Curriculum Vitae

Fiona Jane CLISSOLD

Postdoctoral Research Associate (Level B)

School of Biological Sciences, A08

The University of Sydney, NSW, 2006

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Nationality: Australian

Education

2004 **PhD** School of Biological Sciences, Monash University

Thesis 'Nutritional ecology of the Australian plague locust, *Chortoicetes terminifera'*

1988 **BSc** Monash University. Majors: Zoology and Biochemistry

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Professional Appointments

Full details given below in: 'Employment details.'

Academic

2011 – Lecturer, School of Biological Sciences

2011 Postdoctoral Research Associate, The University of Sydney. Funded by an Australian Laureate Fellowship to Professor Stephen J. Simpson; entitled 'Nutritional Dynamics: from Genes to Individuals to Ecosystems'

2010 – 2011 Postdoctoral Research Associate, The University of Sydney. Named postdoctoral fellow to ARC funded project: 'Heterarchical modelling of nutritional ecology: from individuals to communities'

2010 Consultant, 3rd Year Entomology, School of Biological Sciences, The University of Queensland

2009 December, Promoted to Level B

2005 –2009 Postdoctoral Fellow (Level A), The University of Sydney. Funded by ARC Federation Fellowship to Professor Stephen J. Simpson.

2003-2004 Lecturer to American graduate students undertaking a study unit in Australia – Evolution and diversity of Australian Fauna

1994 Biology Tutor Mannix College

1989 – 2004 Sessional Academic Monash University

Research/Technical

1989- 2005 Research Technical assistant, Monash University [varying appointments; 0.2-1.0]

Teaching and Mentoring

Full details given in 'Teaching and Mentoring Experience'

Honours/Postgraduate: PhD student (1), MSc students (2), BSc Honours students (10), Environmental Design and Data Analysis for Biologists.

Advanced student projects: 3rd Year students (16), 2nd year students (9).

3rd Year: Animal Physiology, Ecophysiology, Entomology, Plant-Animal Interactions, Research Methods.

2nd Year: Ecology, Entomology, Invertebrate Zoology, Zoology, Zoology: Animal diversity, Zoology: Animal form and function.

1st Year: Biology, What is Science? The Practice & Application of Science.

Professional experience

Referred papers

H Index = 13

PhD, MSc and Honours student work

Solicited Reviews and Special issues

Simpson, S. J., D. Raubenheimer, **F. J. Clissold**, M. Lihoreau, F. Ponton, S. Wilder; *Annual Review of Entomology*

Clissold, F. J., J. L. Sheehan, A. M. Saul, S. J. Simpson. Water as a nutrient in *Chortoicetes terminifera*: regulation of water, protein and carbohydrate. *Journal of Insect Physiology*: special issue.

Clissold, F. J., S. J. Simpson Nutrition and thermoregulation. *Journal of Thermal Biology*: special issue

Clissold, F. J., Silicon: the interactive effect of silicon and plant macronutrients on nutritional uptake. *Frontiers in Plant Science;* "Plant silicon interactions between organisms and the implications for ecosystems"

Submitted

Clissold, F. J., X. Clark, S. J. Simpson. Small changes big effects: simple solutions to solving the problem of assessing leaf quality for insect herbivores. Submitted *Functional Ecology*.

Clissold, F. J., X. Clark, T. Savage, S. J. Simpson. Rapid, accurate and low cost determination of silicon from microgram samples of plant material. In revision *Methods in ecology and evolution*.

Accepted

25 **Clissold, F. J.,** N. Coggan and S. J. Simpson. 2013. Herbivores use microclimate choice to alter host plant quality. **Journal of Experimental Biology** 216:2089-2096.

24 **Clissold, F. J**., Z. P. Brown, S. J. Simpson. 2013. Protein-induced weight increase of the gastrointestinal tract of locusts improves net nutrient uptake via larger meals rather than more efficient nutrient absorption. **Journal of Experimental Biology** 216:329-337

23 #Jensen, K. D. Mayntz, S. Toft, **F. J. Clissold**, D. Raubenheimer and S. J. Simpson. 2012. Optimal foraging for specific nutrients in predatory beetles. **Proceedings of the Royal Society B: Biological Sciences**. 279:2212-2218.

22 #Coggan, N., **F. J. Clissold***, and S. J. Simpson. 2011. Locusts use dynamic thermoregulatory behaviour to optimise nutritional outcomes. **Proceedings of the Royal Society B: Biological Sciences**. 278:2745-2752. [*corresponding author, and joint first author]

21 Onoda, Y., M. Westoby, P. B. Adler, A. M. F. Choong, **F. J. Clissold**, J. H. C. Cornelissen, S. Diaz, N. J. Dominy, A. Elgart, L. Enrico, P. V. A. Fine, J. J. Howard, A. Jalili, K. Kitajima, H. Kurokawa, C. McArthur, P. W. Lucas, L. Markesteijn, N. Perez-Harguindeguy, L. Poorter, L. Richards, L. S. Santiago, E. E. Sosinski, S. A. Van Bael, D. I. Warton, I. J. Wright, S. J. Wright, and N. Yamashita. 2011. Global patterns of leaf mechanical properties. **Ecology Letters** 14:301-312

20 Buhl, J. G. A. Sword, **F. J. Clissold**, S. J. Simpson. 2011. Group structure and in locust migratory bands. **Behavioral Ecology and Sociobiology** 65:265-273

19 Ballard, J. W. O, R. G. Melvin, M. Lazarou, **F. J. Clissold**, S. J. Simpson. 2010. Cost of a naturally occurring two-amino acid deletion in cytochrome c oxidase subunit 7A in *Drosophila simulans*. **The American Naturalist** 176, No. 4: E98-E108

18 **#Clissold, F. J**., B. J. Tedder, A. D. Conigrave, S. J. Simpson. 2010 The gastrointestinal tract as a nutrient balancing organ **Proceedings of the Royal Society B: Biological Sciences** 277: 1751-1759

17 #McArthur, C., O. S. Bradshaw, G. J. Jordan, **F. J. Clissold** and A. J. Pile. 2010. Wind affects morphology, function and chemistry of eucalypt seedlings with potential ecological consequences. **International Journal of Plant Sciences** 171:73-80

16 Simpson, S. J., D. Raubenheimer, M. A. Charleston, **F. J**. **Clissold** and the ARC-NZ Vegetation Function Network Herbivory Working Group. 2010. Modeling nutritional interactions: from individuals to communities. **Trends in Ecology and Evoluton** 25:53-60

15 **Clissold, F. J.**, G. D. Sanson, J. Read and S. J. Simpson. 2009. Gross versus net income – how plant toughness affects performance of an insect herbivore. **Ecology** 90: 3393-3405

14 #Miller, G, **F. J. Clissold**, D, Mayntz, S. J. Simpson. 2009. Speed over efficiency: Locusts select body temperatures that favour growth rate over efficient nutrient utilization. **Proceedings of the Royal Society B: Biological Sciences** 276:3581-3589.

13 Maklakov, A. A., M. D. Hall, S. J. Simpson, J. Dessmann, **F. J. Clissold**, F. Zajitschek, S. P. Lailvaux, D. Raubenheimer, R. Bonduriansky, and R. C. Brooks. 2009. Sex differences in nutrient-dependent reproductive ageing. **Aging Cell** 8:324-330.

12 #Gray, L. J., G. A. Sword, M. L. Anstey, **F. J. Clissold**, and S. J. Simpson. 2009. Behavioural phase polyphenism in the Australian plague locust (*Chortoicetes terminifera*). **Biology Letters** 5:306-309.

11 #Munn, A. J., **F. Clissold**, E. Tarszisz, K. Kimpton, C. R. Dickman, and I. D. Hume. 2009. Hindgut Plasticity in Wallabies Fed Hay either Unchopped or Ground and Pelleted: Fiber Is Not the Only Factor. **Physiological and Biochemical Zoology** 82:270-279.

10 Read, J., G. D. Sanson, E. Caldwell, **F. J. Clissold**, A. Chatain, P. Peeters, B. B. Lamont, M. De Garine-Wichatitsky, T. Jaffre, and S. Kerr. 2009. Correlations between leaf toughness and phenolics among species in contrasting environments of Australia and New Caledonia. **Annals of Botany** 103:757-767.

9 Lee, K. P., S. J. Simpson, **F. J. Clissold**, R. Brooks, J. W. O. Ballard, P. W. Taylor, N. Soran, and D. Raubenheimer. 2008. Lifespan and reproduction in Drosophila: New insights from nutritional geometry. **Proceedings of the National Academy of Sciences** 105:2498-2503.

8 Maklakov, A. A., S. J. Simpson, F. Zajitschek, M. D. Hall, J. Dessmann, **F. Clissold**, D. Raubenheimer, R. Bonduriansky, and R. C. Brooks. 2008. Sex-specific fitness effects of nutrient intake on reproduction and lifespan. **Current Biology** 18:1062-1066.

7 **Clissold, F. J**. 2007. The Biomechanics of Chewing and Plant Fracture: Mechanisms and Implications. **Advances in Insect Physiology** Volume 34:317-372.

6 **Clissold, F. J.**, G. D. Sanson, and J. Read. 2006. The paradoxical effects of nutrient ratios and supply rates on an outbreaking insect herbivore, the Australian plague locust. **Journal of Animal Ecology** 75:1000-1013.

5 #Gras, E. K., J. Read, C. T. Mach, G. D. Sanson, and **F. J. Clissold**. 2005. Herbivore damage, resource richness and putative defences in juvenile versus adult Eucalyptus leaves. **Australian Journal of Botany** 53:33-44.

4 **Clissold, F. J.,** G. D. Sanson, and J. Read. 2004. Indigestibility of plant cell wall by the Australian plague locust, *Chortoicetes terminifera*. **Entomologia Experimentalis et Applicata** 112:159-168.

3 Read, J., E. Gras, G. D. Sanson, **F. J. Clissold**, and C. Brunt. 2003. Does chemical defence decline more in developing leaves that become strong and tough at maturity? **Australian Journal of Botany** 51:489-496.

2 Sanson, G., J. Read, N. Aranwela, **F. J.Clissold**, and P. Peeters. 2001. Measurement of leaf biomechanical properties in studies of herbivory: Opportunties, problems and procedures. **Austral Ecology** 26:535-546.

1 **Clissold, F. J.**, K. S. Lefevere, and B. Roberts. 1993. Hormonal-control of ovarian development in the Australian sheep blowfly, *Lucilia cuprina*. Pest Control & Sustainable Agriculture 399-401.

In Preparation

Clissold, F. J. and S. J. Simpson. Temperature and leaf chemistry determines host plant choice. Science

Clissold, F. J. and S. J. Simpson. The ability to supply nutrients rather than metabolism is the key to understanding the influence of body mass on ecological interactions. Ecological monographs.

Clissold, F. J., J. Buhl, Z. Brown and S. J. Simpson. Nutrient state dependent movement in an insect herbivore. Current Biology

Clark, X, **F. J. Clissold,** M. A. Charleston and S. J. Simpson Foraging in a nutritionally complex world: tests using agent-based models and locusts. Animal Behaviour.

Grants and awards

Herman Slade Foundation: Joint CI with Dr Sebastian Holmes (University of Western Sydney) Rescuing from extinction the Australian River Snails, *Notopala sublineata hanleyi* (Murray River) and *Notopala sublineata sublineata* (Darling River) ($83,000). Submitted.

University of Sydney, funding for field work in Texas in conjunction with Dr Spence Behmer at Texas A&M ($10,000)

ARC-NZ Research Network for Vegetation Function, Registration and travel paid to attend ComBio2008 (Australian Society for Biochemistry & Molecular Biology, the Australian Society of Plant Scientists and the Australia and New Zealand Society for Cell and Developmental Biology), Canberra 21 – 25 September, 2008

Monash University Post graduate Conference Travel Award

School of Zoology (Monash University) Conference Travel Award

Ecological Society of Australia Field Trip Travel Award ($1500)

CWA Environmental Science Scholarship ($1500)

Summer Research Scholarship, Department of Zoology, Monash University

HECS exemption scholarship, undergraduate studies, merit based fee exemption (one of three scholarships available to undergraduate students studying zoology)

Invited seminars

2014 Invited speaker, Prof. John Hildebrand, University of Arizona, Tucson.

2014 SEB Manchester, Invited symposium speaker; 'What sets the limit? How thermal limits, performance and preference in ectotherms are influenced by water or energy balance'.

2013 Plant quality is more than just nutrients. Linking morphology, physiology and behaviour to ecological outcomes. Texas A&M University.

2013 Plant quality is more than just nutrients. Linking morphology, physiology and behaviour to ecological outcomes. University of Washington.

2012 Plant quality is more than just nutrients: Insect herbivores can choose microclimates to achieve nutritional homeostasis. International Congress Entomology, South Korea

2012 Plant quality is more than just nutrients. Linking morphology, physiology and behaviour to ecological outcomes. School of Biological Sciences, The University of Wollongong

2011 Plant quality: what does this mean to an insect herbivore? Australian Society for Biochemistry and Molecular Biology, Plant animal interactions Symposium 28.

2011 Plant quality: what does this mean to an insect herbivore? Arizona State University.

2010 The gastrointestinal tract as a nutrient balancing organ. The University of Sydney.

2009 Plant biomechanical properties and nutrition: implications for chewing herbivores. The University of Sydney

2008 Biomechanical properties of plants: implications for an herbivorous insect. Leaf toughness and biomechanics, ARC-NZ Vegetation Function Network Plant Biomechanics Working Group (WG38), Macquarie University

2007 Too much nitrogen: The paradoxical effects of nutrient ratios and supply rates on an outbreaking insect herbivore. Centre for the Integrative Study of Animal Behaviour, Macquarie University.

2005 Linking individual level phenomena to population dynamics. Pest or Guest: the zoology of the overabundance. Royal Zoological Society of NSW Forum, Taronga Zoo.

2004 Influence of diet anatomy, biomechanical properties and chemistry on Australian plague locust performance. Oral presentation and published abstract, XXII International Congress of Entomology, Brisbane.

Invited Guest – fully funded trips

2014 Professor John Hildebrande, University of Arizona, Centre for Insect Sciences

2011 Professor Jon Harrison, Arizona State University, School of Life Sciences

2007 Professor Tony Joern, Kansas State University, Division of Biology

2003 Professor Steve Simpson, Oxford University, Department of Zoology, (Oct-Dec)

Conference presentations

18 **Clissold, F. J,** Plant quality is more than just nutrients: Linking morphology, physiology and behaviour to nutritional outcomes. Gordon Conference, Plant-Herbivore Interaction, Ventura, CA, 2013. Poster presentation.

17 **Clissold, F. J**, S. J. Simpson. Plant quality is more than just nutrients: host plant choice is determined by temperature and nutrients. Society for Integrative and Comparative Biology, San Francisco, 2013. Symposium oral presentation and published abstract.

16 Clark, X, S. J. Simpson, **F. J**. **Clissold**. Does size matter? The interaction of body size, temperature and nutrition. Society for Integrative and Comparative Biology, San Francisco, 2013. Oral presentation and published abstract.

15 **Clissold, F. J**, Z. Brown, S. J. Simpson. Diet-induced enlargement of the gastrointestinal tract, increases nutrient absorption rates in locusts by allowing larger meals rather than better absorptive efficiency. Society for Integrative and Comparative Biology, San Francisco, 2013. Poster presentation and published abstract.

14 Clark, X., **F. J. Clissold**, M. A. Charleston, S. J. Simpson. Foraging in a nutritionally complex world: tests using agent-based models and locusts. Society for Integrative and Comparative Biology, San Francisco, 2013. Poster presentation and published abstract.

13 **Clissold, F. J**, S. J. Simpson. Plant quality: what does this mean to an insect herbivore? Australian Society for Biochemistry and Molecular Biology, Plant animal interactions Symposium 28, Cairns, 2011.

12 **Clissold, F. J**, N. Coggan, S. J. Simpson Reversing the temperature-size rule: Herbivore use dynamic thermoregulatory behaviour to alter host plant quality. Ecological Society of America, 96th Annual Meeting, 7th– 12th Aug, 2011, Austin, Texas, USA

11 Armour, W., **F. J. Clissold**, D. Barton, R. Overall, S. J. Simpson. Does the extraction of cell contents during digestion of grasses by the Australian plague locust occur via plasmodesmata. Plasmodesmata Sydney 2010.

10 **Clissold, F. J**, B. J. Tedder, A. D. Conigrave, S. J. Simpson. The gastrointestinal tract as a nutrient balancing organ. The Society for Integrative and Comparative Biology, Annual meeting, 3rd-7th Jan, 2010,Seattle, Washington, USA.

9 **Clissold, F. J**, & S.J. Simpson. The Interactive effects of body size and plant biomechanical properties on nutrition. Ecological Society of America, 94th Annual Meeting, 2nd – 7th Aug, 2009, Albuquerque, New Mexico, USA.

8 **Clissold, F. J**, B. J. Tedder, A. D. Conigrave, S. J. Simpson. Post ingestive regulation of nutritional uptake: differential release of gut enzymes. Integrative Physiology Conference, 5th-8th Dec, 2008, Sydney, Australia

7 **Clissold, F. J**, S. J. Simpson. Too tough! Plant biomechanical properties and nutrition: implications for chewing herbivores. Ecological Society of Australia Meeting 1st-5th December, 2008, Sydney, Australia

6 **Clissold, F. J**, Too much nitrogen: The paradoxical effects of nutrient ratios and supply rates on an outbreaking insect herbivore. Joint Meeting of the 92nd Ecological-Society-of-American/Society-for-Ecological-Restoration, August 05 -10, 2007 San Jose, California, USA Ecological Society of America Annual Meeting Abstracts Published: Aug 5 2007

5 **Clissold, F. J**, G. D, Sanson, & J. Read. Influence of diet anatomy, biomechanical properties and chemistry on Australian plague locust performance. Oral presentation and published abstract, Entomological Society of Australia Conference, Dec, 2003,Hobart, Australia.

4 Read, J, Sanson G, D, Gras, E, Brunt, C, **Clissold, F**. The relationship between biomechanical and chemical defense: Do chemical defenses decline as developing leaves become tougher? Abstracts, 4th International Plant Biomechanics Conference 20-25 July, 2003, Michigan State University, East Lansing, USA.

3 **Clissold, F. J**, G. D, Sanson, & J. Read. Two grasses with contrasting life history strategies as a food resource for the Australian plague locust. Oral presentation and published abstract, Ecological Society of Australia Conference, Nov, 2000, Melbourne, Australia.

2 **Clissold, F. J**, G. D, Sanson, & J. Read. Digestibility of two contrasting grasses by the Australian plague locust. Oral presentation and published abstract, Entomology Society of Australia Conference, 1999, Canberra, Australia.

1 **Clissold, F. J**., K. S. Lefevere, & B. Roberts Hormonal control of ovarian development in the Australian sheep blowfly, *Lucilia cuprina*. Oral presentation and published abstract, at the 5th Australian Applied Ecological Research Conference, 1993, Canberra.

Membership in Professional Societies

Ecological Society of America | The Society for Integrative and Comparative Biology | Australian Entomological Society | Ecological Society of Australia | Australasian Society of Animal Behaviour | Orthopterous Society

Collaborators

Americas

Dr Spencer Behmer and Paul Lenhart, (Texas A&M University); grasshopper ecology, linking mandibles morphology with feeding and nutritional niches. We are investigating the role mandible morphology and temperature plays in nutrient gain and host plant choice (niche partitioning) and population dynamics.

Professor Tony Joern (Kansas State University and Konza Prairie Biological Station); nutritional ecology of grasshopper communities.

Professor Jon Harrison (Arizona State University); grasshopper thermal and nutritional ecology.

Dr Mike Angilletta (Arizona State University) thermal physiology and behaviour of grasshoppers.

Dr Wah-Keat Lee (Argonne National Laboratory) morphology of mandibles and chewing behaviour in locusts

Korea

Dr Kwang Pum Lee; reproductive aging and nutrition in fruit flies.

Australian

Professor Stephen Simpson (The University of Sydney); insect feeding and foraging

Professor Arthur Conigrave (The University of Sydney); biochemist and expert in nutrient, especially amino acid sensing

Professor David Raubenheimer (The University of Sydney); nutrition

Dr Jerome Buhl (The University of Sydney); modeling insect behaviour

Dr Sebastian Holmes (University of Western Sydney); nutritional ecology of marine invertebrates.

Dr Adam Munn (University of Wollongong); Digestive plasticity

Research media coverage

2010, Nov 19; http://www.earthweek.com/2010/ew101119/ew101119c.html

2012, April 30; http://www.diffusionradio.com/2012/04/hot_locusts_and_digital_contac.html

2013 September 11, : http://www.theage.com.au/national/education/keeping-locusts-at-bay-20130905-2t6rf.html

THE AGE

Teaching and mentoring:

Supervision of research students

* research published

[1] Honours are equivalent to a MSc in the US system.

Honours marking scheme; H1 = *1st class Honours*, H2A = *upper 2nd class honours*, H2B = *lower 2nd class honours*, H3 = *3rd class honours,* Fail = *fail*.

[2]School of Molecular Biosciences, The University of Sydney

[3]top student and winner William John Dakin Prize in Zoology

Doctor of Philosphy student, project:

2011 Ximonie Clark, The integrative effect of temperature and body size on nutrition and the implications this has for host plant use by grass feeding Orthoptera.

Master of Science Students, project:

*2007 Ester Tarsisz, Masters student [Master of Applied Science (Wildlife Health and Population Management)]. Assisted with the project work component of course (minor thesis).

2005 Saatje Hontelez, Masters Student, Wageningen University, Netherlands, minor thesis project completed at The University of Sydney 'Foraging in a heterogeneous landscape'.

Honours Students, projects and results[1]:.

2014 Subject to final marks: Rachel Booth, Sara Perry, Jacqueline Wright

2013 Alexander Richardson; Linking morphometrics of grasshopper mandibles with functional outcomes' (Primary supervisor).

2013 Chris Allister; Dietary ecology of neriid flies (Associate supervisor, Chris is enrolled at the University of New South Wales working under A/Prof. Russell Bonduriansky).

[2]2011 Megan Lee; 'The gut microbiota of locusts: A study of locust diet engineering gut microbial community structure and contributing to host nutrition' (H1, Co-supervisor).

2010 Ximonie Clark; 'Modelling nutritional interactions: from individuals to communities.' (H1, Primary supervisor).

*[3]2010 Nicole Coggan; 'Body temperature and priorities: Can ectotherms use thermoregulation to maximise both rate of development and nutrient gain.' (H1, Primary supervisor).

2009-2010 Jeremy Platt; 'The confusing life of a mesoherbivore: Feeding decisions in a heterogeneous environment'. Project investigating resource use by an amphipod in the intertidal zone. (H1, Primary supervisor).

2008 William Armour; 'The morphology and physiology of plant tissue following ingestion by the Australian plague locust (*Chortoicetes terminifera*) and possible consequences for nutrient assimilation.' (H1, Primary supervisor).

*[2]2008 Ben Tedder; 'Mechanisms controlling macronutrient regulation in the locust, *Locusta migratoria*.' (H1, Co- supervisor).

*2007 Oliver Bradshaw; 'Wind affects morphology, function and chemistry of eucalypt seedlings with potential ecological consequences.' (H1, Co- supervisor).

2007 Antony Gould; 'Influence of wave energy on algal morphology and biochemistry and limpet nutrition'. (H2A, Co- supervisor).

*2006 Lindsay Gray; 'Peer pressure: examining the expression of density-dependent behavioural phenotypic plasticity in *Chortoicetes terminifera*, the Australian Plague Locust'. (H1, Co-supervisor).

Undergraduate students and projects

3rd year Advanced students;

2013 (Sara Perry, Animal Physiology) The effect of temperature and pH on the activity of digestive enzymes.

2013 (Julia Sheehan, Ecophysiology) The functional significance of the molar ridges of a grass-feeding grasshopper, *Locusta migratoria*.

2012 (Ruby Barber and Amelia Saul, Ecophysiology) Investigating the interactive effects of water concentration and relative humidity on feeding behaviour.

2010 (De-Anne Attwood and Zuben Brown, Ecophysiology) Nutritional consequences of plasticity of the gastrointestinal tract.

2010 (Yvonne Chang, Animal Physiology) Temperature and food intake in an ectotherm.

2010 (Zuben Brown, Evolutionary Genetics and Animal Behaviour) Nutrient state dependent locomotion.

2009 (Ximonie Clarke, Ecophysiology) Behaviour of *Locusta migratoria* mouthpart palps under different nutritional conditions.

2008 (Nicole Coggan, Fungi in the Environment) Effect of fungal pathogens in rye grass on feeding and nutrition in *Locusta migratoria*.

2007 (five students, Ecophysiology) Interactive effect of zinc and nutrients on growth and development of *Locusta migratoria*.

2006 (Helen Clark, Animal Physiology) investigated the effect of ontogenetic development stage on the jump response of *Chortoicetes terminifera.*

2nd year Advanced students;

2012 (Sara-Rose Perry, Entomology) 2012 Locusts alter their post-ingestive resting temperature in order to regulate the nutrient balance of their diet.

2010 (Zuben Brown, Invertebrate Zoology) Effect of nutrition on activity patterns.

2008-2010 (eight students, Entomology) Nutritional wisdom in insects: nutrient specific foraging by *Locusta migratoria.*

Undergraduate teaching experience

2005-2013 I have taught in the following courses while at The University of Sydney

Ecophysiology (3rd year); lectures and practical course, 'Plant-animal interactions'.

Zoology (2nd year), lectures and practical course, evolution of animal feeding and digestion. This is a new course running for the first time in 2013.

Invertebrate Zoology (2nd year); 8 lectures and 3 (2h) practical sessions covering the basic biology of non-crustacean arthropods.

Entomology (2nd year); Lectures and practical course 'Insect nutrition and behaviour; Nutritional wisdom in insects', and lectures on basic insect anatomy and function.

Supervised undergraduate projects for 'Advanced Students' (research projects available to students in the top 5%) these have included students enrolled in 3rd year *Ecophysiology, Animal Physiology, Animal Behaviour* and *Fungi in the Environment;* and 2nd year *Entomology* and *Invertebrate Zoology*.

2010 I was commissioned to write three modules for a final (3rd) year undergraduate web based course in *Entomology* at The University of Queensland. The modules being feeding, digestion and nutrition. This work was performed separately to that required for my current position.

1994 Biology Tutor Mannix College. Provided assistance to Monash University and Rusden (now Deakin University) undergraduate students. This involved a weekly lecture and tutorial.

Sessional academic:

1989 – 2004 (Monash University)

Designed, demonstrated and assessed the practical component of the *Entomology* unit for the 3rd year Zoology course and the special project section of *Cell Biology* (a 3rd year course run jointly by the Department of Zoology and Department of Anatomy)

I have run tutorials for

What is Science? A compulsory course for 1st and 2nd year science students that endeavours to teach students what a scientist does and how they do it, i.e. the introduction of basic philosophy of science, the development of team skills and the oral and written communication skills that a successful scientist requires. This was an advertised position.

Environmental Design and Data Analysis for Biologists, tutor (2004) for the practical section of an honours/post graduate advanced data analysis course covering, experimental design, linear models, ANOVA (including nested and factorial designs), ANCOVA, power analysis, multivariate analysis and multidimensional scaling.

Research Methods (2002-2004), tutor to a third year course designed to cover statistical methods commonly used by biologists (e.g. simple statistics, regression, correlation and

ANOVA (simple and more complex designs), principle component analysis and multidimensional scaling), to demonstrate the various methods of data presentation (e.g. graphs versus tables) and the scientific method.

1989-2004 I demonstrated and assessed practical classes at Monash University for

- *1st year Biology*, botany, zoology and genetics sections.
- 2nd year
  Zoology (animal diversity and animal form and function units),
  Ecology (experimental design, sampling techniques, data analysis practicals as well as specific small research projects).
- 3rd year
  Animal Physiology (animal nutrition, thermoregulation, endocrinology).
  Plant-Animal Interactions (feeding behaviour using invertebrates and vertebrates), and
  Ecology and Evolution of the Australian Flora (projects investigating changing floristics over a resource gradient, changes to relative resource allocation within and between plant species in different habitats and over resource gradients at The Dandenongs, Wyperfeld National Park and The Grampians).

Specific comments by students (originals on request) from the student feedback on courses I teach;

"encourages us to understand, not rote learn | encouraged interest in area I thought was totally abstract | appreciate complexity of insects much more | made me more interested in insects, especially the behavioural and morphological aspects of species | was enthusiastic which gave me a better appreciation for this section of the course | able to integrate our knowledge to real life situations | lecturer made an effort to make the lectures fun, it was not all notes and information | communication with students excellent | great overall organization, communication and interaction | she explained things in a simple easy to understand way and most of the time it was funny too! | good deliveries with videos, etc. | effective teaching with supplementary sources to validate information | lectures were well structured | easily approachable and obviously cared that we are comfortable with learning outcomes"

In response to best part of the entire invertebrate course;

"understanding significance of insect ecology | liked the lectures, especially the focus on latest research findings"

Unofficial feedback from other academic staff at mid semester camp;

"Fiona's lectures were best | the students all raved about your lectures"

Academic and Professional Leadership

AD-hoc reviewer –

Aging Cell, Animal Behaviour, Arthropod-Plant Interactions, Australian Journal of Entomology, Australian Journal of Zoology, BioControl, Botanical Studies, Canadian Journal of Zoology, Ecology, Entomologia Experimentalis et Applicata, Functional Ecology, Journal of Animal Ecology, Journal of Comparative Physiology B, Journal of Ecology, Journal of Experimental Biology, Journal of Insect Behaviour, Journal of Insect Physiology, Journal of Insect Science, Journal of Orthoptera Research, Naturwissenschaften, Physiological and Biochemical Zoology, Physiological Entomology, PLoS ONE, Proceedings of the Royal Society B-Biological Sciences.

Assessor

2007- 2014 Honours theses, School of Biological Sciences, The University of Sydney

2006 & 2009 Postgraduate Excellence in Research Award, School of Biological Sciences, The University of Sydney

Entomological Society student prize at Annual General Meeting and Scientific Conference, Melbourne

Conference organizer

Australian Entomological Society, Annual General Meeting and Scientific Conference, Melbourne.

Seminar Coordinator

2010 - 2011 School of Biological Sciences, The University of Sydney weekly seminar series

1999 - 2000 School of Biological Sciences, Monash University, weekly postgraduate student seminar series.

Committees

Various user group committees to oversee the running of shared facilities at both The University of Sydney and Monash University; glasshouse facilities, growth cabinet facilities, animal houses.

Design and implementation of two new courses run by the School of Biological Sciences, The University of Sydney; Zoology (2nd year) commenced semester 1, 2013, and Animal Physiology and the Environment (3rd year) to commence in 2014.

Restructuring of second year Zoology courses, Monash University.

Regional councillor –Australian Entomological Society, 1997-2000

Coordinate volunteers

2005-2013 Many Sydney University undergraduate students wish to participate in laboratory experiments to gain a 'feel' for the differing types of research that is called biology. I have coordinated their placement within the Simpson research group as well as having assisted these students myself.

Employment details

Jan 2011 – 2014

Postdoctoral Research Associate (Level B), The University of Sydney. Funded by an Australian Laureate Fellowship to Professor Stephen J. Simpson; entitled 'Nutritional Dynamics: from Genes to Individuals to Ecosystems'.

Lecturer, School of Biological Sciences, The University of Sydney.

Jan 2010 - 2011

Postdoctoral Fellow, The University of Sydney. Named post doctoral fellow to ARC (Australian Research Council) funded project: 'Heterarchical modelling of nutritional ecology: from individuals to communities'

Dec 2009

Promoted from Level A to Level B (in the Australian system all academic positions are graded from A to E, with Heads of Schools usually a Level D or E).

Feb 2005-Dec 2009

Level A Postdoctoral Fellow, The University of Sydney.

Funded by ARC Federation Fellowship to Professor Stephen J. Simpson.

This involved,

- Initially setting up Professors Stephen Simpson's research infrastructure. This included designing and overseeing the construction/refitting of a research laboratory, quarantine standard insectaries and glasshouse facilities. Additionally, I was instrumental in Professor Stephen Simpson obtaining an University of Sydney major equipment grant in 2006 ($A255,609) to equip the laboratory (Conditions of my appointment prevented me from directly applying for the grant). I also sourced and established cultures of three species of locusts and various strains of Drosophila.
- Carrying out research, from which I have a career total of 25 manuscripts have been published in mostly very high level journals, one in submission, data collected, analyzed and in various states of completion for a further five manuscripts and I am currently undertaking research on other projects.
- Teaching commitments (up to 40% of that of a tenured staff).
- As the senior Postdoctoral fellow in the Simpson group I also oversee the smooth running of the laboratory and insect cultures, liaising with the two technical staff to ensure safety standards are adhered to, equipment is fully operational, students have the necessary resources to complete their projects as well as providing assistance in terms of experimental design, statistical and chemical analysis.

2010

School of Biological Sciences, The University of Queensland.

Designed and implemented three modules for 3rd year Entomology, an external web-based course. This work was performed separately to that required for my current position.

1994

Biology Tutor Mannix College.

Provided assistance to Monash University and Rusden (now Deakin University) undergraduate students. This involved a weekly lecture and tutorial.

1989 – 2004

Sessional Academic Monash University

Courses taught listed in Teaching and mentoring.

1989- Jan 2005

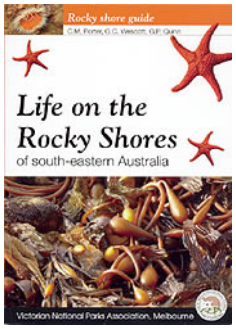
Research/Technical assistant, Monash University

- Chemical analysis of secondary compounds in leaves from a range of plant species. This involved devising and adapting techniques for the measurement of secondary plant compounds (e.g. the alkaloids, solasonine and solamargine, from Solanum plants using capillary electrophoresis and HPLC and terpenes from various eucalypt species using GCMS).
- Training graduate and post graduate students in the appropriate techniques to analyze plant chemistry
- Re-collating student data
- Maintenance of healthy research plants in glasshouses.
- Collection of plant data (leaf anatomy, leaf chemistry, determination of growth rates, leaf area and biomass, photosynthetic capacity).
- Analysis of soil chemistry and properties.
- Rainforest vegetation surveys (New Caledonia).
- Collection of seedlings and/or seeds (within Australia, Queensland, Tasmania and Victoria, and New Caledonia).
- Ensuring the laboratory met current occupation health and safety standards.
- Organization of laboratory meetings and discussion group to ensure the smooth running of the laboratory, that health and safety standards were maintained and to allow the communication of ideas within the plant ecology group.

- Training students in the use of equipment, analytical techniques and good laboratory practices.

OHSE courses attended

4-WD - Advanced drivers course
Fire training and Fire Warden training
Radiation Safety – unsealed sources
Risk Management – Laboratory and Field
Level 2, Senior First Aid Certificate
Remote Area First Aid Course



I am a keen photographer and I provided many images for the second edition of Life on the Rocky Shores of South-Eastern Australia: An Illustrated Field Guide. C. Porter, G. Westcott & G. Quinn. Victorian National Parks Association (2010)

Professional referees

Current employer:

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My PhD supervisors have retired from biology and have moved to the US but are responding to email.

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