

Daniel Falster

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Profiles	Orcid ID: 0002-9814-092X, Google scholar, Scopus ID: 6507695598, LinkedIn, Github: dfalster, Twitter: adaptive_plant, Impact story: 0002-9814-092X,
Summary of research outputs	<p>Articles: 42 articles in leading international journals such as <i>Nature</i>, <i>PNAS</i>, <i>Trends in Ecology & Evolution</i>, <i>Biological Reviews</i>, <i>New Phytologist</i>, <i>Methods in Ecology & Evolution</i>, <i>Journal of Ecology</i>, <i>American Naturalist</i>.</p> <p>Citations: > 6700 total citations, > 700 citations yr⁻¹, 11 papers cited > 100 times each, H-index of 24 [Google Scholar].</p> <p>Datasets: I have produced and made publicly available two global compilations: the Biomass and Allometry Database, and the Coral Traits Database, as well as other datasets.</p> <p>Software: I have produced and made publicly available important software packages, including the statistical package SMATR (used in over 750 publications) and the growth model, plant.</p> <p>Reproducible science: I am making my publications entirely reproducible (see traitecoevo.github.io), enabling others to reproduce, adapt, apply and extend my results.</p>
Research highlights	<p>Global shift towards trait-based ecology: My research has enabled global quantification and comparison of plant strategies by i) proposing four leading traits to capture global plant diversity, now quantified for many of the world's species (Westoby <i>et al</i> 2002, 1633 cites); ii) Developing methods enabled comparison of light capture among species (Falster <i>et al</i> 2003, 303 cites); iii) Quantifying a global trade-off in how conductive tissue in stems is arranged (Zanne <i>et al</i> 2010, 182 cites).</p> <p>Trait-based community assembly: My recent work shows how tradeoffs in plant function mediate species coexistence and how we can predict trait mixtures from first principles (Falster <i>et al</i> 2017, 3 cites).</p> <p>Global rules of plant competition: Using growth data from > 3 million trees in plots across the world, Kunstler <i>et al</i> 2016 (71 cites) shows how functional traits influence competitive interactions.</p> <p>The Biomass and Allometry Database: Synthesises data collected in 176 different studies to create the world's largest, public database on individual plant allometry (Falster <i>et al</i> 2015, 27 cites).</p> <p>How traits influence plant growth: I have shown why the effect of traits on plant growth changes with size (Falster <i>et al</i> 2011, 2016b, 73 cites) and verified predictions via meta-analysis (Gibert <i>et al</i> 2016).</p> <p>Why do large parents have large offspring?: I showed how size-asymmetric competition among rival offspring explains the phenomena, unifying theory across different taxa (Falster <i>et al</i> 2008, 27 cites).</p>
Education	<p>PhD in ecology, <i>Towards a general theory of plant trait diversity</i> – Macquarie University, supervised by Prof. Mark Westoby 2006-2010</p> <p>MSc (Honours I), <i>Plant height strategies</i> – Macquarie University, supervised by Prof. Mark Westoby 2002-2003</p> <p>BSc (Ecology and Environmental Science), University of New South Wales 1996-2000</p>
Positions (2006-)	<p>ARC Future Fellow (Level C) – University of New South Wales (Tenure track) 2017-2022</p> <p>Research Fellow (Level C) – Macquarie University (1 yr) 2016</p> <p>ARC Australian Post-doctoral Fellow (Level B) – Macquarie University (4 yr) 2011-2015</p> <p>Post-doctoral visiting scientist – Smithsonian Tropical Research Institute (Panama), hosted by Dr Joe Wright (4 yr 0.1FTE) 2011-2014</p> <p>Australian Laureate Post-doctoral Research Fellow (Level A) – Macquarie University, hosted by Prof. M Westoby (2 yr) 2010-2011</p>

	Summer Scholar – International Institute for Applied Systems Analysis; hosted by Dr Ulf Dieckmann (0.5 FTE)	2006-2009
	IT & web support , ARC-NZ Research Network for Vegetation Function – Macquarie University (2.5 yrs, 0.1FTE)	2006-2009
Grants (2006-)	ARC Future Fellow, AUD 802,332; CI (100%), Niche 2.0 - Australian and global plant diversity from first principles	2017-2022
	SIEF, AUD 4mill; partner investigator (PI, 50%). Big Data Knowledge Discovery: Machine Learning meets Natural Science	2013-2016
	Swedish formas, SEK 4258,000; PI (5%) Precision forestry for the future: enhanced forest management by optimized tree selection in thinning operations	2013-2015
	MQ RIBG, AUD 82,000, (PI); Ecophysiological instrumentation to measure leaf, stem and whole-plant CO2 and water use	2012
	ARC Discovery Project, AUD 310,000; CI (100%), Putting adaptation into vegetation models: towards a predictive theory of trait diversity and stand structure	2011-2013
	MQ Postgraduate Research Fund, AUD 4500. With Vice-Chancellor’s commendation	2009
	ARC Postgraduate Award, AUD 70,000; Chief investigator (CI) (100%)	2006-2009
Honours & awards (2006-)	Next Generation Ecologist Ecological Society of Australia	2015
	Creativity and contributions to teaching award for the ‘Nice R Code course and blog’, Department of Biological Sciences, Macquarie University	2014
	National University Teaching Award for Genes to Geosciences program at Macquarie University	2012
	Highly commended, Early Career Researcher of the Year Award – Macquarie University	2011
	Outstanding student presentation , 6th Biennial Meeting of the Australasian Evolution Society, ANU	2009
	UNSW EERC prize for ‘outstanding presentation in evolutionary ecology’ – Ecological Society of Australia Conference	2008
	1 of 16 invited participants for Fresh Science Media Course – Science in Public	2008
	Aurelio Peccei Award for ‘outstanding scientific achievement’ during Summer Program – International Institute of Applied Systems Analysis, Austria	2006
Articles (preprints)	Wenk EH, Abramowicz K, Westoby M, Falster DS (2017) Coordinated Shifts In Allocation Among Reproductive Tissues Across 14 Coexisting Plant Species . <i>bioRxiv</i> : 141473. doi: 10.1101/141473 code: github	
	Falster DS, Duursma RA, FitzJohn RG (2016) Trajectories: how functional traits influence plant growth and shade tolerance across the life-cycle . <i>bioRxiv</i> : 083451. doi: 10.1101/083451 code: github	
Articles (published)	Falster DS, Brännström Å, Westoby M, Dieckmann U (2017) Multitrait successional forest dynamics enable diverse competitive coexistence . <i>Proceedings of the National Academy of Sciences USA</i> 114: E2719-E2728. doi: 10.1073/pnas.1610206114 preprint: 10.1101/014605 code: github Times cited: 3	
	Duursma RA, Falster DS (2016) Leaf mass per area, not total leaf area, drives differences in above-ground biomass distribution among woody plant functional types . <i>New Phytologist</i> 212: 368–376. doi: 10.1111/nph.14033 preprint: 10.1101/025361 code: github Times cited: 2	
	Gibert A, Gray EF, Westoby M, Wright IJ, Falster DS (2016) On the link between functional traits and growth rate: meta-analysis shows effects change with plant size, as predicted . <i>Journal of Ecology</i> 104: 1488-1503. doi: 10.1111/1365-2745.12594 code: github Times cited: 3	

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- Kunstler G, Falster D, Coomes DA, Hui F, Kooyman RM, Laughlin DC, Poorter L, Vanderwel M, Vieilledent G, Wright SJ, Aiba M, Baraloto C, Caspersen J, Cornelissen JHC, Gourlet-Fleury S, Hanewinkel M, Herault B, Kattge J, Kurokawa H, Onoda Y, Peñuelas J, Poorter H, Uriarte M, Richardson S, Ruiz-Benito P, Sun I, Ståhl G, Swenson NG, Thompson J, Westerlund B, Wirth C, Zavala MA, Zeng H, Zimmerman JK, Zimmermann NE, Westoby M (2016) **Plant functional traits have globally consistent effects on competition.** *Nature* 529: 204–207. doi: 10.1038/nature16476 Times cited: 71
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- Madin JS, Hoogenboom MO, Connolly SR, Darling ES, Falster DS, Huang D, Keith SA, Mizerek T, Pandolfi JM, Putnam HM, Baird AH (2016) **A trait-based approach to advance coral reef science.** *Trends in Ecology & Evolution*: published online. doi: 10.1016/j.tree.2016.02.012
- Paul KI, Roxburgh SH, Chave J, England JR, Zerihun A, Specht A, Lewis T, Bennett LT, Baker TG, Adams MA, Huxtable D, Montagu KD, Falster DS, Feller M, Sochacki S, Ritson P, Bastin G, Bartle J, Wildy D, Hobbs T, Larmour J, Waterworth R, Stewart HT, Jonson J, Forrester DI, Applegate G, Mendham D, Bradford M, O’Grady A, Green D, Sudmeyer R, Rance SJ, Turner J, Barton C, Wenk EH, Grove T, Attiwill PM, Pinkard E, Butler D, Brooksbank K, Spencer B, Snowdon P, O’Brien N, Battaglia M, Cameron DM, Hamilton S, McAuthur G, Sinclair J (2016) **Testing the generality of above-ground biomass allometry across plant functional types at the continent scale.** *Global Change Biology* 22: 2106-2124. doi: 10.1111/gcb.13201 data: 10.4227/05/57354015127B8 Times cited: NA
- Falster DS, Duursma RA, Ishihara MI, Barneche DR, FitzJohn RG, Vårhammar A, Aiba M, Ando M, Anten N, Aspinwall MJ, Baltzer JL, Baraloto C, Battaglia M, Battles JJ, Bond-Lamberty B, van Breugel M, Camac J, Claveau Y, Coll L, Dannoura M, Delagrangé S, Domec J, Fatemi F, Feng W, Gargaglione V, Goto Y, Hagihara A, Hall JS, Hamilton S, Harja D, Hiura T, Holdaway R, Hutley LS, Ichie T, Jokela EJ, Kantola A, Kelly JWG, Kenzo T, King D, Kloeppel BD, Kohyama T, Komiyama A, Laclau J, Lusk CH, Maguire DA, le Maire G, Mäkelä A, Markesteijn L, Marshall J, McCulloh K, Miyata I, Mokany K, Mori S, Myster RW, Nagano M, Naidu SL, Nouvellon Y, O’Grady AP, O’Hara KL, Ohtsuka T, Osada N, Osunkoya OO, Peri PL, Petritan AM, Poorter L, Portsmouth A, Potvin C, Ransijn J, Reid D, Ribeiro SC, Roberts SD, Rodríguez R, Saldaña-Acosta A, Santa-Regina I, Sasa K, Selaya NG, Sillett SC, Sterck F, Takagi K, Tange T, Tanouchi H, Tissue D, Umehara T, Utsugi H, Vadeboncoeur MA, Valladares F, Vanninen P, Wang JR, Wenk E, Williams R, Ximenes FdA, Yamaba A, Yamada T, Yamakura T, Yanai RD, York RA (2015) **BAAD: a Biomass And Allometry Database for woody plants.** *Ecology* 96: 1445. doi: 10.1890/14-1889.1 data: Ecological Archives E096-128-D1 R package: [baad.data](https://github.com/dfalster/baad) code: github.com/dfalster/baad Times cited: 27
- Wenk E, Falster D (2015) **Quantifying and understanding reproductive allocation schedules in plants.** *Ecology and Evolution* 5: 5521-5538. doi: 10.1002/ece3.1802 preprint: 10.1101/008508 Times cited: 11
- Li G, Harrison SP, Prentice IC, Falster DS (2014) **Simulation of tree-ring widths with a model for primary production, carbon allocation, and growth.** *Biogeosciences* 11: 6711-6724. doi: 10.5194/bg-11-6711-2014 Times cited: 18
- Lindh M, Zhang L, Falster DS, Franklin O, Brännström Å (2014) **Plant diversity and drought: the role of deep roots.** *Ecological Modelling* 290: 85-93. doi: 10.1016/j.ecolmodel.2014.05.008 Times cited: 6
- Cornwell WK, Westoby M, Falster DS, FitzJohn R, O’Meara B, Pennell MW, McGlenn D, Eastman JM, Moles AT, Reich PB, Tank DC, Wright IJ, Aarssen L, Beaulieu JM, Kooyman RM, Leishman MR, Miller ET, Niinemets Ü, Oleksyn J, Ordóñez A, Royer DL, Smith SA, Stevens PF, Warman L, Wilf P, Zanne AE (2014) **Functional distinctiveness of major plant lineages.** *Journal of Ecology* 102: 345-356. doi: 10.1111/1365-2745.12208 R package: [ksi](https://github.com) Times cited: 49
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- Warton DI, Duursma RA, Falster DS, Taskinen S (2012) **smatr 3 – an R package for estimation and inference about allometric lines.** *Methods in Ecology and Evolution* 3: 257-259. doi: 10.1111/j.2041-210X.2011.00153.x R package: smatr Times cited: 335
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- Falster DS, Brännström Å, Dieckmann U, Westoby M (2011) Influence of four major plant traits on average height, leaf-area cover, net primary productivity, and biomass density in single-species forests: a theoretical investigation.** *Journal of Ecology* 99: 148-164. doi: 10.1111/j.1365-2745.2010.01735.x Times cited: 73
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- Zanne AE, Falster DS (2010) **Plant functional traits – linkages between stem anatomy, plant performance, and life history.** *New Phytologist* 185: 348-351. doi: 10.1111/j.1469-8137.2009.03135.x Times cited: 25
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- Lusk CH, Falster DS, Pérez-Millaqueo M, Saldaña A (2006) **Ontogenetic variation in light interception, self-shading and biomass distribution of seedlings of the conifer Araucaria araucana (Molina) K. Koch.** *Revista Chilena de Historia Natural* 79: 321-328. doi: 10.4067/S0716-078X2006000300004 Times cited: 8
- Warton DI, Wright IJ, Falster DS, Westoby M (2006) **Bivariate line-fitting methods for allometry.** *Biological Reviews* 81: 259-291. doi: 10.1017/S1464793106007007 code: smatr v2 Times cited: 1346

Wright IJ, Falster DS, Pickup M, Westoby M (2006) **Cross-species patterns in the coordination between leaf and stem traits, and their implications for plant hydraulics.** *Physiologia Plantarum* 127: 445-456. link: [dx.doi.org/10.1111/j.1399-3054.2006.00699.x](https://doi.org/10.1111/j.1399-3054.2006.00699.x) Times cited: 85

Falster DS, Westoby M (2005) **Alternative height strategies among 45 dicot rain forest species from tropical Queensland, Australia.** *Journal of Ecology* 93: 521-535. doi: 10.1111/j.0022-0477.2005.00992.x data: github Times cited: 152

Falster DS, Westoby M (2005) **Tradeoffs between height growth rate, stem persistence and maximum height among plant species in a post-fire succession.** *Oikos* 111: 57-66. doi: 10.1111/j.0030-1299.2005.13383.x Times cited: 64

Wright IJ, Reich PB, Cornelissen JHC, Falster DS, Garnier E, Hikosaka K, Lamont BB, Lee W, Oleksyn J, Osada N, Poorter H, Villar R, Warton DI, Westoby M (2005) **Assessing the generality of global leaf trait relationships.** *New Phytologist* 166: 485-496. doi: 10.1111/j.1469-8137.2005.01349.x Times cited: 484

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Moles AT, Falster DS, Leishman M, Westoby M (2004) **Small-seeded plants produce more seeds per square metre of canopy per year, but not per individual per lifetime.** *Journal of Ecology* 92: 384-396. doi: 10.1111/j.0022-0477.2004.00880.x data: SuppMat Times cited: 227

Falster DS, Westoby M (2003) **Leaf size and angle vary widely across species: what consequences for light interception?.** *New Phytologist* 158: 509-525. doi: 10.1046/j.1469-8137.2003.00765.x Times cited: 303

Falster DS, Westoby M (2003) **Plant height and evolutionary games.** *Trends in Ecology and Evolution* 18: 337-343. doi: 10.1016/S0169-5347(03)00061-2 Times cited: 348

Westoby M, Falster DS, Moles AT, Vesk P, Wright IJ (2002) **Plant ecological strategies: some leading dimensions of variation between species.** *Annual Review of Ecology and Systematics* 33: 125-159. doi: 10.1146/annurev.ecolsys.33.010802.150452 Times cited: 1633

Falster DS, Murray BR, Lepschi BJ (2001) **Linking abundance, occupancy and spatial structure: An empirical test of a neutral model in an open-forest woody plant community in eastern Australia.** *Journal of Biogeography* 28: 317-323. doi: 10.1046/j.1365-2699.2001.00553.x Times cited: 18

Articles (in review)

Gray EF, Wright IJ, Falster DS, Lehmann CER, Bradford M, Cernusak L. **Branch scale biomass allocation and tissue traits explain variation in diameter growth rates of adult trees in a tropical rainforest** (in review at *Journal of Ecology*).

Hellström L, Falster DS, Westoby M, Brännström Å. **Branch-thinning explains the large-scale, self-similar structure of tree.** (in review at *American Naturalist*).

Lindh M, Falster DS, Zhang L, Dieckmann U, Brännström Å. **Evolution of tree crown shape and the influence of productivity, incident sun angle, and latitude.** (in review at *New Phytologist*).

Rani R, Falster DS, Abramowicz K, Sterck F, Brännström Å. **Effects of bud flushing strategies on tree growth.** (in review at *Tree physiology*).

Articles (in prep)

Camac JS, Westoby M, Wright SJ, Falster DS. **Unifying intra- and inter-specific variation in tropical tree mortality: towards a mechanistic framework.**

Falster DS, Camac JA, Duursma R, FitzJohn RG, Gibert A, McCalman L, Reid A. **How to build and grow the woody plants of the world.**

Falster DS, Warton D. **Hierarchical Standardised Major Axis line fitting.**

FitzJohn RG, Kunstler G, Westoby M, Falster DS. **The shape of competition functions in resource-based models.**

Wenk EH, Abramowicz K, Westoby M, Falster DS. **Cross species patterns of reproductive allocation through ontogeny.**

Blog posts

FitzJohn RG, **Falster DS** (2016) Key technologies used to build the plant package (and maybe soon some other big simulation models in R). *methodsblog.wordpress.com/2016/02/23/plant/*.

Falster DS, FitzJohn RG, Duursma RA, Barneche DR (2016) The challenge of combining 176 x #otherpeoplesdata to create the Biomass And Allometry Database. *ropensci.org/blog/2015/06/03/baad/*.

Falster DS (2015) For full details of the model see elsewhere. *danielfalster.com/blog/2015/08/19/SuppMat/*.

Falster DS (2013) Why I want to write nice R code. *nicercode.github.io/blog/2013-04-05-why-nice-code/*.

Falster DS (2013) Reflections on the software carpentry teaching module. *swcarpentry.github.io/training-course/2013/06/reflections-on-the-software-carpentry-teaching-module/*.

Falster DS (2013) Making a case for a fully open trait database. *danielfalster.com/blog/2013/08/23/making-a-case-for-a-fully-open-trait-database/*.

Pearcy RW, Duursma RA, **Falster DS** (2011) Studying plant architecture with Y-plant and 3D digitising. *prometheuswiki.publish.csiro.au/tiki-index.php?page=Studying+plant+architecture+with+Y-plant+and+3D+digitising*.

Published slides

Falster DS (2016) The plant package for R. *doi.org/10.6084/m9.figshare.3422983.v3*.

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Duursma RA, **Falster DS** (2015) Does biomass partitioning differ between plant functional types? Analysis of biomass and allometry database (BAAD). *www.slideshare.net/remkoduursma/duursma-baad-esa2015*.

Falster DS (2013) Trait-based approaches in plant ecology - towards a theory of form and function. *dx.doi.org/10.6084/m9.figshare.782265*.

Falster DS (2013) Growth trajectories: a new way of understanding the influence of traits on plant growth. *dx.doi.org/10.6084/m9.figshare.775379*.

Presentations (^ indicates instances with another presenting) (2010-)

INVITED PLENARIES

Falster DS (2015) Towards a theory of plant trait diversity. *Ecological Society of Australia (Adelaide)*

Falster DS (2015) Modelling strategic behaviour during combat (in plants). *Eco-Stats: technological advances between ecology and statistics (Sydney)*

Falster DS (2013) Trait-based approaches in plant ecology: towards a theory of form and function. *Trait-based approaches to Ocean Life (Copenhagen)*

Westoby M ^ & **Falster DS** (2010) Species traits, niches, and community assembly. *Gordon Conference on Metabolic Scaling (Uni New England, USA)*

DEPARTMENT SEMINARS

Falster DS (2016) Towards a theory of plant trait diversity. *University of Queensland*

Falster DS (2016) Towards a theory of plant trait diversity. *Princeton University (USA)*

Falster DS (2016) Towards a theory of plant trait diversity. *Smithsonian Tropical Research Institute (Panama)*

Falster DS (2015) Towards a theory of plant trait diversity. *IRSTEA Grenoble (France)*

Falster DS (2015) Towards a theory of plant trait diversity. *CNRS Montpellier (France)*

Falster DS (2015) Towards a theory of plant trait diversity. *University of Sydney*

Falster DS (2015) Towards a theory of plant trait diversity. *Macquarie University*

Falster DS (2012) Competition for light promotes plant-trait and species diversity via niche partitioning and neutral dynamics. *CTFS Science talk (Smithsonian Tropical Research Institute, Panama)*

Falster DS (2012) Trait-based niche differentiation in forests: fresh insight from a mechanistic model. *EERC Seminar Series (University of New South Wales)*

CONFERENCE TALKS

Falster DS (2016) The challenge of combining 176 x #otherpeoplesdata to create the Biomass And Allometry Database (BAAD). *UseR (Stanford, USA)*

Falster DS (2016) Reproducible research in R with remake. *Sydney Bioinformatics Research Symposium*

Falster DS (2016) Key trade-offs maintaining successional diversity. *Ecological Society of Australia (Perth)*

Falster DS (2015) Data-driven ecology. *Knowledge Discovery and Data Mining (Sydney)*

Falster DS (2015) Trait-based forest assembly generates neutral outcomes from niche processes. *EU-Macro (Copenhagen, Denmark)*

Duursma R[^] & **Falster DS** (2015) Does biomass partitioning differ between plant functional types? Analysis of a global biomass and allometry database (BAAD). *Ecological Society of America (Baltimore)*

Falster DS (2015) The challenge of combining 176 x #otherpeoplesdata to create the Biomass And Allometry Database (BAAD). *Ecological Society of Australia (Adelaide)*

Duursma RA[^], **Falster DS**, Barneche DR, FitzJohn RG (2014) Global patterns in biomass allocation in woody plants: the biomass and allometry database (BAAD). *Combio; Canberra Australia*

FitzJohn R[^], **Falster DS**, Kunstler G & Westoby M (2014) Competition Kernels & Coexistence. *European Society for Evolutionary Biology*

Falster DS (2013) Growth trajectories: a new way of understanding the influence of traits on plant growth. *Intecol (London)*

Kunstler G[^], Westoby M, **Falster DS** & others (2013) How are competitive interactions influenced by traits? A global analysis based on tree radial growth. *EcoTas (Wellington New Zealand)*

Falster DS (2012) Growth trajectories: a new way of understanding the influence of traits on plant growth. *Ecological Society of Australia (Melbourne)*

Falster DS, Brännström Å, Westoby M[^] & Dieckmann U (2010) Competition for light promotes plant-trait and species diversity via niche partitioning and neutral dynamics. *Ecological Society of Australia (Canberra)*

WORKSHOPS

Falster DS (2014) Trait-based approaches in plant ecology – towards a theory of form and function. *Coral traits workshop (Sydney)*

Falster DS (2011) A predictive theory of trait diversity. *Tempo & Mode of Plant Trait Evolution (NEScent / Macquarie University)*

Falster DS (2011) Mind the gap: size-structure and competition in vegetation models. *Challenges in Modelling Vegetation Function and Dynamics (UWS)*

Falster DS, Brännström Å, Westoby M & Dieckmann U (2011) Towards a general theory of plant trait diversity. *Next generation DGVMs, Macquarie University*

Falster DS, Brännström Å[^], Westoby M & Dieckmann U (2010) Towards a general theory of plant trait diversity. *Evolution of divergence and speciation models of specific systems (Hölar, Iceland)*

Falster DS (2010) Towards a general theory of plant trait diversity. *Next generation DGVMs (Macquarie University)*

STUDENT TALKS & POSTERS

Gray E[^], **Falster DS** & Wright IJ (2014) Assimilation and allocation: explaining variation in plant growth rates using functional traits. *Ecological Society of Australia (Alice Springs)*

Rani R[^], Abramowicz K, Brännström Å & **Falster DS** (2013) Influence of morphological traits on wood litter production. *7th International Conference on Functional-Structural Plant Models; Saariselkä, Finland*

Lindh M[^], Zhang L, **Falster DS**, Franklin O, Westoby M & Brännström Å (2013) Plant diversity and drought. *7th International Conference on Functional-Structural Plant Models; Saariselkä, Finland*

Díaz M[^], Falster DS & Madin J (2013) What is cover hiding? Understanding Sarcophyton spp. population dynamics after a cyclone disturbance. *ACRIS (Sydney)*

Workshops	A diversity of approaches: key advances in trait-based theory and methods (Ecological Society of Australia conference)	2016 Dec 2
	My role: Co-organised with Gallagher	
	Modern Ecology: Challenges and Opportunities (Ecological Society of Australia conference)	2015 Dec 2
	My role: Invited speaker & panel member	
	Data Driven Science (21st ACM SIGKDD conference on Knowledge Discovery & Data Mining)	2015 Aug 12
	My role: Invited speaker & panel member	
	Coral Traits Working Group (Macquarie University)	2014 Jun 9-13
	My role: Workshop facilitator	
	How are competitive interactions influenced by traits – a global analysis? (Macquarie University)	2013 Sep 16-20
	My role: Co-organised with Georges Kunstler	
	Trait based approaches to Ocean Life (Danish Royal Academy of Sciences)	2013 Aug 26-28
	My role: Invited participant and keynote speaker	
	Next generation DGVMs, brainstorming session (Macquarie University)	2011 Jun 24
My role: Invited speaker & participant		
Challenges in modelling vegetation function and dynamics (University of Western Sydney)	2011 Dec 2	
My role: Co-organised with Remko Duursma		
Approaches to modelling vegetation (University of Western Sydney)	2009 Jun 25	
My role: Invited speaker & participant		
Towards an evolutionary ecology vegetation model (Macquarie University)	2008 Apr 7-11	
My role: Co-organised meeting with Mark Westoby		
Vegetation schemes in earth system models (ARC-NZ Research Network for Vegetation Function)	2005 Oct 10-13	
My role: Invited participant		
Third-generation models of carbon assimilation and water expenditure (ARC-NZ Research Network for Vegetation Function)	2005 Nov 1-4	
My role: Invited participant		
Vascular design: comparison of theory strands (ARC-NZ Research Network for Vegetation Function)	2005 Aug 25-29	
My role: Invited participant		
Teaching (courses)	Software carpentry bootcamp, University of Sydney	2016
	About: 2 day course intensive workshop teaching researchers basic programming skills	
	My role: I organised the event, wrote the content, and co-taught with J Madin, D Noble and 3 helpers	
	Introduction to remake package for reproducible research on R, University of NSW	2015
	About: 1.5hr tutorial introducing researchers to the remake package	
My role: I organised the event, wrote the content, and taught		
Software carpentry bootcamp, University of NSW	2014	
About: 2 day course intensive workshop teaching researchers basic programming skills		
My role: I organised the event, wrote the content, and co-taught with R FitzJohn, D Barneche and 4 helpers		
Software carpentry bootcamp, University of Technology Sydney	2014	
About: 2 day course intensive workshop teaching researchers basic programming skills		
My role: I organised the event, wrote the content, and co-taught with R FitzJohn, D Barneche and 4 helpers		

	Software carpentry bootcamp, Macquarie University	2013
	About: 2 day course intensive workshop teaching researchers basic programming skills	
	My role: I participated as 1 of 4 helpers, assisting Greg Wilson	
	Nice R code course, Macquarie University	2013
	About: Series 8 x 1.5 hr tutorials teaching researchers basic programming skills	
	My role: I organised the event, wrote the content, and co-taught with R FitzJohn	
	Self study reading course in plant ecology, Umeå University Sweden	2012
	About: Series of 8 reading topics, designed for PhD student with background in mathematics	
	My role: I organised the event, wrote the content, and taught	
	Modelling population dynamics: using first year math to model population growth rates, survival, and fitness, Macquarie University	2011
	About: 2 day course intensive workshop introducing researchers to mathematical models	
	My role: I organised the event, wrote the content, and taught	
Teaching (guest lectures)	Trait-based community assembly, Biol 347: Plants and Ecosystems, Macquarie University	2015
	From field plant ecology to computer modelling and big data, Unit 301069, Research Stories (UWS)	2015
	Biology in the age of data, Biol 391: Biological Sciences Capstone, Macquarie University	2014
	Modelling in Ecology & Evolution – 1hr Tutorial for ‘Advanced Biology’ students	2011
Conferences attended (2010-)	Sydney Bioinformatics Research Symposium	2016
	UseR, Stanford USA	2016
	Ecological Society of Australia, Perth	2016
	Future of Work, Government house, Sydney	2015
	Knowledge Discovery Data Mining, Sydney	2015
	EUMacro, Copenhagen	2015
	Ecostats: Technological advances between Ecology and Statistics, UNSW	2015
	Ecological Society of Australia, Adelaide	2015
	Intecol, London	2013
	Ecological Society of Australia, Melbourne	2012
Professional development	Nature masterclass: writing for the Nature family of journals (1 day, Garvan Institute)	2015
	Software Carpentry instructors training course (Greg Wilson, 5 days, Software Carpentry Foundation)	2013
	Macquarie University HDR supervision (1 day)	2013
	Short postgraduate research courses: ‘Global carbon cycling’ (Colin Prentice, 1 day, Macquarie University)	2010
	Short postgraduate research courses: ‘Research proposals’ (Michael Gillings, 1 day, Macquarie University)	2010
	Responsible Service of Alcohol (1 day)	2010
	Short postgraduate research courses: ‘Transition from PhD to research career’ (Michelle Leishman, 1 day, Macquarie University)	2009
	Short postgraduate research courses: ‘Writing for journals and citation metrics’ (Michael Gillings, 1 day, Macquarie University)	2009
	‘Fresh Science: Media skills for scientists and others involved in science’ (1 week, EcoConnect Communication)	2008
	Australian postgraduate one-day course in current ecology and evolution (1 day, USyd)	2008
	Short postgraduate research courses: ‘Toughness, elasticity and breakage of biological materials’ (Josh Madin, 1 day, Macquarie University)	2008

	Short postgraduate research courses: ‘Constructing and working with models’ (Hanna Kokko, 1 day, Macquarie University)	2008
	Member Leichhardt Toastmasters club (3 yr)	2007
	Australian postgraduate one-day course in current ecology and evolution (UQ)	2005
	Australian postgraduate one-day course in current ecology and evolution (JCU)	2002
	Algorithms and Data Structures (2nd year computing science, 14 weeks, Macquarie University); placed 3/500	2002
	St Johns Remote First Aid	2002
	Australian postgraduate one-day course in current ecology and evolution (UoW)	2001
Service	Member expert panel for review ‘Making the most of data resources’, being organised by the Ecosystem Science Council of Australia	2015-curr
	Jointly developed landing and orientation protocols for new ECRs in Biology (Macquarie University)	2015
	Host and organiser for visiting speakers (Prof David Christian	2015
	Opponent for PhD defence of Dr Karin Olsson, at the Danish Technical University (fisheries department)	2015
	Member of management committee for the data-sharing platform ‘coraltrait.org’	2014-curr
	Joint founder and member post-doctoral researcher committee (Macquarie University)	2014-2015
	Organised Q&A panel session on ‘How to land a faculty job’ for ECRs	2014
	Contributed to review of post-doctoral experiences within the Department of Biological Sciences	2014
	Chair of Genes-to-Geosciences-Fund committee (Macquarie University)	2012-curr
	Founder and leader of data-sharing platform ‘Biomass and Allometry Database for woody plants’.	2012-curr
	Member Quantitative Advice Committee, Biological Sciences (Macquarie University)	2011-curr
Member of	Royal Society of NSW, Australian Ecological Society, British Ecological Society, Software Carpentry, Data Science Sydney, Sydney Users of R Forum	