Dr Jacques A. Deere

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Qualifications

Oct 2012 – Jan 2016	*D.Phil Zoology - University of Oxford* Thesis title: The role of dispersal in life history and population dynamics: an experimental and theoretical approach
April 2002 – Dec 2005	*Master of Science Zoology (Cum Laude) - Stellenbosch University* Thesis title: Acclimation effects on thermal tolerance in ameronothrid mites at sub – Antarctic Marion Island
Feb 1998 – March 2002	*Bachelor of Science (Honours) Zoology - University of Pretoria* Dissertation title: Inter-sexual differences in Black Rhinoceros (*Diceros bicornis*) diet quality, as indicated by twig dimensions in dung

Career History

Dec 2020 – present	Postdoctoral Researcher in the Institute for Biodiversity and Ecosystem Dynamics (IBED) at the University of Amsterdam. Investigating predator-prey dynamics for use in biological control of pest species. *Prof Arne Janssen (P.I.).*
Aug 2019 – Nov 2020	Postdoctoral Researcher at the University of Oxford. Investigating how stochastic environments impact life history strategies. *Dr Rob Salguero-Gómez; Associate professor (P.I.).*
Oct 2018 – Jan 2019	Guest Researcher in the Institute for Biodiversity and Ecosystem Dynamics (IBED) at the University of Amsterdam. Investigating the role of dispersal in eco-evolutionary dynamics.
July 2015 – Sept 2018	Postdoctoral Researcher in the Institute for Biodiversity and Ecosystem Dynamics (IBED) at the University of Amsterdam. Investigating, through theory and experimentation, the role of dispersal in eco-evolutionary dynamics. *Dr Isabel Smallegange (P.I.).*
Jan 2013 – June 2015	D.Phil student at the University of Oxford. Experimentally investigating the population dynamics of the bulb mite, specifically focusing on the role of dispersal. Model building and analysis using the R package. *Prof. Tim Coulson (supervisor); Dr Isabel Smallegange, Assistant professor, Institute for Biodiversity and Ecosystem Dynamics, University of Amsterdam (co-supervisor)*.
July 2010 – Dec 2012	Laboratory Technician at Imperial College London. Position involved assisting in the planning and performing of behavioural, population and selection experiments in the bulb mite. Additional duties included maintaining the stock cultures and lab consumables. *Prof. Tim Coulson, Division of Biology (line manager).*
Dec 2007 – June 2010	Research Coordinator for the NERC Centre for Population Biology at Imperial College London. Position involved managing and supporting research projects; financial management of approx. £1m per annum; liaising with research sponsors; coordinating the production of reports for research sponsors, including project reports and CPB annual reports and coordinating the workshop series. *Prof. Georgina Mace (line manager).*

July 2004 – Dec 2006	Research Coordinator for the USAID/NRF Capacity Building Programme for Climate Change Research. Position involved logistical coordination, student coordination, budget management (of approx. R1,000,000.00 over 2 ½ years), report preparations and scientific duties (data collection and publications). *Prof. Steven L. Chown, Director, DST-NRF Centre of Excellence for Invasion Biology, Stellenbosch University (line manager).*
Dec 2003- Feb 2004	Expedition to Kerguelen Island. Logistic duties: Sourcing and packaging of consumables and equipment to and from Reunion Island (departure and arrival point for Kerguelen). Scientific duties: Data collection and field assistance to collaborating international scientists. *Prof. Steven L. Chown, Department of Zoology, University of Stellenbosch (supervisor).*
April 2002- May 2003	Collecting field data for MSc thesis on Marion Island. Was a member of the over-wintering team which involved collecting mite species from the field and running various physiological experiments in the laboratory. *Prof. Steven L. Chown, Department of Zoology, Stellenbosch University (supervisor).*

Funding

*Single PI; **Lead PI; **Funded: £4,115**

2019	**Techne Funding *(University of Surrey) (Workshop)*	£1,000
2014	*British Ecological Society *(Travel grant)*	£500
2014	*Lincoln College *(University of Oxford) (Graduate research grant)*	£415
2013	*Evolutionary Demography Society *(Travel grant)*	£200
2000	University of Pretoria achievement bursary	£2,000

Awards

2004	Best student oral presentation - Annual Research Meeting, Department of Botany and Zoology, Stellenbosch University

Research Supervision and Mentoring

Current supervision:

PhD. – Alexandra Sierra Monroy (2023 - , University of Amsterdam) (Co-supervisor with Dr. Arne Janssen).

Past supervision:

M.Sc. project – Ilona van den Berg (Completed 2017, Vrije Universiteit Amsterdam).

M.Sc. project – Tomos Potter (Completed 2016, University of Amsterdam).

B.Sc. (3rd yr. project) – Bas Odor (Completed 2023, University of Amsterdam).

B.Sc. (Hons.) – Keafon Jumbam (Completed 2005, University of Transkei) (Co-supervisor with Dr. Michael Somers).

B.Sc. (3rd yr. project) – Zilva van Rossum (Completed 2021, University of Amsterdam).

B.Sc. (3rd yr. project) – Penelope Holland (Completed 2021, University of Oxford).

B.Sc. (3rd yr. project) – Clarice Xu (Completed 2021, University of Oxford).

Mentoring:

4 MSc (Stellenbosch University); 4 BSc (University of Oxford); 2 High School students (The Cherwell School; Magdalen College School)

Lecturing

Lecturer – Food Security, Sustainability & Biodiversity; MSc course; Royal Holloway, Univ. of London (2023 -).
Lecturer – Behaviour & Evolution; BSc course; Univ. of Amsterdam (2016 - 2018).
Lecturer – Empirical Cycles; MSc course; Univ. of Amsterdam (2018).
Assistant – BSc course; Univ. of Amsterdam (2021, 2022, 2023)
Assistant – BSc course; Univ. of Oxford (2020).
Assistant – Doctoral Training programme; Univ. of Oxford (2019).
Assistant – BSc course; Univ. of Oxford (2013, 2014).
Assistant – MSc course; Imperial College London (2011).

Academic services

2022 to present	*PhD and PostDoc council (IBED, University of Amsterdam)*
2021 to 2022	*Guest editor, Frontiers in Ecology and Evolution Special Feature: "Integrating models into practice: The role of modelling in biocontrol and integrated pest management"*
2021	*Recommender for PCI Zoology*
2019	*Hiring committee for Biological Sciences undergraduate admissions, Pembroke College, University of Oxford*
2017 to 2019	*Guest editor, British Ecological Society cross-journal Special Feature: "The diversity of eco-evolutionary dynamics: comparing the feedbacks between ecology and evolution across scales"*
2015 to 2018	*PhD and PostDoc council (IBED, University of Amsterdam)*

Invited Talks

2017 Symposium. EVENET dispersal symposium, Ghent (Belgium)
2017 Seminar. Department of Biology, Ghent University (Belgium) (all costs paid)

Peer Reviewing

Scientific Journals:

– Proceedings of the Royal Society B
– Journal of Animal Ecology
– Oikos
– Oecologia
– Population Ecology
– Journal of Insect Science
– Experimental and Applied Acarology
– African Journal of Ecology

Funding Agencies:

– LE STUDIUM Smart Loire Valley Programme (France)
– Swiss National Science Foundation

Organised workshops/symposium

2019 Working group co-organiser: Global linkages between plant metabolism, functioning and life history; University of Oxford, Oxford, UK.

2019 Workshop co-organiser: Academic ecosystems; University of Surrey, Guildford, UK.

2017 Symposium co-organiser: Eco-evolutionary dynamics; European Society of Evolutionary Biology (ESEB), Groningen, The Netherlands.

Memberships & committees

2017 to present	*Dutch Society of Theoretical Biology (NVTB)*
2016 to present	*European Society for Evolutionary Biology (ESEB)*
2014 to present	*Ecological Society of America (ESA)*
2013 to present	*British Ecological Society (BES)*

Selected Conference Presentations

Deere, J.A., van Rossum, Z., van Rijn, P. & Janssen, A. (2023). Application of alternative food can constrain biological pest control. European Conference of Entomology.

Deere, J.A., Aboobaker, A. & Salguero-Gómez, R. (2020). Do the benefits of calorie restriction extend to fluctuating environments? British Ecological Society annual meeting **(*virtual*)**.

Deere, J.A., Aboobaker, A. & Salguero-Gómez, R. (2020). The hunger games as the key to happily ever after? Evolutionary Demography Society annual meeting (physical and virtual), Røros, Norway **(*virtual*)**.

Deere, J.A., van den Berg, I., Roth, G. & Smallegange, I.M. (2017). The effects of distinct dispersal life-histories on population processes. Ecology Across Borders Joint Annual Meeting, Ghent, Belgium.

Deere, J.A. & Smallegange, I.M. (2017). Unsuccessful dispersal affects life history characteristics of natal populations. Dutch Society of Theoretical Biology (NVTB) Annual Meeting, Schoorl, The Netherlands.

Deere, J.A., Coulson, T., Cubaynes, S. & Smallegange, I.M. (2014). Demographic costs of dispersal using the bulb mite (*Rhizoglyphus robini*) as a study system. Netherlands Annual Ecology Meeting, Lunteren, The Netherlands **(*Invited*)**

Deere, J.A., Coulson, T., Cubaynes, S. & Smallegange, I.M. (2013). Modelling the cost of dispersal on the population dynamics of the bulb mite (*Rhizoglyphus robini*). 1st Evolutionary Demography Society annual meeting, Odense, Denmark.

Deere, J.A., Chown, S.L. & Marshall, D.J. (2005). Testing the Beneficial Acclimation Hypothesis. ZSSA Conference, Grahamstown, South Africa.

Deere, J.A., Chown, S.L. & Marshall, D.J. (2003). Acclimation effects on thermal tolerance in ameronothrid mites at Marion Island. Joint Conference of SASAQS and ZSSA, Cape Town, South Africa.

Outreach and media coverage

Open Days:

2016. Institute for Biodiversity and Ecosystem Dynamics, University of Amsterdam
2011. Department of Life Sciences, Imperial College London
2004-2006. Department of Zoology, Stellenbosch University

Public Talks:

2005. Sub-Antarctic Marion Island: Past and current research. Department of Ecology and Resource Management, University of Venda for Science and Technology

2004. Sub-Antarctic Marion Island: Past and current research. School of Botany and Zoology, University of KwaZulu Natal (Howard College and Pietermaritzburg Campus)

Media coverage:

Stewart et al. (2018) highlighted in UvA press release, Phys.Org, Aurus, among others

Publication List

- The median impact factor of the peer-reviewed journals that I have published in is 3.63, which is 20% higher than the median IF in the field of Ecology and Evolutionary Biology.
- Total number of citations: 1125; h-index: 10 (Google citations – December 2023).
- RG score on ResearchGate: 20.3 (higher than 72.5% of members).
- ORCID ID 0000-0001-6736-2223; Google Scholar

Peer-reviewed publications: #student mentee, §equal contribution

1. **Deere, J.A.** & §Smallegange, I.M. (Accepted). Individual differences in developmental trajectory leave a male polyphenic signature in bulb mite populations. *Peer Community Journal.* bioRxiv.org – doi.org/10.1101/2023.02.06.527265

2. **Deere, J.A.**, Janssen, A., Furlong, M.J. A. & Bonsall, M.B. 2023. Editorial: Integrating models into practice – the role of modelling in biocontrol and integrated pest management. *Frontiers in Ecology and Evolution*, 11:1243260. doi.org/10.3389/fevo.2023.1243260.

3. **Deere, J.A.**, #Xu, C., Adelmant, C., Aboobaker, A. & Salguero-Gómez, R. 2023. The hunger games as the key to happily ever after? *Journals of Gerontology: Series A*, glad100. doi.org/10.1093/gerona/glad100.

4. Bernard, C., Silva Santos, G., **Deere, J.A.**, Rodriguez-Caro, R., Capdevila, P., Kusch, E., Gascoigne, S.J.L., Jackson, J. & Salguero-Gómez, R. 2023. MOSAIC: A Unified Trait Database to Complement Structured Population Models? *Scientific Data* 10, 335. doi.org/10.1038/s41597-023-02070-w.

5. Beretta, G.M., **Deere, J.A.**, Messelink, G.J., Muñoz-Cárdenas, K. & Janssen, A. 2022. Review: Predatory soil mites as biocontrol agents of above- and below-ground plant pests. *Experimental and Applied Acarology* 87, 143-162. doi.org/10.1007/s10493-022-00723-w.

6. **Deere, J.A.**, #van den Berg, I., Roth, G. & Smallegange, I.M. 2020. A modelling exercise to show why population models should incorporate distinct life histories of dispersers. *Population Ecology* 1-11. doi.org/10.1002/1438-390X.12074.

7. Brunner, F.S., **Deere, J.A.**, Egas, M., Eizaguirre, C. & Raeymaekers, J.A.M. 2019. The diversity of eco-evolutionary dynamics: comparing the feedbacks between ecology and evolution across scales. *Functional Ecology* 33, 7-12.

8. Stewart, K. A., Van den Beuken, T.P.G., Rhebergen, F.T., **Deere, J.A.** & Smallegange, I.M. 2018. Evidence for a third male type in a male-dimorphic model species. *Ecology* 99, 1685-1687. doi.org/10.1002/ecy.2239

9. **Deere, J.A.**, Coulson, T., Cubaynes, S. & Smallegange, I.M. 2017. Unsuccessful dispersal affects life history characteristics of natal populations: The role of dispersal related variation in vital rates. *Ecological Modelling* 366, 37-47.

10. **Deere, J.A.,** Coulson, T. & Smallegange, I.M. 2015. Life history consequences of the facultative expression of a dispersal life stage in the phoretic bulb mite (*Rhizoglyphus robini*). *PLoS One*. 10, e0136872.

11. Smallegange, I.M. & **Deere, J.A.** 2014. Eco-evolutionary interactions as a consequence of selection on a secondary sexual trait. In J. Moya-Laraño, J. Rowntree & G. Woodward (Eds.), Eco-Evolutionary Dynamics (*Advances in Ecological Research*, 50) (pp. 145-169). Boston: Elsevier/Academic Press

12. Smallegange, I.M., **Deere, J.A.** & Coulson, T. 2014. Correlative changes in life-history variables in response to environmental change in a model organism. *American Naturalist* 183, 784-797.

13. **Deere, J.A.** & Smallegange, I.M. 2014. Does frequency-dependence determine male morph survival in the bulb mite (*Rhizoglyphus robini*)? *Experimental and Applied Acarology* 62, 425-436.

14. Terblanche, J.S., Clusella-Trullas, S., **Deere, J.A.**, Van Vuuren, B.J. & Chown, S.L. 2009. Directional evolution of the slope of the metabolic rate-temperature relationship is correlated with climate. *Physiological and Biochemical Zoology* 82, 495-503.

15. Terblanche, J.S., Clusella-Trullas, S., **Deere, J.A.** & Chown, S.L. 2008. Thermal tolerance in a south-east African population of the tsetse fly *Glossina pallidipes* (Diptera, Glossinidae): Implications for forecasting climate change impacts. *Journal of Insect Physiology* 54, 114-127.

16. #Jumbam, K.R., Terblanche, J.S., **Deere, J.A.**, Somers, M.J. & Chown, S.L. 2008. Critical thermal limits and their responses to acclimation in two sub-Antarctic spiders: *Myro kerguelenensis* and *Prinerigone vagans*. *Polar Biology* 31, 215-220.

17. Terblanche, J.S., **Deere, J.A.**, Clusella-Trullas, S., Janion, C. & Chown, S.L. 2007. Critical thermal limits depend on methodological context. *Proceedings of the Royal Society B* 274, 2935-2942.

18. **Deere, J.A.** & Chown, S.L. 2006. Testing the beneficial acclimation hypothesis and its alternatives for locomotor performance. *American Naturalist* 168, 630-644.

19. **Deere, J.A.**, Marshall, D.J. & Chown, S.L. 2006. Phenotypic plasticity of thermal tolerances in five oribatid mite species from sub-Antarctic Marion Island. *Journal of Insect Physiology* 52, 693-700

Submitted

1. **Deere, J.A.**, #Holland, P., Aboobaker, A. & Salguero-Gómez, R. Calorie restriction brings no benefits to lifespan under stochastic environments. *Journal of Animal Ecology.* bioRxiv.org – doi.org/10.1101/2023.01.12.523873.

In preparation

1. #van Rossum, Z., **Deere, J.A.**, van Rijn, P. & Janssen, A. Too good to be truly effective: High quality alternative food can constrain biological pest control through predator satiation. *Functional Ecology*

2. Teodoro-Paulo, J., **Deere, J.A.**, Valeriano-Santos, J., Charlesworth, S., Duncan, A.B., Kant, M.R. & Alba, J.M. Rising temperatures favour a defence-supressing herbivore. *Global Change Biology*.

3. **Deere, J.A.**, Coulson, T. & Smallegange, I.M. Combined effects of coloured environmental noise and unsuccessful dispersal on stochastic growth rate of natal populations. *Oikos*

Non-peer reviewed publications:

Salguero-Gómez, R., Roper, M., Bernard, C. & **Deere, J.A.** 2021. Senescence. Oxford Bibliographies. doi.org/10.1093/OBO/9780199830060-0236

Other publications

PhD thesis – **Deere, J.A. 2016.** The role of dispersal in life history and population dynamics: an experimental and theoretical approach. University of Oxford, U.K. 242pp

Masters thesis – **Deere, J.A. 2005.** Acclimation effects on thermal tolerance in ameronothrid mites at sub-Antarctic Marion Island. University of Pretoria, South Africa. 161pp

Honours thesis – **Deere, J. A. 2001.** The use of black rhinoceros (*Diceros bicornis*) dung sampling to investigate sexual differences in diet quality and midden site selection in Pilanesberg National Park. Unpublished dissertation, University of Pretoria, South Africa.