium presentation (**invited talk**): *Form, Function and Evolution of Australasian Mammals*  
A major step through (morpho)space a time? The effect of the K-Pg extinction on mammalian morphological evolution.
- 2018: *Reconciling disparate perspectives on the evolution of disparity* - Royal Society International Scientific Meeting - Chicheley Hall, UK - **Organiser**
- 2017: *BES Macro SIG meeting 2017* - London, UK  
**conference co-organiser**
- 2017: *Evolution 2017* - Portland OR, USA  
Talk: Blue tail, red tail: a solution to inapplicable data in phylogenetics  
Available here: [goo.gl/g68NTZ](http://goo.gl/g68NTZ)
- 2016: *BES Macro SIG meeting 2016* - Oxford, UK  
Talk: Moving away from the consensus in Phylogenetic Comparative Methods  
Available here: [goo.gl/1PsRfi](http://goo.gl/1PsRfi)
- 2016: *Evolution 2016* - Austin TX, USA  
*Palaeobiology/macroevolution session chair*  
Talk: New approaches to disparity-through-time analysis  
Available here: [goo.gl/nnSpVS](http://goo.gl/nnSpVS)
- 2015: *Systematics Association Biennial* - Oxford, UK  
Talk: Total evidence phylogenies, the data issue  
Available here: [goo.gl/MVwMTY](http://goo.gl/MVwMTY)
- 2014: *SVP annual meeting* - Berlin, Germany  
Symposium presentation (**invited talk**): *Putting fossils in trees*  
Talk: Total evidence phylogenies and missing data  
Available here: [goo.gl/CBqSVJ](http://goo.gl/CBqSVJ)
- 2014: *BES Macroecology SIG meeting* - University of Nottingham, UK  
Talk: Trees with fossil and living species: the data issue  
Available here: [goo.gl/Sdcxon](http://goo.gl/Sdcxon)
- 2014: *Evolution 2014* - Raleigh NC, USA  
Symposium presentation: *Ernst Mayr Symposium*  
Talk: Total evidence phylogenies: the missing data issue  
Available here: [goo.gl/oPfHZE](http://goo.gl/oPfHZE)
- 2014: *Challenges in Macroecology: Scaling the Time Barrier* - Natural History Museum London, UK  
Talk: Trees with fossil and living species: the missing data issue  
Available here: [goo.gl/c1RBER](http://goo.gl/c1RBER)
- 2013: *European Society for Evolutionary Biology Congress* - Lisbon, Portugal  
Poster: Combining fossils and molecular phylogenies  
Available here: [goo.gl/3HcRGH](http://goo.gl/3HcRGH)
- 2013: *11th International Mammalogical Congress* - Queen's University, Belfast, UK  
Poster: Combining fossils and molecular phylogenies  
Available here: [goo.gl/3HcRGH](http://goo.gl/3HcRGH)

## PROFESSIONAL SERVICE

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**Reviewing ([Publons profile](#)):** *American Naturalist*, *Biology Letters* ([Top reviewer for 2016](#)), *Methods in Ecology and Evolution*, *Molecular Phylogenetics and Evolution*, *Palaeontology*, *PLoS ONE*, *Proceedings of the Royal Society B: Biological Sciences*, *Scientific Reports*, *Systematic Biology*.

### Workshops:

- 2018: Repeatability workshop: Organize your research from the get-go! — **organiser**  
Australian Mammal Society Annual meeting - Brisbane, Australia
- 2014: Tip-Dating workshop — *helper*  
Nicholas Matzke & April Wright, SVP Annual meeting - Berlin, Germany
- 2014: Software Carpentry Bootcamp - R and UNIX — *helper*  
Devasena Inupakutika & Aur Saraf - Nottingham, UK

### Conferences:

- 2018: *Reconciling disparate perspectives on the evolution of disparity* - Royal Society  
International Scientific Meeting - Chicheley Hall, UK — **organiser**
- 2017: *BES Macro SIG meeting 2017* - London, UK — *co-organiser*

### Academic memberships:

- 2018-present: Member of the Australian Mammal Society
- 2017-present: Member of the Society for the Study of Evolution
- 2015-present: Member of the Systematic Association
- 2014-present: Member of the Society of Vertebrate Palaeontology
- 2013-present: Member of Society of Systematic Biologists
- 2013-present: British Ecological Society (BES) including Macroecology Special Interest Group

**Departmental services:** 2018-present: UQ Bioinformatics coding and debates co-organiser.

- 2018-present: UQ Biology Postdocs monthly meetings co-organiser.
- 2016-2017: Silwood [Ecology and Evolution Seminar Series](#) organiser  
[Biweekly Silwood Park Campus computer workshops](#) organiser (L<sup>A</sup>T<sub>E</sub>X, version control, webpages, R packages, etc.)
- 2013-2015: Trinity Zoology Postgraduate student social committee chair

## TEACHING

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### Academia

All my teaching material is available on the following [GitHub page](#).

- 2017: MSc students: C for biologists  
*Co-teacher*, 30 hours, Imperial College - UK
- 2017: MSc students: Phylogenetic Comparative Methods  
*Teaching assistant*, 6 hours, Natural History Museum - UK
- 2017: MSc students: morphometrics  
*Co-teacher*, 6 hours, Natural History Museum - UK
- 2016: MSc students: Rocks 'n' clocks (including a MrBayes practical)  
*Teacher*, 6 hours, Imperial College London - UK
- 2014: MSc students: Timing Evolution  
*Teacher*, 6 hours, Trinity College Dublin - IE
- 2014: Software Carpentry Bootcamp - R and UNIX  
*Helper*, full day, University of Nottingham - UK
- 2013-14: 2<sup>nd</sup> year MSc students: Statistics with R  
*Teaching assistant*, full semester, Trinity College Dublin - IE
- 2013-14: 4<sup>th</sup> year undergraduate students: Evolution  
*Teaching assistant*, full semester, Trinity College Dublin - IE
- 2012-13: 4<sup>th</sup> year undergraduate students: Statistics with R  
*Teaching assistant*, full semester, Trinity College Dublin - IE
- 2012-13: 1<sup>st</sup> year undergraduate students: Introduction to Biodiversity Evolution and the Environment  
*Teaching assistant*, full semester, Trinity College Dublin - IE

## Student supervision

- 2017: Joe Craig (Imperial College London - MSc project) *How does adding data change node age estimation in morphological phylogenies?*
- 2017: Danielle Moraviec & Hayley Swalund (Imperial College London - MSc mini projects)
- 2016: Victoria Stanley Tsui (Imperial College London - MSc) *A preliminary study on the suture morphology of skull roofs in early gnathostomes and their ancestors.* - Co-supervised with Martin Brazeau.
- 2016: Asiem Sanyal (Imperial College London - MSc mini project)
- 2014-2015: Luke Hannon (Trinity College Dublin -4<sup>th</sup> year project) *Orbit size and nocturnality in living and fossil primates.* - Co-supervised with Natalie Cooper.
- 2013-2014: Maura Judge (Trinity College Dublin -4<sup>th</sup> year project) *Bite force and diet in mammals.* - Co-supervised with Natalie Cooper.

## FIELDWORK AND DATA COLLECTION

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|----------|--|-------|--|
| 2013-14: | Museum data collection: Smithsonian Institute Natural History Museum (Washington DC), American Museum of Natural History (New York), Museum of Comparative Zoology (Cambridge, MA), Muséum National d'Histoire Naturelle (Paris) |       |  |
| 2011-12: | Excavations in Cruzy, France<br>Southern France, Continental Cretaceous  | 2011: | Excavations in Krasiejów, Poland<br>Southern Poland, Continental Trias |
| 2009-10: | Excavations in Espéraza, France - Site fore-person<br>Southern France, Continental Cretaceous  |       |  |

## PUBLIC ENGAGEMENT AND OUTREACH

- Regular contributor to [EcoEvo@TCD](#) blog; rated [best Irish Science and Technology blog \(2014\)](#) and [Bronze Award Irish Blog \(2015\)](#).
- Complete list available here: [goo.gl/MAq9oA](http://goo.gl/MAq9oA)
- Featured posts: [How do lego cars evolve?](#); [If you please – draw me a dino...](#); [The more the better?](#).
- [Threes video](#) (*early stage* thesis project explained in three minutes – winner of the NERD club theses award 2013).

## Outreach Events

- 2015 & 2014 & 2013: Trinity College Dublin Zoology Department, Researcher's night – *participant*  
 2014: 1<sup>st</sup> Soapbox Science Ireland – *helper*  
 2014: "What can we learn from skeletons", comparative anatomy practical – *Co-organiser*  
 2013: Trinity College Zoology Museum guided tours – *tour guide*  
 2010: Introduction to palaeontological excavations, Musée des Dinosaures (FR) – *animator*