

Courtney E Company

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EDUCATION	Doctor of Philosophy Western Sydney University, Richmond, NSW, Australia Thesis: 'Resource allocation in <i>Eucalyptus</i> '	2016
	Master of Sciences—Ecology Appalachian State University, Boone, NC, USA Thesis: 'Total soil respiration and soil heterogeneity following fire in the Linville Gorge Wilderness Area'	2006
	Bachelor of Sciences—Biological Sciences North Carolina State University, Raleigh, NC, USA	2002
CURRENT EMPLOYMENT	Colgate University—Department of Biology Post Doctoral Fellow Research and teaching post-doctoral position in plant ecology and ecophysiology. The research component is part of a national science foundation grant focused on exploring comparative evolutionary ecophysiology of tropical ferns. Currently investigating the key functional traits that led to the radiation of tropical ferns from terrestrial to epiphytic niches in both the sporophyte and gametophyte generations. The teaching component consists of both foundation level biology and advanced elective ecology courses.	07/2017-present
RECENT PROFESSIONAL HISTORY	Western Sydney University—Hawkesbury Institute for the Environment Research Fellow Lead field researcher on a joint industry partnership with Horticulture Innovation Australia to evaluate root to shoot balance in trees produced for urban landscape use. Assessed morphological variables of over 13,000 nursery grown trees across Australia to fill knowledge gaps related to how species, container size, fertilization, irrigation and climate impact tree growth and balance. Data are currently being utilized to assess current quality standards for landscape trees aimed at significantly increasing urban greenspaces in Australia by 2020.	01/2016-06/2017
	Western Sydney University—Hawkesbury Institute for the Environment PhD Student Postgraduate research which focuses on investigating resource and carbon allocation in Eucalypts. Focused on integrating the effects of climate change, source-sink regulation and within canopy variation on ecophysiological processes. Tested the ability to scale leaf-level carbon gain to whole plant production, while also developing our understanding of how carbon is allocated among plant tissues. Generated empirical data on multiple scales that can be used to test theoretical assumptions of leaf physiological behaviour and validate process based models of tree and forest growth.	09/2012-08/2016
GRANTS & FELLOWSHIPS	Faculty Research Council grant to investigate the physiological and ecological processes that explain the decline of endangered cycads. Colgate University (\$1500).	2017
	Scholarship to attend Stable Isotopes in Biosphere System workshop Center for Water, Carbon and Food, University of Sydney	2013
	Hawkesbury Institute for the Environment Postgraduate Research Award	2012-2015
	Sigma Xi Outstanding Graduate Research Award	2007

PAST PROFESSIONAL HISTORY	<p>University of Idaho—College of Natural Resources Research Scientist Synthesis research position at the conclusion of the Aspen Free-Air CO₂ Enrichment (Aspen FACE) experiment to analyze the impacts of elevated CO₂ and ozone on ecosystem scale nutrient cycling.</p>	09/2010-08/2012
	<p>University of Nevada, Reno—College of Agriculture and Natural Resources Rangeland Ecologist Coordinator for an ecosystem scale belowground harvest of the Aspen FACE experiment to measure the effects of elevated CO₂ and ozone on root production and soil carbon storage.</p>	03/2009-08/2010
	<p>Oak Ridge National Laboratory—Environmental Sciences Division Post-Master Research Associate Research scientist for ORNL FACE experiment investigating the effects of CO₂ on established Sweetgum forest stands.</p>	06/2008-02/2009
	<p>University of Tennessee—Department of Ecology and Evolutionary Biology Research Coordinator Laboratory manager and research scientist for the Old-Field Community Climate and Atmospheric Manipulation (OCCAM) project.</p>	11/2006-06/2008
TEACHING	<p>Colgate University—Department of Biology Currently teaching an upper level ecosystem ecology class concentrating on the interactions between terrestrial organisms and their environment and the role this plays in ecosystem structure and function. Previously taught Evolution, Ecology and Diversity laboratory focusing on the evolutionary biology of organisms and the ecological processes that influence the distribution and abundance of plants and animals. Scheduled to teach Evolution, Ecology and Diversity lecture in Fall 2018.</p>	Fall 2017-Spring 2018
	<p>Western Sydney University—Hawkesbury Institute for the Environment Carbon Accounting Practical Instructor Combined field and laboratory practical introducing students to the scientific measurements necessary to construct ecosystem scale carbon budgets. Includes sampling and processing of plant and soil components and techniques of measuring tree allometry at forestry plantation and flux tower experimental sites.</p>	2015-2017
	<p>Appalachian State University—Department of Biology Biology Lab Instructor (General and Advanced) Taught weekly biology labs related to water quality, evolution, life form classification and basic processes in both plant and animals. Focused lesson plans on cellular osmosis, plant identification with dichotomous keys, microscopic exploration of plant tissues and water quality in urban environments. .</p>	08/2003-05/2006
PUBLICATIONS	<p>Mahmud K, Medlyn B, Duursma R, Company C and De Kauwe M. 2018. Inferring the effects of sink strength on plant carbon balance processes from experimental measurements . Bio-geosciences. In Review.</p>	
	<p>Company C, Medlyn B and Duursma R. 2017. Reduced growth due to sink limitation is not fully explained by reduced photosynthesis. <i>Tree Physiology</i> 37: 1042–1054 .</p>	
	<p>Company C, von Caemmerer S, Medlyn B, Tjoelker M and Duursma R. 2016. Coupled response of stomatal and mesophyll conductance to light enhances photosynthesis of shade leaves under sunflecks. <i>Plant, Cell & Environment</i> 39(12): 2762-2773.</p>	

Aspinwall M, Drake H, **Company C**, Varhammar A, Ghannoum O, Tissue D, Reich P and Tjoelker M. 2016. Convergent acclimation of leaf photosynthesis and respiration to prevailing ambient temperatures under current and warmer climates in *Eucalyptus tereticornis*. *New Phytologist* 212(2): 354-367.

Talhelm A, Pregitzer K, Kubiske M, Zak D, **Company C**, Burton A, Dickson R, Hendrey G, Isebrands J, Lewin K, Nagy J and Karnosky D. 2014. Elevated carbon dioxide and ozone alter productivity and ecosystem carbon content in northern temperate forests. *Global Change Biology* 20: 2492-2504.

Classen A, Norby R, **Company C**, Sides K and Weltzin J. 2010. Climate change alters seedling emergence and establishment in an old-field ecosystem. *PLoS ONE* 5(10): e13476. doi:10.1371.

Kardol P, **Company C**, Souza L, Norby R, Weltzin J and Classen A. 2010. Climate change effects on plant biomass alter dominance patterns and community evenness in an experimental old-field ecosystem. *Global Change Biology* 16: 2676-2687.

Kardol P, Cregger M, **Company C** and Classen A. 2010. Changes in plant community composition affect multifactor climate change effects on soil ecosystem functioning. *Ecology* 91(3): 767-781.

INDUSTRY REPORTS

Tjoelker M, **Company C**, Duursma R, Pfautsch S, Aspinwall M, Thompson D. 2017. Insights into standards for nursery-grown tree stock. *Proceedings of the 18th National Street Tree Symposium*, pages 55-60. 7-8 September 2017, Adelaide, South Australia.

Tjoelker M, **Company C**, Duursma R, Pfautsch S, Aspinwall M, Thompson D. 2017. NY15001 Evaluation of nursery tree stock balance parameters. Western Sydney University. https://www.ngia.com.au/Story?Action=View&Story_id=2357

PRESENTATIONS

Company C. Using whole tree chambers to investigate processes that drive tree carbon uptake and allocation from the leaf to the whole tree. *Invited Seminar*, Hawkesbury Institute for the Environment. Richmond, NSW, Australia. 11/2016

Company C, Medlyn B, Tjoelker M, von Caemmerer S and Duursma R. Are whole canopies optimized for carbon gain? How wasteful water use in shade leaves of *Eucalyptus* trees constrain theoretical relationships of photosynthesis and resource distribution. Ecological Society of America, Baltimore, MD, USA 08/2015

Company C, Medlyn B and Duursma R. Effects of belowground space limitation on performance of *Eucalyptus* seedlings: Nutrient limitation or sink inhibition? Ecological Society of Australia, Alice Springs, NT, Australia 08/2014

Pregitzer K, **Company C**, and Talhem A. Fine root respiration: Importance for ecosystem carbon fluxes. 24th New Phytologist Symposium. St Hugh's College, University of Oxford, UK 04/2010

Company C, Norby R, and Classen A. Influence of climate change factors on emergence, growth and survivorship of woody seedling establishment in a constructed old-field community. Ecological Society of America, Milwaukee, WI, USA 08/2008

Company C, Norby R, Classen A, and Weltzin J. Interactive effects of atmospheric and climate change on aboveground production in a constructed old-field system. Ecological Society of America, San Jose, CA, USA 08/2007