

Morgan E. Furze

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EDUCATION

- 2013-2019 Ph.D. in Organismic and Evolutionary Biology, Harvard University, Dissertation title: Understanding whole-plant nonstructural carbohydrate storage in a changing world
- 2013-2017 A.M. in Organismic & Evolutionary Biology, Harvard University
- 2008-2012 B.A. in Biology, Bucknell University

APPOINTMENTS

- 2019-present Donnelly Postdoctoral Fellow, Brodersen lab, Yale Institute for Biospheric Studies and School of the Environment, Yale University

GRANTS

- 2016 Research in Residence Program, Hawkesbury Institute for the Environment
- 2015 Grand-in-Aid of Research, Sigma Xi
- 2015 Inter-university Training for Continental-scale Ecology Fellowship, NSF
- 2015 Graduate Research Opportunities Worldwide Fellowship, NSF
- 2015 ESS PI Meeting Student Travel Grant, DOE
- 2014-2017 Graduate Research Fellowship, NSF
- 2014-2017 Garden Club of New Jersey Scholarship

AWARDS

- 2019 Donnelly Postdoctoral Fellowship, Yale Institute for Biospheric Studies, Yale University
- 2019 Rising Star in Organismal Botany, Society for Integrative and Comparative Biology
- 2018 Distinction in Teaching for OEB 52 Biology of Plants, Harvard University
- 2017 Distinction in Teaching for OEB 10 Foundations of Biological Diversity, Harvard University
- 2012 Honor societies: Phi Beta Kappa, Mortar Board, Sigma Tau Delta, Phi Sigma Biological Society, Alpha Lambda Delta
- 2012 Elizabeth M. Oliphant Senior Prize, Bucknell University
- 2012 J. Orin Oliphant Senior Prize, Bucknell University
- 2012 Phi Sigma Biological Sciences Senior Prize, Bucknell University

PUBLICATIONS

10. **M.E. Furze**, B.A. Huggett, M.M. Wieringa, D.M. Aubrecht, M.S. Carbone, J.C. Walker, X. Xu, C.I. Czimczik, A.D. Richardson (2020), Seasonal fluctuation of nonstructural carbohydrates reveals the metabolic availability of stemwood reserves in tree species with contrasting wood anatomy. *Tree Physiology*.
9. **M.E. Furze**, J. Drake, J. Wiensenbauer, A. Richter, E. Pendall (2019), Carbon isotopic tracing of sugars throughout whole-trees exposed to climate warming. *Plant, Cell & Environment*.
8. J. Drake, **M. Furze**, M. Tjoelker, Y. Carillo, C. Barton, E. Pendall (2019), Climate warming and tree carbon use efficiency in a whole-tree ¹³CO₂ tracer study. *New Phytologist* 222(3): 1313-1324.

7. **M.E. Furze**, B.A. Huggett, D.M. Aubrecht, C.D. Stolz, M.S. Carbone & A.D. Richardson (2019), Whole-tree nonstructural carbohydrate storage and seasonal dynamics in five temperate species. *New Phytologist* 221(3): 1466-1477.
6. S. Landhäusser, P. Chow, L. Dickman, **M.E. Furze**, I. Kuhlmann, S. Schmid, J. Wiesenbauer, B. Wild, G. Gleixner, H. Hartmann, G. Hoch, N. McDowell, A. Richardson, A. Richter & H. Adams (2018), Standardized protocols and procedures can precisely and accurately quantify non-structural carbohydrates. *Tree Physiology* 38(12): 1764-1778.
5. A.D. Richardson, K. Hufkens, T. Milliman, D.M. Aubrecht, **M.E. Furze**, B. Seyednasrollah, M.B. Krassovski, J.M. Latimer, W.R. Nettles, R.R. Heiderman, J.M. Warren & P.J. Hanson (2018), Ecosystem warming extends vegetation activity but heightens cold temperature vulnerability. *Nature* 560: 368-371.
4. **M.E. Furze**, S. Trumbore & H. Hartmann (2018), Detours along the phloem sugar highway: stem carbon storage and remobilization. *Current Opinion in Plant Biology* 43: 89-95.
3. **M.E. Furze**, A.M. Jensen, J.M. Warren & A.D. Richardson (2018), Seasonal patterns of nonstructural carbohydrate reserves in four woody boreal species. *Journal of the Torrey Botanical Society* 145(4): 332-340.
2. M.S. Moore, K.A. Field, M.J. Behr, G.G. Turner, **M.E. Furze**, D.W.F. Stern, P.R. Allegra, S.A. Bouboulis, C.D. Musante, M.E. Vodzak, M.E. Biron, M.B. Meierhofer, W.F. Frick, J.T. Foster, D. Howell, J.A. Kath, A. Kurta, G. Nordquist, J.S. Johnson, T.M. Lilley, B.W. Barrett & D.M. Reeder (2018), Energy conserving thermoregulatory patterns and lower disease severity in a bat resistant to the impacts of white-nose syndrome. *Journal of Comparative Physiology B* 188(1): 163-176.
1. A.D. Richardson, M.S. Carbone, B.A. Huggett, **M.E. Furze**, C.I. Czimczik, J.C. Walker, X. Xu, P.G. Schaberg & P. Murakami (2015), Distribution and mixing of old and new nonstructural carbon in two temperate trees. *New Phytologist* 206: 590-597.

TEACHING EXPERIENCE

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| 2020-present | Certificate of College Teaching Preparation Training Program, Poorvu Center for Teaching and Learning, Yale University |
| 2018 | Co-instructor for BIOS P-13000 Surf and Turf: An Introduction to Marine and Terrestrial Biology, Pre-College Program for high school students, Harvard University |
| 2018 | Teaching fellow for OEB 52 Biology of Plants, Harvard University |
| 2017 | Teaching fellow for OEB 10 Foundations of Biological Diversity, Harvard University |
| 2016 | Teaching fellow for OEB 399 Topics in Organismic and Evolutionary Biology, Harvard University |
| 2015-2016 | Media, Literacy, and Visualization fellow for the Derek Bok Center for Teaching and Learning, Harvard University |
| 2015-2016 | Co-instructor for OEB390r Writing fellowship and grant proposals for the biological sciences, Harvard University |
| 2015 | Peer tutor for OEB59 Plants and Human Affairs, Bureau of Study Council, Harvard University |
| 2014 | Instructor for Yoga: from the myth to the mat, Graduate Student Council mini-course, Harvard University |

MENTORING EXPERIENCE (* denotes undergraduate student)

- 2020-present Kyra Montes*, Yale University
2017 Andrew Bayliss*, Bucknell University
2016-2017 Molly Wieringa*, Harvard University
2016 Elizabeth Rao*, Brown University
2014-2015 Claire Stolz*, Harvard University
2013-2015 Mentor for high school seniors in the College Ready Program, Cambridge School
Volunteers, Cambridge Rindge and Latin School

PRESENTATIONS

CONFERENCE TALKS

CONTRIBUTED

- 2020 ‘Tracing sugars throughout whole-trees exposed to climate warming’, by Furze *et al.*,
Society for Integrative and Comparative Biology, Austin, TX
2019 ‘Understanding nonstructural carbohydrate storage and seasonal dynamics at the whole-
tree level’ by Furze *et al.*, Society for Integrative and Comparative Biology, Tampa, FL;
Rising Star in Organismal Botany winner
2018 ‘Isotopic insights into plant carbon cycling with climate warming’ by Pendall *et al.*,
Australasian Environmental Isotope Conference, Wellington, NZ (co-author)
2017 ‘How does warming affect carbon allocation, respiration, and residence time in trees? An
isotope tracer approach in a eucalypt’ by Pendall *et al.*, American Geophysical Union,
New Orleans, LA (co-author)
2014 ‘Variation in the concentration and age of nonstructural carbon stored in different tree
tissues’ by Richardson *et al.*, European Geosciences Union, Vienna, Austria (co-author)

COURSE LECTURES & TALKS

INVITED

- 2020 ‘Plant carbon allocation’, Dr. Craig Brodersen’s Plant Ecophysiology course at Yale
University, New Haven, CT
2018 ‘Forest ecosystems under global change’, Dr. Di Santo’s Climate Change course at
Emerson College, Boston, MA
2017 ‘Whole-tree nonstructural carbohydrate budgets in five temperate species’, Dr. Huggett’s
The North Woods course at Bates College, Petersham, MA
2016 ‘Understanding nonstructural carbohydrate storage in woody plants’, University of
California, Irvine, Czimczik Lab, Irvine, CA
2016 ‘Understanding nonstructural carbohydrate storage in woody plants’, University of
Alberta, Landhäusser Lab, Edmonton, Canada

CONTRIBUTED

- 2015 ‘Understanding nonstructural carbohydrate storage in woody plants’, WSL’s
International Course on Wood Anatomy and Tree Ring Ecology, Klosters, Switzerland

SEMINARS

INVITED

- 2019 ‘Whole-tree nonstructural carbohydrate storage in a changing world’, Yale Institute for
Biospheric Studies Seminar Series, Yale University, New Haven, CT
2019 ‘Whole-tree nonstructural carbohydrate storage in a changing world’, Department of
Natural Resources & Earth Systems Science, Environmental Sciences Seminar Series,
University of New Hampshire, Durham, NH

CONTRIBUTED

- 2017 ‘‘Whole-tree nonstructural carbohydrate budgets in five temperate species’’, Department of Organismic and Evolutionary Biology, G4 Symposium, Harvard University
- 2016 ‘Seasonal dynamics of nonstructural carbohydrate reserves in four woody boreal species’’, Herbaria Seminar Series, Harvard University, Cambridge, MA

OUTREACH TALKS

- 2014-present ‘There’s A Scientist in My Classroom’’, research talks to various high schools throughout MA, NH, and NJ
- 2018 ‘Understanding how carbon flows through trees’’, Workshop for K-5th grade teachers, Harvard Museum of Natural History, Cambridge, MA
- 2018 ‘Understanding forests: from individuals to ecosystems’’, Mrs. Parisky’s 4th graders, Birches School, Cambridge, MA
- 2018 ‘Understanding forests: from individuals to ecosystems’’, Ms. Pena’s and Mrs. Kuzan’s biology classes, Lacey Township High School, Lanoka Harbor, NJ
- 2016 ‘Understanding forests: from individuals to ecosystems’’, Mrs. Dorokhin’s 9th graders, The Winsor School, Cambridge, MA

CONFERENCE POSTERS

CONTRIBUTED

- 2018 ‘Whole-tree nonstructural carbohydrate storage and seasonal dynamics in five temperate species’’, by Furze *et al.*, American Geophysical Union, Washington D.C.
- 2015 ‘Quantifying the size and seasonal dynamics of nonstructural carbon in temperate forest trees’’, by Furze *et al.*, Plant Biology Symposium, Harvard University, Jamaica Plains, MA
- 2015 ‘Quantifying the size and seasonal dynamics of nonstructural carbon in temperate forest trees’’, by Furze *et al.*, DOE’s Terrestrial Ecosystem Science and Subsurface Biogeochemical Research Principal Investigators Meeting, Potomac, MD
- 2015 ‘Quantifying the size and seasonal dynamics of nonstructural carbon in temperate forest trees’’, by Furze *et al.*, Harvard Forest Symposium, Petersham, MA

SERVICE TO THE PROFESSION

- 2020-present Representative, Division of Botany, Student-Postdoctoral Affairs Committee, Society for Integrative and Comparative Biology
- 2020-present Assistant editor, Division of Botany, Integrative and Comparative Biology
- 2019-present Review editor, Frontiers in Forests and Global Change

SHORT COURSES ATTENDED

- 2017 Professional Development Series, Harvard University
- 2016 Phys-Fest, Kansas State University
- 2015 International Course on Wood Anatomy and Tree Ring Ecology, WSL
- 2014 Stable Isotope Biogeochemistry and Ecology (IsoCamp), University of Utah

ADDITIONAL UNIVERSITY ACTIVITIES

- 2018-2019 Departmental Seminar Journal Club, Harvard University
- 2015-2019 Yoga instructor for Harvard Recreation, Harvard University
- 2015-2017 Editor for Science in the News, Harvard University
- 2014-2017 Host for Bucknell University Externship Program, Harvard University

2014-2015 Writer for Science in the News, Harvard University
2013-2015 Mentee for Graduate Women in Science and Engineering, Harvard University