John Ellis Drake

Assistant Professor
Physiological and Ecosystem Ecology
Sustainable Resources Management
SUNY-ESF
ResearcherID: N-8490-2014

310B Bray Hall
1 Forestry Drive, Syracuse NY, 13210
jedrake@esf.edu
(315) 470 - 6574 (office)

Education

Ph.D	**University of Illinois** (Urbana-Champaign, IL, USA) *Ecology, Evolution, and Conservation Biology* With Prof. Evan DeLucia Thesis: Environmental and developmental regulation of carbon cycling in a warm-temperate forest	2005-2010
B.S.	**Hope College** (Holland, MI, USA) *Biology* Research: (1) Molecular Phylogeny of the Bromelioideae, (2) Demographic analysis of a gap-pioneer neotropical tree (*Urera elata*)	2001-2005

Appointments

Assistant Professor	**State University of New York- College of Environmental Science and Forestry (SUNY-ESF)** Department of Forest and Natural Resources Management	2017-current
Research Fellow	**Hawkesbury Institute for the Environment** Western Sydney University (Richmond, NSW, AU) With Profs. Mark Tjoelker and Peter Reich Tree Physiology and Ecosystem Function	2012-2017
Postdoc	**Boston University** (Boston, MA, USA) With Prof. Adrien Finzi Root-soil interactions and forest biogeochemistry	2010-2012
Graduate student and lab manager	**University of Illinois** (Urbana-Champaign, IL, USA) With Prof. Evan DeLucia Manager, Stable Isotope Facility University Distinguished Fellow	2005-2010

Publication summary

Peer reviewed journal articles	55
Journal articles submitted or in-preparation	6
Presentations	52
Citations (Google Scholar, Sept 2022)	3838
h-index (Google Scholar, Sept 2022)	31 (Ph.D in 2010)
Published datasets	4

Grants

2020-2023 *Pushing the envelope: does range size limit eucalypt tolerance to warming?* Tjoelker M, R Gallagher, P Reich, **JE Drake**, K Crous. $423,000 AUD. Australian Research Council Discovery project.

2019-2021 *How will New York State forests respond to environmental change in the 21st century? Establishing a statewide network of tree health.* Stella J, **JE Drake**, M Dovciak. $30,000. USDA Forest Service McIntire-Stennis Research Program.

2019-2022 *Pathways to a Net-Zero Carbon Future: Landscape Design for Sustainability and Climate Change*. $600,000. Beier CM, **JE Drake**, A Ackerman, T Brown, R Germain, D Johnston, M King, R Malmsheimer, T Volk. SUNY-ESF Discovery Challenge.

2019-2022 *New York State Forest Carbon Assessment*. Beier CM, E Bevilacqua, **JE Drake**, RH Germain, RW Malmsheimer, B Salehi. $500,000. NYS Department of Environmental Conservation - Environmental Protection Fund.

2018-2022 *Environmental impacts of GE and conventionally produced American Chestnut.* William Powell, Thomas Horton, Dylan Parry, **JE Drake**, Colin Beier, Jason Holliday, Sara Fitzsimmons. $500,000. USDA- National Institute of Food and Agriculture – Biotechnology Risk Assessment Research Grants Program.

2018-2020 *Determining the role of climate warming as a potential driver of sugar maple decline*. **JE Drake** and Colin Beier. $59,699. USDA Forest Service McIntire-Stennis Research Program.

2014-2016 *Is physiological flexibility of forest trees constrained by home climate in a rapidly warming world?* Mark Tjoelker, Oula Ghannoum, **JE Drake**, David Tissue, and Peter Reich. $315,000 AUD. Australian Research Council Discovery project DP140103415.

2011-2015 *Partitioning CO_2 fluxes with isotopologue measurements and modeling to understand mechanisms of forest carbon sequestration*. Scott Saleska, Eric Davidson, Adrien Finzi, Rich Wehr, and Paul Moorcroft. I contributed to the proposal and research, but was not named on the grant. $1,040,000. US Department of Energy, Office of Biological and Environmental Research.

2011 *The stoichiometry of root exudation in New England forests: insights from a*

	theoretical model and field experiment. Bridget Darby and Adrien Finzi, Undergraduate Research Opportunities program at Boston University, $1500. I led the proposal, research, and mentoring of this undergraduate student, but was not named on the grant.
2009	Summer Research Grant, $1000, University of Illinois
2005-2008	University Distinguished Fellow, University of Illinois. $75,000 ($25k per year for three years, plus a full tuition waver). University-wide competitive fellowship, used as a recruiting tool to attract Ph.D students. Approximately 20 awards given across the graduate college, which has ~10,000 graduate students.
2006	Travel Grant, $500, University of Illinois

Mentoring Experience

SUNY-ESF, 2017-present.

Current students

- Co-supervisor of Tim Morris (PhD student with Dr. Melissa Fierke) on invasive species in emerald ash borer aftermath forests.
- Co-supervisor of Jordan Jessamy (MS student and NSF GRFP recipient with Dr. John Stella) on urban forest ecology and environmental justice

Alumni

- Co-supervisor of Garrett Evans (MS) with Dr. Julia Burton on American chestnut physiology and silviculture.
- Co-supervisor of Keenan Rivers (MS) with Dr. Julia Burton on American beech spatial ecology.
- Co-supervisor of Ry Patton (MS) with Dr. Diane Kiernan on the carbon consequences of forest management on SUNY-ESF properties.
- Primary supervisor of MS student Anuli Onwumelu on her project investigating the physiological impacts of genetic engineering of American Chestnut trees.
- Primary supervisor of MS student Arianna Wills on her project on climate warming and acid deposition legacy effects on sugar maples.

Ph.D program, Western Sydney University, 2015-2019
Co-supervisor of Mr. Dushan Kumarathunge on his project to reconcile the contrasting temperature sensitivities of growth and photosynthesis with mechanistic models. Mr. Kumarathunge is also advised by Profs. Belinda Medlyn and Mark Tjoelker. Dushan successfully defended his PhD in the Fall of 2019.

Hawkesbury Institute for the Environment paid internship, 2014-2015

Mentored undergraduate student intern Rory O'Grady on his project to measure the response of leaf starches and carbohydrates to long-term experimental warming. Mr. O'Grady's contribution was acknowledged in a 2016 article in *New Phytologist*. Mr. O'Grady is now working as a lab technician in a plant molecular biology lab at the Hawkesbury Institute for the Environment.

Hawkesbury Institute for the Environment technician, 2013-2016
Co-supervisor of Angelica Vårhammar as a full-time technical assistant. Ms Vårhammar's position was funded with our 2014-2016 Australian Research Council Discovery project grant. Ms Vårhammar and I co-lead the implementation of two glasshouse experiments as well as a whole-tree chamber experiment. Ms Vårhammar is leading the development of a manuscript for submission to *New Phytologist*.

Boston University Undergraduate, 2011-2012
Supervisor of undergraduate student Bridget Darby on a project linking a mechanistic model of root exudation with a novel field experiment with root simulators. Ms. Darby contributed to a 2013 *Biogeosciences* paper and earned her place as second author. Ms. Darby went on to a position as a Ph.D candidate at Cornell University.

University of Illinois Undergraduate, 2009-2010
Co-supervisor of undergraduate student Caitlin Krause on a project regarding the effects of experimental warming on the community metabolism of soil microbes in a soybean field. Ms. Krause went on to become a medical student at the University of Iowa.

Teaching Experience

2020-	Tree Structure and Function (FOR 313: 3 credits), SUNY-ESF. Required course for Forest Resource Management students on the fundamental biology of tree structure and function. This course prepares students to understand how and why trees are managed to provide a wide range of forest ecosystem outputs and outcomes. Approximately 20 students. Taught annually.
2018-	Plant Physiology (EFB 530: 3 credits), SUNY-ESF. Course for advanced undergrads and beginning graduate students covering all aspects of plant physiology. There is also an optional associated lab (EFB 796: 1 credit). Approximately 20 students. Taught annually.
2018-	Natural Resources Ecology (FOR 232: 3 credits), SUNY-ESF. Required course for Forest Resource Management and Natural Resource Management majors covering the ecological underpinnings of natural resources. Includes four field labs. Approximately 60 students. Taught annually.
2018-	The Ecophysiology of Trees and Forests (FOR 796: 3 credits), SUNY-ESF. Advanced course for graduate students covering the links between the ecology and physiology of plants in a variable environment, with a focus on trees and their unique adaptations and challenges. Approximately 10 students. Taught every-other year.
2013-2017	Climate Change Science, Western Sydney University. Upper level elective course for majors and non-majors with ~20 students. I contributed to this course for three years.

2013-2015	Plant Physiology, Western Sydney University. Upper level course for majors with ~80 students. I contributed to this course for two years. Lead three lectures and two lab practicals on two campuses
2012-2015	Data Analysis and Visualization in R, Western Sydney University. Week-long workshop with ~20 students, held twice annually. Assisted lead instructor, Remko Duursma.
2009	Teaching Assistant, IB-202 Structure and Function, University of Illinois
2008	Teaching Assistant, IB-203 Ecology, University of Illinois
2003	Teaching Assistant, Hope College

Outreach and non-traditional media

I use press-releases and social media engagement in an attempt to engage a broad audience with my scientific work.

Media for Drake *et al.* (2018) *New Phytologist*.

Stories by The Guardian: (https://www.theguardian.com/science/2018/jan/31/australian-trees-sweat-to-survive-extreme-heatwaves-researchers-reveal)
Scientific American: (https://www.scientificamerican.com/article/trees-sweat-to-keep-cool/)
Also covered by >20 other outlets.

Video story of whole-tree chamber research (2016).

Story:
http://www.westernsydney.edu.au/newscentre/news_centre/more_news_stories/unique_tree_chambers_allowing_scientists_to_bring_the_heat
Youtube link:
https://www.youtube.com/watch?v=vC5y8XehfYI

Media for Drake *et al.* (2016) *New Phytologist*.

Story released in *Australasian Science* and the Western Sydney Newsroom (http://bit.ly/2aQ057r; http://www.australasianscience.com.au/article/issue-september-2016/can-trees-cope-third-degree.html)

Media for Drake *et al.* (2015) *Global Change Biology*.

National radio interviews for ABC Rural's *Country Hour* and 2SER Radio's *The Wire*. Science Alert Facebook post received 3000 "likes" and 270 "shares". Western Sydney press release was reposted on news websites including abc.net.au, phys.org, and photosynthesis.org.au.

Participating in Kathy Drayton's documentary "The Weather Diaries", which uses immersive filming to document how weather and climate impact the lives of people in Western Sydney. Kathy submitted her documentary to festivals in 2017 and 2018.

Peer-reviewed Journal Articles (* denotes supervised or co-supervised student). Citation count from Google Scholar

Article	Journal quality	Citations
(56) Beslity J, SB Shaw, **JE Drake**, J Fridley, JC Stella, J Stark, K Singh (2022). A low cost, low power sap flux device for distributed and intensive monitoring of tree transpiration, *HardwareX*, 2022, e00351, ISSN 2468-0672, https://doi.org/10.1016/j.ohx.2022.e00351. (https://www.sciencedirect.com/science/article/pii/S2468067222000967)	IF = 3.0	NA
(55) *Patton R, D Kiernan, J Burton, **JE Drake** (2022). Management trade-offs between forest carbon stocks, sequestration rates, and structural complexity in the Central Adirondacks. *Forest Ecology and Management*. https://doi.org/10.1016/j.foreco.2022.120539	IF = 4.4	NA
(54) *Wills A, C Beier, G Lawrence, **JE Drake** (*accepted*). Foliar chemical composition and respiration rates of sugar maple (*Acer saccharum*) and American beech (*Fagus grandifolia*) trees across a gradient of soil acidification. *Biogeochemistry*	IF = 4.0	NA
(53) Bruhn D, FR Newman, M Hancock, P Povlsen, M Slot, S Sitch, **JE Drake**, GP Weedon, DB Clark, M Pagter, RJ Ellis, MG Tjoelker, KM Andersen, ZR Correa, LM Mercado (2022). Nocturnal plant respiration is under strong non-temperature control. *Nature Communications*, **13**, 5650. https://doi.org/10.1038/s41467-022-33370-1.	IF = 14.9	NA
(52) Williams J, JC Stella, SL Voelker, AM Lambert, L Pelletier, **JE Drake**, JM Friedman, DA Roberts, MB Singer (2022). Local groundwater decline mediates response of dryland riparian woodlands to climatic drought. *Global Change Biology*. https://doi.org/10.1111/gcb.16376	IF = 10.8	NA
(51) Hecking MJ, JM Zukswert, **JE Drake**, M Dovciak, JI Burton (2022). Montane temperate-boreal forests retain the leaf economic spectrum despite intraspecific variability. *Frontiers in Forests and Global Change*, **4**. http://doi.org/10.3389/ffgc.2021.754063	IF = 4.3	1
(50) *Onwumelu A, WA Powell, AE Newhouse, *G Evans, *G Hilles, DF Matthews, V Coffey, **JE Drake** (2022).	IF = 2.3	1

Oxalate oxidase transgene expression in American chestnut leaves has little effect on photosynthetic or respiratory physiology. *New Forests* https://doi.org/10.1007/s11056-022-09909-x		
(49) Renchon AA, **JE Drake**, CA Macdonald, D Sihi, N Hinko-Najera, MG Tjoelker, SK Arndt, NJ Noh, E Davidson, E Pendall (2021). Concurrent measurements of soil and ecosystem respiration in a mature eucalypt woodland: advantages, lessons, and questions. *Journal of Geophysical Research: Biogeosciences* 126 (3), e2020JG006221	IF = 3.4	2
(48) Griffin-Nolan RJ, N Mohanbabu, S Araldi-Brondolo, AR Ebert, J LeVonne, JI Lumbsden-Pinto, H Roden, JR Stark, J Tourville, KM Becklin, **JE Drake**, DA Frank, LJ Lamit, JD Fridley (2021). Friend or foe? The role of biotic agents in drought-induced plant mortality. *Plant Ecology* (222) 537-548.	IF = 1.8	1
(47) Gimeno TE, CE Campany, **JE Drake**, CVM Barton, MG Tjoelker, N Ubierna, JD Marshall (2021). Whole-tree mesophyll conductance reconciles isotopic and gas-exchange estimates of water-use efficiency. *New Phytologist* (5), 2535-2547. https://doi.org/10.1111/nph.17088.	IF = 8.0 Rank = 3/223 Environ.	2
(46) Bond-Lamberty B, DS Christianson, A Malhotra, SC Pennington, D Sihi, A AghaKouchak, H Anjileli, MA Arain, JJ Armesto, S Ashraf, M Ataka, D Baldocchi, TA Black, N Buchmann, MS Carbone, SC Chang, P Crill, P Curtis, EA Davidson, AR Desai, **JE Drake**, TS El-Madany, M Gavazzi, CM Görres, CM Gough, M Goulden, J Gregg, O Gutiérrez del Arroyo, JS He, T Hirano, A Hopple, H Hughes, J Järveoja, R Jassal, J Jian, H Kan, J Kaye, Y Kominami, N Liang, D Lipson, C Macdonald, K Maseyk, K Mathes, M Mauritz, MA Mayes, S McNulty, G Miao, M Migliavacca, S Miller, JG Nietz, MB Nilsson, A Noormets, H Norouzi, CS O'Connell, B Osborne, C Oyonarte, Z Pang, M Peichl, E Pendall, JF Perez-Quezada, CL Phillips, RP Phillips, JW Raich, AA Renchon, NK Ruehr, EP Sanchez-Canete, M Saunders, KE Savage, M Schrumpf, RL Scott, U Seibt, WL Silver, T Sun, W Sun, D Szutu, K Takagi, M Takagi, M Teramoto, MG Tjoelker, S Trumbore, M Ueyama, R Vargas, RK Varner, J Verfaillie, C Vogel, J Wang, G Winston, T Wood, J Wu, T Wutzler, J Zeng, T Zha, Q Zhang, J Zou. (2020). COSORE: A community database for continuous soil	IF = 6.9 Rank = 6/204 Plant Science	35

respiration and other soil-atmosphere greenhouse gas flux data. *Global Change Biology* 26 (12), 7268-7283.		
(45) Piñeiro J, R Ochoa-Hueso, **JE Drake**, M Tjoelker, S Power (2020). Water availability drives fine root dynamics in a *Eucalyptus* woodland under elevated atmospheric CO_2 concentration. *Functional Ecology*. 34 (11), 2389-2402	IF = 5.0	6
(44) **Drake JE**, Harwood R, Vårhammar A, Barbour MM, Reich PB, Barton CVM, Tjoelker MG. No evidence of homeostatic regulation of leaf temperature in *Eucalyptus parramattensis* trees: integration of CO_2 flux and oxygen isotope methodologies (2020). *New Phytologist* 228 (5), 1511-1523. https://doi-org.esf.idm.oclc.org/10.1111/nph.16733.	IF = 8.0 Rank = 3/223 Environ. Sciences	7
(43) Jiang M, BE Medlyn, **JE Drake**, RA Duursma, IC Anderson, CVM Barton, MM Boer, Y Carrillo, L Castaneda-Gomez, L Collins, KY Crous, MG De Kauwe, BM dos Santos, KM Emmerson, SL Facey, AN Eherlenda, TE Gimeno, S Hasegawa, SN Johnson, A Kannaste, CA Macdonald, K Mahmud, BD Moore, L Nazaries, EHJ Neilson, UN Nielsen, U Niinemets, NJ Noh, R Ochoa-Hueso, VS Pathare, E Pendall, J Pihlblad, J Pineiro, JR Powell, SA Power, PB Reich, AA Renchon, M Riegler R Rinnan, PD Rymer, RL Salomon, BK Singh, B Smith, MG Tjoelker, JKM Walker, A Wujeska-Klause, J Yang, S Zaehle, DS Ellsworth (2020). The Fate of Carbon in a Mature Forest under Carbon Dioxide Enrichment. *Nature* 580, no. 7802: 227–31. https://doi.org/10.1038/s41586-020-2128-9.	IF 43.1 Rank = 1/67 Multidisc. Sciences	178
(42) *Dhami N, **JE Drake**, MG Tjoelker, DT Tissue, CI Cazzonelli (2020). An extreme heatwave enhanced the xanthophyll de-epoxidation state in leaves from Eucalyptus trees grown in the field. *Physiology and Molecular Biology of Plants* https://doi.org/10.1007/s12298-019-00729-6	IF = 1.5 Rank=107/228 Plant Science	8
(41) *Kumarathunge DP, **JE Drake**, MG Tjoelker, R López, S Pfautsch, A Vårhammar, BE Medlyn (2020). The temperature optima for tree seedling photosynthesis and growth depend on water inputs. *Global Change Biology* 26 (4), 2544-2560. https://doi.org/10.1111/gcb.14975	IF = 8.9 Rank = 3/223 Environ. Sciences	33
(40) Furze ME, **JE Drake**, J Wiesenbauer, A Richter, E Pendall (2019). Carbon isotopic tracing of sugars throughout whole-trees exposed to climate warming. *by*	IF = 6.9 Rank = 6/204	4

Plant, Cell & Environment https://doi.org/10.1111/pce.13625	Plant Science	
(39) *Kumarathunge DP, BE Medlyn, **JE Drake**, A Rogers, MG Tjoelker (2019). No evidence for triose phosphate limitation of light saturated leaf photosynthesis under current atmospheric CO_2 concentration. *Plant, Cell & Environment* https://doi.org/10.1111/pce.13639	IF = 6.9 Rank = 6/204 Plant Science	17
(38) Aspinwall M, S Pfautsch, MG Tjoelker, A Vårhammar, M Possell, **JE Drake**, PB Reich, DT Tissue, OK Atkin, PD Rymer, S Dennison, SC Van Sluyter (2019). Range size and growth temperature influence *Eucalyptus* species responses to an experimental heatwave. *Global Change Biology* 25: 1665-1684.	IF = 8.9 Rank = 3/223 Environ. Sciences	38
(37) Blackman C, D Creek, C Maier, M Aspinwall, **JE Drake**, S Pfautsch, A O'Grady, S Delzon, B Medlyn, D Tissue, B Choat (2019). Drought strategies and hydraulic traits contribute to mechanistic understanding of plant dry-down to hydraulic failure. *Tree Physiology* 39: 910-924.	IF = 3.4 Rank 3/66 Forestry	83
(36) De Kauwe MG, BE Medlyn, AJ Pitman, **JE Drake**, A Ukkola, A Griebel, E Pendall, S Prober, M Roderick (2019). Examining the evidence for decoupling between photosynthesis and transpiration during heat extremes. *Biogeosciences* 16: 903-916.	IF = 3.4 Rank 32/190 Geosciences Multidisc.	42
(35) **Drake JE**, M Furze, MG Tjoelker, CVM Barton, E Pendall (2019) Climate warming and tree carbon use efficiency in a whole-tree $^{13}CO_2$ tracer study. *New Phytologist* 222: 1313-1324.	IF = 8.0 Rank = 3/223 Environ. Sciences	24
(34) **Drake JE**, MG Tjoelker, MJ Aspinwall, PB Reich, S Pfautsch, CVM Barton (2019) The partitioning of gross primary production for young *Eucalyptus tereticornis* trees under experimental warming and altered water availability. *New Phytologist* 222: 1298-1312.	IF = 8.0 Rank = 3/223 Environ. Sciences	25
(33) *Kumarathunge D, BE Medlyn, **JE Drake**, MG Tjoelker, MJ Aspinwall, M Battaglia, FJ Cano1, K Carter, MA Cavaleri, L Cernusak, JQ Chambers, KY Crous, MG. De Kauwe, DN Dillaway, E Dreyer, DS Ellsworth, O Ghannoum, Q Han, K Hikosaka, AM Jensen, JWG Kelly, YS Lin, AC Mau, LM Mercado, Y Onoda, A Rogers, M Slot, NG Smith, L Tarvainen, HF Togashi, ES Tribuzy, J Uddling, A Vårhammar (2019). Acclimation and adaptation components of the temperature dependence of woody plant photosynthesis at the global scale. *New Phytologist* 222: 768-784.	IF = 8.0 Rank = 3/223 Environ. Sciences	143

(32) Way DA, MJ Aspinwall, **JE Drake**, KY Crous, C Campany, O Ghannoum, D Tissue, MG Tjoelker (2019). Responses of respiration in the light to warming in field-grown trees: A comparison of the thermal sensitivity of the Kok and Laisk methods. *New Phytologist* 222: 132-143.	IF = 8.0 Rank = 3/223 Environ. Sciences	20
(31) Fry EL, De Long JR, Garrido LA, Alvarez N, Carrillo Y, Castañeda-Gómez L, Chomel M, Dondini M, **Drake JE**, Hasegawa S, Hortal S, Jackson BG, Jiang M, Lavallee JM, Medlyn BE, Rhymes J, Singh BK, Smith P, Anderson IC, Bardgett RD, Baggs EM and Johnson D (2019) Using plant, microbe and soil fauna traits to improve the predictive power of biogeochemical models. *Methods in Ecology and Evolution* 10: 146-157.	IF = 6.36	35
(30) Crous KY, **JE Drake**, MJ Aspinwall, RE Sharwood, MG Tjoelker, O Ghannoum (2018) Photosynthetic capacity and leaf nitrogen decline along a controlled climate gradient in provenances of two widely distributed *Eucalyptus* species. *Global Change Biology* 24: 4626-4644	IF = 8.9 Rank = 3/223 Environ. Sciences	43
(29) Aspinwall MJ, CJ Blackman, VR de Dios, FA Busch, PD Rymer, ME Loik, **JE Drake**, S Pfautsch, RA Smith, MG Tjoelker, DT Tissue (2018) Photosynthesis and carbon allocation are both important predictors of genotype productivity to elevated CO_2 in *Eucalyptus camaldulensis*. *Tree Physiology* 38: 1286-1301.	IF = 3.653	20
(28) **Drake JE**, CA Macdonald, MG Tjoelker, PB Reich, BK Singh, I Anderson, D Ellsworth (2018) Three years of soil respiration in a mature Eucalypt woodland exposed to atmospheric CO_2 enrichment. *Biogeochemistry* 139: 85-101.	IF = 3.428	15
(27) Zhang C-J, M Delgado-Baquerizo, **JE Drake**, PB Reich, MG Tjoelker, DT Tissue, He J-Z, BK Singh (2018). Intra-species variation in a widely distributed tree species regulates the responses of soil microbiome to different temperature regimes. *Environmental Microbiology Reports* 10: 167-178.	IF = 3.363 Rank = 43/125 Microbiology	7
(26) **Drake JE,** MG Tjoelker, A Vårhammar, BE Medlyn, PB Reich, A Leigh, S Pfautsch, CJ Blackman, R López, MJ Aspinwall, KY Crous, RA Duursma, *D Kumarathunge, MG De Kauwe, M Jiang, AB Nicotra, DT Tissue, B Choat, OK Atkin, CVM Barton (2018).	IF = 8.0 Rank = 3/223 Environ.	167

Trees Tolerate an Extreme Heatwave via Increased Transpirational Cooling and Thermal Tolerance. *Global Change Biology* 24:2390-2402.	Sciences	
(25) Pfautsch S, MJ Aspinwall**, JE Drake**, LC Doria, RJA Langelaan, DT Tissue, MG Tjoelker, F Lens (2018) Traits and trade-offs in whole-tree hydraulic architecture along the vertical axis of *Eucalyptus grandis*. *Annals of Botany* 121: 129-141	IF = 4.0 Rank = 20/209 in Plant Sciences	37
(24) Tjoelker MG, BE Medlyn, **JE Drake** (2017). Climate suitability of diverse provenances of a widely-distributed eucalypt: Testing the 'local is best' paradigm under climate warming. *Australasian Plant Conservation*. 26:1	Conservation Bulletin	1
(23) **Drake JE**, SA Power, RA Duursma, BE Medlyn, MJ Aspinwall, B Choat, D Creek, D Eamus, C Maier, S Pfautsch, RA Smith, MG Tjoelker, DT Tissue (2017) Stomatal and non-stomatal limitations of photosynthesis for four tree species under drought: a comparison of model formulations. *Agricultural and Forest Meteorology* 247:454-466.	IF = 3.7 Rank = 1/65 in Forestry	93
(22) **Drake JE**, Vårhammar A, *Kumarathunge D, Medlyn BE, Pfautsch S, Reich PB, MG Tjoelker (2017) A common thermal niche among geographically diverse populations of the widely distributed tree species *Eucalyptus tereticornis*: no evidence for adaptation to local climate of origin. *Global Change Biology* 23:5069-5082.	IF = 8.0 Rank = 3/223 Environ. Sciences	40
(21) Ellsworth DS, IC Anderson, KY Crous, J Cooke, **JE Drake**, AN Gherlenda, TE Gimeno, CA Macdonald, BE Medlyn, JR Powell, MG Tjoelker, PB Reich (2017) Elevated CO_2 does not increase eucalypt forest productivity on a low-phosphorus soil. *Nature Climate Change*. doi:10.1038/nclimate3235	IF = 14.5 Rank = 2/223 Environ. Sciences	185
(20) Ochoa-Hueso R, M Delgado-Baquerizo, J Hughes, **JE Drake**, MG Tjoelker, J Piñeiro, SA Power (2017) Rhizosphere-driven increase in phosphorus availability under elevated atmospheric CO_2 in a mature *Eucalyptus* woodland. *Plant and Soil* 416:283-295. doi:10.1007/s11104-017-3212-2	IF = 2.969 Rank = 5/34 Soil Science	38
(19) Aspinwall MJ, **JE Drake**, A Vårhammar, CVM Barton, C Campany, O Ghannoum, DT Tissue, PB Reich, MG Tjoelker (2016) Convergent acclimation of leaf photosynthesis and respiration to prevailing ambient	IF = 7.7 Rank = 6/204 Plant Sciences	81

temperatures across current and warmer climates in *Eucalyptus tereticornis*. *New Phytologist* 212:354-367		
(18) Medlyn B, M De Kauwe, S Zaehle, A Walker, R Duursma, K Luus, M Mishurov, B Park, B Smith, YP Wang, X Yang, K Crous, **JE Drake**, C Macdonald, R Norby, S Power, M Tjoelker, DS Ellsworth (2016) Using models to guide field experiments: a priori predictions for the CO_2 response of a nutrient- and water-limited native Eucalypt woodland. *Global Change Biology* 22:2834-2851	IF = 8.0 Rank = 3/223 Environ. Sciences	80
(17) **Drake JE,** MG Tjoelker, MJ Aspinwall, PB Reich, CVM Barton, BE Medlyn, R Duursma (2016) Does physiological acclimation to climate warming stabilize the ratio of canopy respiration to photosynthesis? *New Phytologist* 211:850-863	IF = 7.7 Rank = 6/204 Plant Sciences	79
(16) **Drake JE,** CA Macdonald, MG Tjoelker, KY Crous, BK Singh, PB Reich, IC Anderson, DS Ellsworth (2016) Short-term carbon cycling responses of a mature eucalypt woodland to gradual stepwise enrichment of atmospheric CO_2 concentration? *Global Change Biology* 22:380-390	IF = 8.0 Rank = 3/223 Environ. Sciences	56
(15) Lin YS, BE Medlyn, RA Duursma, CI Prentice, OK Atkin, CVM Barton, J Bennie, A Bosc, MSJ Broadmeadow, LA Cernusak, PD Angelis, **JE Drake**, D Eamus, DS Ellsworth, M Freeman, O Ghannoum, TE Gimeno, Q Han, K Hikosaka, LB Hutley, JW Kelly, K Kikuzawa, P Kolari, K Koyama, J-M Limousin, M-L Linderson, M Löw, C Macinins-Ng, NK Martin-StPaul, P Meir, TN Mikkelsen, P Mitchell, JB Nippert, Y Onoda, MO de Beeck, V Resco de Dios, A Rey, A Rogers, L Rowland, SA Setterfield, W Sun, L Tarvainen, S Tausz-Posch, DT Tissue, J Uddling, G Wallin, JM Warren, L Wingate, J Zaragoza-Castells (2015) Optimal stomatal behaviour around the world: synthesis of a global stomatal conductance database. *Nature Climate Change* 5:459-646.	IF = 14.5 Rank = 2/223 Environ. Sciences	335
(14) **Drake JE**, MJ Aspinwall, KY Crous, PB Reich, RA Smith, DT Tissue, MG Tjoelker (2015). The capacity to cope with climate warming declines from temperate to tropical latitudes in two widely distributed *Eucalyptus* species. *Global Change Biology* 21:459-472.	IF = 8.0 Rank = 3/223 Environ. Sciences	123
(13) Giasson M-A, AM Ellison, RD Bowden, PM Crill, EA Davidson, **JE Drake**, SD Frey, JL Hadley, M Lavine, JM Melillo, JW Munger, KJ Nadelhoffer, E Nicoll, SV Ollinger, KE Savage, PA Steudler, J Tang, RK Varner,	IF = 2.3 Rank = 64/145	90

SC Wofsy, DR Foster, AC Finzi (2013) Soil respiration in a northeastern US temperate forest: a 22-year synthesis. *Ecosphere* 4: article 140.	Ecology	
(12) Pfautsch S, MJ Aspinwall, **JE Drake**, B Choat, D Tissue, T Burykin, MG Tjoelker (2013) Putting the puzzle together: Investigating hydraulic functioning and water transport at high spatial resolution in tall trees, *Acta Horticulturae* 991:245-252.	NA	1
(11) **Drake JE**, M-A Giasson, K Spiller, AC Finzi (2013) Seasonal plasticity in the temperature sensitivity of microbial activity in three temperate forest soils. *Ecosphere* 4: article 77.	IF = 2.3 Rank = 64/145 Ecology	28
(10) **Drake JE**, BA Darby, M-A Giasson, MA Kramer, RP Phillips, AC Finzi (2013) Stoichiometry constrains microbial response to root exudation - insights from a model and a field experiment in a temperate forest. *Biogeosciences* 10:821-838.	IF = 3.9 Rank = 25/145 in Ecology	233
(9) Brzostek ER, A Greco, **JE Drake**, AC Finzi (2012) Root carbon inputs to the rhizosphere stimulate extracellular enzyme activity and N availability in temperate forest soils. *Biogeochemistry* 115:65-76.	IF = 3.4 Rank = 32/223 Environ. Sciences	197
(8) **Drake JE**, AC Oishi, M-A Giasson, R Oren, AC Finzi (2012) Trenching reduces soil heterotrophic activity in a loblolly pine (*Pinus taeda*) forest exposed to elevated atmospheric [CO_2] and N-fertilization. *Agricultural and Forest Meteorology* 165:43-52.	IF = 3.7 Rank = 1/65 in Forestry	35
(7) Templer P, AF Schiller, NW Fuller, AM Socci, JL Campbell, **JE Drake**, TH Kunz (2012) Impact of a Reduced Winter Snowpack on Litter Arthropod Abundance and Diversity in a Northern Hardwood Forest Ecosystem. *Biology and Fertility of Soils* 48:413-424.	IF = 3.4 Rank = 2/34 in Soil Science	54
(6) **Drake JE**, A Gallet-Budynek, KS Hofmockel, ES Bernhardt, SA Billings, RB Jackson, KS Johnsen, J Lichter, HR McCarthy, ML McCormack, DJP Moore, R Oren, S Palmroth, RP Phillips, JS Pippen, SG Pritchard, KK Treseder, WH Schlesinger, EH DeLucia, AC Finzi (2011) Increases in the Flux of Carbon Belowground Stimulate Nitrogen Uptake and Sustain the Long-Term Enhancement of Forest Productivity under Elevated CO_2. *Ecology Letters* 14: 349-357.	IF = 10.7 Rank = 2/145 in Ecology	409
(5) **Drake JE**, SC Davis, LM Raetz, EH DeLucia (2011) Mechanisms of age-related changes in forest production: the influence of physiological and successional changes.	IF = 8.0 Rank = 3/223	91

Global Change Biology 17: 1522-1535.	Environ. Sciences	
(4) **Drake JE**, LM Raetz, SC Davis, EH DeLucia (2010) Hydraulic limitation not declining nitrogen availability causes the age-related photosynthetic decline in loblolly pine (*Pinus taeda* L.). *Plant, Cell and Environment* 33: 1756-1766.	IF = 6.9 Rank = 6/204 Plant Science	79
(3) Peterson T, B Rossmann, **JE Drake**, J Westervelt (2009) A spatially explicit model of red imported fire ant behavior for managing species at risk on military lands. *US Army Corps of Engineers Research Laboratory*, CERL Report No. TR-09-19.	Not listed	2
(2) **Drake JE**, PC Stoy, RB Jackson EH DeLucia (2008) Fine-root respiration in a loblolly pine (*Pinus taeda* L.) forest exposed to elevated CO_2 and N fertilization. *Plant, Cell and Environment* 31:1663-1672.	IF = 6.9 Rank = 6/204 Plant Science	70
(1) DeLucia, EH, **JE Drake**, RB Thomas, M Gonzalez-Meler (2007) Forest carbon-use-efficiency: is respiration a constant fraction of gross primary production? *Global Change Biology* 13:1157-1167.	IF = 8.0 Rank = 3/223 Environ. Sciences	437

Published datasets and other products

(4) *Kumarathunge DP, BE Medlyn, **JE Drake**, MG Tjoelker, MJ Aspinwall, M Battaglia, … (2018) ACi-TGlob_V1. 0: a global dataset of photosynthetic CO_2 response curves of terrestrial plants. https://doi.org/10.6084/m9.figshare.7283567.v1.

(3) **Drake JE** (2017): v1.0.0 jedrake/wtc4_heatwave: Trees Tolerate an Extreme Heatwave via Sustained Transpirational Cooling and Increased Leaf Thermal Tolerance. DOI: 10.5281/zenodo.1118945.

(2) **Drake JE** (2016): Drake_NewPhyt_2016_WTC3_RtoGPP_forfigshare.zip. figshare. https://doi.org/10.6084/m9.figshare.3122104.v1 Retrieved: 23 44, Apr 25, 2017 (GMT). Whole canopy CO_2 and H_2O flux and related datasets. Used by Drake *et al.* (2016) *New Phytologist*.

(1) **Drake JE**, Varhammar A, Kumarathunge D, Medlyn B, Pfautsch S, Tjoelker MG (2016): Growth, leaf photosynthesis, leaf stem and root respiration, temperature, humidity, and photosynthetic photon flux density data for a glasshouse temperature experiment with *Eucalyptus tereticornis*. Western Sydney University. http://doi.org/10.4225/35/57e4bf22dd3ec. Dataset for Drake *et al.* (*in press*) *Global Change Biology*

Journal Articles in Preparation or Submitted for Publication

Kumarathunge, DP, K Mahmud, **JE Drake**, MG Tjoelker, FJ Cano, BE Medlyn (*Submitted to Global Change Biology, July 2022*). Which mechanisms determine the temperature response of tree seedling growth?

Drake JE, MG Tjoelker (*in prep*). Physiological acclimation modifies the metabolic scaling between autotrophic respiration and tree size.

Young, A.R., R. Minocha, S.L. Long, **JE Drake**, R.D. Yanai. (S*ubmitted to Tree Physiology, June 2022)*. Responses of physical, chemical, and metabolic leaf characteristics to depth within mature sugar maple crowns and to nitrogen and phosphorus addition.

Harwood, R., L.A. Cernusak, **JE Drake**, CV.M. Barton, M.G. Tjoelker, M.M. Barbour. (*Submitted to Tree Physiology, April 2021*). Isotopic steady state or non-steady state transpiration? Insights from whole tree chambers.

Pfautsch, S., **JE Drake**, M.J. Aspinwall, V. Resco de Dios, C.V.M. Barton, P. Meir, M.G. Tjoelker, D.T. Tissue, and M. Mencuccini. (*Submitted to Plant, Cell and Environment, June 2021*). Radially transmitted changes in hydraulic and osmotic pressures in xylem and bark help explain reversible and irreversible patterns of tree stem expansion.

Vårhammar A, **JE Drake**, MJ Aspinwall, MG Tjoelker (*in prep*) Pushing the envelope: Narrowly and widely distributed Eucalypts differ in response to climate warming

Honors and Awards

2011	**Elizabeth Sulzman Award** for best work done as a graduate student, 96th annual meeting of the Ecological Society of America. Austin, TX. $250, Biogeosciences section.
2010	**Billings Award** for the best student oral presentation at the 95th annual meeting of the Ecological Society of America. Pittsburgh, PA. $500, Physiological Ecology Section
2008, 2009	**Best Overall Oral Presentation**, Annual Ecology and Evolution Symposium, University of Illinois
2008, 2009	**Election to the list of teachers ranked excellent by their students**, University of Illinois, "outstanding" rating. Ranked in top 10% of teachers in the category "overall teaching effectiveness" by students.
2007	**Honorable Mention- Best Oral Presentation**, Annual Ecology and Evolution Symposium, University of Illinois
2007	**Election to *Phi Kappa Phi***, University of Illinois
2005	**Distinguished Fellowship**, University of Illinois
2005	***Summa Cum Laude***, 3.93 GPA, Hope College
2005	**Election to *Phi Beta Kappa***, Hope College Chapter
2005	**Senior Sigma Xi Research Award**, Hope College
2005	**Patterson Memorial Prize**, outstanding biology student, Hope College
2005	**De. Kruif Writing Prize**, best research paper in Biology, Hope College
2005	**National Dean's List**

2002 **Organic Chemistry Book Award**, Hope College
2001-2005 **Endowed Scholarship**, Hope College

Other appointments, professional service, and specialized training

2015- **Editorial Review Board**: *Biogeochemistry*
- Provide rapid manuscript reviews, particularly of "Biogeochemistry Letters". IF = 3.4, Rank = 32/223 in Environmental Sciences

2013-2018 **Associate Editor**: *Ecology and Evolution*
- Handle editing responsibilities of 5-10 articles a year, including selecting reviewers and making publication recommendations to the Editor-in-Chief. IF = 2.3, Rank = 63/145 in Ecology

2013-2016 **Social Media Editor**: *Tree Physiology*
- Post article summaries and links to Facebook, 3,618 "likes" as of May 2016.

2009- **Provided anonymous peer-reviews** of articles submitted to *Nature Climate Change, PNAS, Ecology Letters, New Phytologist, Ecology, Journal of Ecology, Biogeosciences, Functional Ecology, Plant Cell & Environment, Tree Physiology, Plant Ecology, Photosynthesis Research, Oecologia, Plant Biology, Fungal Ecology, Ecosphere, Soil Biology and Biochemistry,* and the *Journal of Geophysical Research- Biogeosciences*.

2008-2009 **Outreach Chairperson:** Graduate students in Ecology and Evolutionary Biology, University of Illinois

2008-2009 **Graduate representative**: Plant-Fungal genomics faculty search committee, University of Illinois

2007-2008 **Graduate representative:** Steering committee, Program of Ecology, Evolution, and Conservation, University of Illinois

2008-2010 **Lab Manager**: Stable Isotope Facility for Environmental Research, Evan DeLucia's lab, University of Illinois

2008 **Participant**: Practical Course in Elemental Analysis and Isotope-Ratio Mass Spectrometers, Isomass, University of Ottawa, Canada

2008 **Participant**: Stable Isotopes in Ecology Course, supervised by Jim Ehleringer, University of Utah

2003-2004 **Research Assistant:** National Science Foundation- Research Experiences for Undergraduates Program, Hope College

Presentations (* denotes supervised student)

(51) *Evans, G.R., J.I. Burton, W.A. Powell, and **J.E. Drake.** American chestnut seedlings are more responsive to light than oaks and hickories: an assessment of growth and photosynthetic traits. North American Forest Ecology Workshop (NAFEW)- Turning Ecological Answers into Forest Management Actions. June 23, 2022.

(50) *Evans, G.R., J.I. Burton, W.A. Powell, and **J.E. Drake.** American chestnut seedlings are more responsive to light than oaks and hickories: an assessment of growth and photosynthetic traits. Ecological Society of America- 2022 meeting in Montreal, CA. August, 2022.

(49) **Drake J.E., *A. Wills, C. Beier, and G. Lawrence. The legacy of acid rain in the Adirondacks strongly affected leaf chemical composition but not the respiratory physiology of sugar maple (*Acer saccharum*) and American beech (*Fagus grandifolia*) leaves. Ecological Society of America- 2022 meeting in Montreal, CA. August, 2022.

(48) *Wills A, Lawrence GB, Beier CM, **JE Drake** (2020) Physiological implications of acid mediated nutrient stress on sugar maple (*Acer saccharum*) in the Adirondack Mountains of New York. 105th annual meeting of the Ecological Society of America. Salt Lake City, UT. Held virtually given COVID-19 pandemic.

(47) *Patton R, Kiernan D, **JE Drake** (2020) Management history and carbon density in a central Adirondack Forest. 105th annual meeting of the Ecological Society of America. Salt Lake City, UT. Held virtually given COVID-19 pandemic.

(46) **Drake JE** and *A Onwumelu (2020) Physiological considerations of blight-resistant transgenic American chestnut trees. 105th annual meeting of the Ecological Society of America. Salt Lake City, UT. Held virtually given COVID-19 pandemic.

(45) *Wills A and **JE Drake** (2020) Does Nutrient Stress Impose an Extra Carbon Cost on Sugar Maple (Acer saccharum)? New York chapter of the Society of American Foresters meeting, Syracuse, NY.

(44) *Patton R, Kiernan D, **JE Drake** (2020) Historical Management Impacts on Forest Carbon Accumulation at Huntington Wildlife Forest. New York chapter of the Society of American Foresters meeting, Syracuse, NY.

(43) **Drake JE** (2019) An ecological perspective on climate change research in the 21st century. Invited talk at the Forest and Natural Resources Management Department's Collaborative Research Discussion series, SUNY-ESF.

(42) Pu G, JL Campbell, **JE Drake**, MB Green, RD Yanai. How to avoid errors in error propagation: Monte Carlo estimation of uncertainty in forest biomass and stream loads at the Hubbard Brook Experimental Forest. Poster presentation at the 2019 Ecological Society of America Meeting, Louisville, KY, USA.

(41) **Drake JE** (2019) Learning and leading with our land. Discovery Challenge presentation event, SUNY-ESF.

(40) **Drake JE** (2019) The gardener approach to scientific inquiry. Invited talk at the Art and Biology Mixer Event, Everson Museum of Art, Syracuse New York.

(39) Medlyn B, *D Kumarathunge, **JE Drake**, M Tjoelker (2019) Acclimation and adaptation of photosynthetic temperature responses. European Geophysical Union (EGU) General Assembly.

(38) Jiang M, B Medlyn, R Duursma, **JE Drake**, I Anderson, CVM Barton, MM Boer, Y Carillo, L Collins, K Crous, MG De Kauwe, S Facey, A Gherlenda, T Gimeno, LC Gomez, S Hasegawa, C MacDonald, K Mahmud, B Moore, RLS Moreno, L Nazaries, JP Nevado, U Nielsen, NJ Noh, V Pathare, E Pendall, J Powell, S Power, P Reich, M

Riegler, A Renchon, P Rymer, MG Tjoelker, A Wujeska-Klause, J Yang, S Zaehle, and D Ellsworth (2019). The fate of carbon in a mature eucalypt woodland under CO_2 enrichment and phosphorus limitation. Fall Meeting of the American Geophysical Union, Washington DC, USA.

(37) *Kumarathunge D, B Medlyn, **JE Drake**, M Tjoelker (2018). Acclimation and adaptation components of the temperature dependence of plant photosynthesis at the global scale ComBio2018, Sydney, Australia (poster).

(36) *Kumarathunge D, B Medlyn, **JE Drake**, M Tjoelker, Jinyang Yang (2018) Why is the temperature optimum for canopy photosynthesis lower than that for leaf photosynthesis? Ozflux-AsiaFlux Joint Conference, Darwin, Australia.

(35) Mahmud K, BE Medlyn, D Kumarathunge, **JE Drake**, MJ Aspinwall, MG Tjoelker (2018) Effects of climate warming on plant carbon balance processes- inference from data assimilation. Fall Meeting of the American Geophysical Union, Washington DC, USA.

(34) *Kumarathunge D, BE Medlyn, **JE Drake**, MG Tjoelker (2018) Improved representation of photosynthetic temperature acclimation and adaptation in global vegetation models. Fall Meeting of the American Geophysical Union, Washington DC, USA.

(33) *Onwumelu A and **JE Drake** (2018) Evaluation of photosynthetic and respiratory capacity of transgenic and wild type American chestnut plants growing in a high-light growth chamber. Spotlight on Research Poster Presentations, SUNY-ESF, Syracuse, New York.

(32) De Kauwe M, **JE Drake**, MG Tjoelker, BE Medlyn, A Pitman (2018). Are we underestimating the capacity of vegetation to moderate heat extremes? 8th GEWEX Open Science Conference: Extremes and Water on the Edge. Calmore, Alberta, Canada.

(31) Mahmud K, BE Medlyn, *D Kumarathunge, **JE Drake**, MJ Aspinwall, MG Tjoelker (2018). Effects of climate warming on plant carbon balance processes- inference from data assimilation. Fall Meeting of the American Geophysical Union.

(30) Pendall E, **JE Drake**, M Furze, CVM Barton, Y Carillo, A Richter, MG Tjoelker (2017) How does warming affect carbon allocation, respiration and residence time in trees? An isotope tracer approach in a eucalypt. Fall meeting of the American Geophysical Union, San Francisco, CA.

(29) *Kumarathunge D, B Medlyn, **JE Drake**, M Tjoelker. Improved representation of photosynthetic temperature acclimation and adaptation in Earth system models. (2017) 39th New Phytologist Symposium. Exeter. UK (poster)

(28) **Drake JE**, MG Tjoelker, PB Reich (2016) Size Matters — Physiological Temperature Acclimation and Metabolic Scaling of Respiration for *Eucalyptus* Trees in a Warmer World. Fall meeting of the American Geophysical Union, San Francisco, CA. Poster.

(27) Ghannoum O, KY Crous, **JE Drake**, MJ Aspinwall, MG Tjoelker (2015) Seasonal and thermal photosynthetic acclimation in *Eucalyptus tereticornis* under current and warmer climate. ComBIO meeting, Adelaide.

(26) **Drake JE,** MG Tjoelker, PB Reich, CVM Barton, R Duursma, MJ Aspinwall (2015) Enduring the hot and dry: carbon-use-efficiency of *Eucalyptus tereticornis* trees exposed to warming and drought. Ecological Society of Australia Conference, Melbourne.

(25) Vårhammar A, **JE Drake**, MJ Aspinwall, MG Tjoelker (2015) Pushing the envelope: Narrowly and widely distributed Eucalypts differ in response to climate warming. Ecological Society of Australia Conference, Melbourne.

(24) Aspinwall MJ, S Pfautsch, A Vårhammar, M Possell, **JE Drake**, PB Reich, MJ Tjoelker (2015) Tree responses to heatwaves: are species distribution and thermal acclimation important? ComBIO meeting, Adelaide.

(23) **Drake JE**, A Vårhammar, MJ Aspinwall, MG Tjoelker (2015) *Photosynthesis does and does not control growth*. Annual Science Meeting of the Hawkesbury Institute for the Environment.

(22) **Drake JE**, CA Macdonald (2015) Soil CO_2 efflux following atmospheric CO_2 enrichment in a Eucalypt woodland. EucFACE Research Symposium.

(21) **Drake JE**, MJ Aspinwall, MG Tjoelker, PB Reich, C Campany (2014) Too hot to handle? Physiological acclimation to warming in *Eucalyptus tereticornis*. Ecological Society of Australia Conference, Alice Springs. Invited oral presentation in the symposium "Thermal tolerance in a changing climate".

(20) **Drake JE**, CA Macdonald, S Hasegawa, S Power, MG Tjoelker, PB Reich (2013) Increased soil CO_2 efflux following atmospheric CO_2 enrichment in a Eucalypt woodland. Research symposium on the Eucalyptus Free-Air CO_2 Enrichment (EucFACE) experiment: 21 Nov 2013. Oral presentation.

(19) Macdonald CA, **JE Drake**, I Anderson, MG Tjoelker, PB Reich, B Singh (2013). Impact of eCO_2 on soil respiration and microbial biomass in a nutrient poor Eucalypt forest. New Horizons on CO_2 impacts, EcoTas13: 5th joint conference of New Zealand Ecological Society and Ecological Society of Australia. Oral presentation.

(18) Tjoelker MG, **JE Drake**, MJ Aspinwall, O Ghannoum, S Pfautsch, PD Rymer, KY Crous, DT Tissue, PB Reich (2013) Physiological flexibility to climate warming declines from temperate to tropics within widely distributed Eucalypts. EcoTas13: 5th joint conference of New Zealand Ecological Society and Ecological Society of Australia. Poster presentation.

(17) **Drake JE**, MJ Aspinwall, KY Crous, PB Reich, RA Smith, DT Tissue, MG Tjoelker (2013) Biogeography constrains acclimation to warming in two Australian Eucalypts: a climate shift experiment. 98th annual meeting of the Ecological Society of America. Minneapolis, MN. Also presented as an invited talk at the Sydney Ecophysiologists Group, Macquarie University.

(16) **Drake JE** (2013) Combining ecophysiology and ecosystem ecology to study the effects of global change on temperate forests. Invited talk at the Hawkesbury Institute for the Environment, Western Sydney University, Australia.

(15) **Drake JE**, MA Giasson, AC Finzi (2011) The stoichiometry of root exudation: Insights from a model and a field experiment in a temperate forest. Microbial Ecology meeting at Harvard Forest, Petersham, MA. Also presented as an invited talk at the fall meeting of the American Geophysical Union, San Francisco, CA.

(14) **Drake JE**, AC Finzi (2011) Seasonal variation in the temperature sensitivity of soil nitrogen transformations in New England forests. 96th annual meeting of the Ecological Society of

America. Austin, TX. Oral presentation.

(13) **Drake JE,** AC Finzi (2011) Priming of soil organic matter decomposition and nitrogen availability in temperate forests. Summit on rhizospheres and microbial acclimation, Boston University, Boston, MA. Also presented at Harvard University, Cambridge, MA. Oral presentation.

(12) **Drake JE**, EH DeLucia, AC Finzi (2010) Controls of temperate forest productivity: scaling from physiological mechanisms to ecosystem processes. Invited seminar at Boston University and Indiana University.

(11) **Drake JE**, EH DeLucia (2010) Physiological causes of the age-related decline in pine forest productivity. 95th annual meeting of the Ecological Society of America. Pittsburgh, PA. Oral presentation.

(10) **Drake JE**, AF Finzi, EH DeLucia (2009) Belowground carbon processes at the Duke Free Air CO_2 Enrichment (FACE) experiment: a synthesis. 94th annual meeting of the Ecological Society of America. Albuquerque, NM. Oral presentation.

(9) **Drake JE**, S Davis, LM Raetz, EH DeLucia (2009) Evidence for hydraulic limitation of photosynthesis in aging Loblolly pine (*Pinus taeda*) trees. 8rd annual symposium for graduate students in Ecology and Evolutionary Biology, University of Illinois.

(8) **Drake JE**, S Davis, LM Raetz, EH DeLucia (2008) Forest ecosystem structure and function across a 100-year chronosequence. 93rd annual meeting of the Ecological Society of America. Milwaukee, WI. Also presented at 7th annual symposium for graduate students in Ecology and Evolutionary Biology, University of Illinois.

(7) **Drake JE** and EH DeLucia (2007) Root respiration at Duke FACE: past and present. Conference on belowground carbon processes at the Duke FACE site. Durham, NC. Oral presentation.

(6) **Drake JE** and EH DeLucia (2007) Canopy photosynthesis drives diel patterns of fine root respiration in a loblolly pine (*Pinus taeda*) forest exposed to elevated CO_2 and nitrogen deposition. 92nd annual meeting of the Ecological Society of America. San Jose, CA. Oral presentation. Also presented at 6th annual symposium for graduate students in Ecology and Evolutionary Biology, University of Illinois.

(5) DeLucia, EH, **JE Drake**, RJ Norby (2006) Carbon Cycling and Trophic Dynamics in Forests Exposed Elevated CO_2. Keynote Presentation. Eastern CANUSA Forest Science Conference. Quebec City, Canada.

(4) DeLucia, EH, **JE Drake**, RB Thomas, M Gonzales-Meler (2006) Forest carbon-use-efficiency: is respiration a constant fraction of gross primary production? Poster Presentation. 91st annual meeting of the Ecological Society of America. Memphis, TN. Presented by JE Drake.

(3) **Drake, JE** (2005) The effect of mist frequency and elevation on epiphyll cover in a neotropical cloud forest: possible bioindicators of climate change. Bi-annual Conference on Tropical Ecology and Conservation. Council for International Education Exchange, Monteverde, Costa Rica

(2) **Drake, JE** (2004) Implications of increased recruitment on the population size of a

neotropical tree (*Urera elata*): a demographic analysis. Oral and Poster Presentation. PEW Undergraduate Research Conference, Chicago, IL

(1) **Drake, JE** (2003) Molecular Phylogeny of the Bromeliaceae sf. Bromelioideae. Poster Presentation. Conference of Undergraduate Research, *Hope College*, Holland, MI