

Publications List
Barbara Lachenbruch
(formerly Barbara L. Gartner)

Peer-Reviewed Publications (127)

Lachenbruch B, St Clair JB, Harrington CA. Differences in branch hydraulic architecture related to the aridity of growing sites and seed sources of coastal Douglas-fir saplings. *Tree Physiology* (in press).

Lachenbruch B, Johnson GR. 2020. Effects of radial growth rate on outerwood properties of coastal Douglas-fir in healthy stands versus stands impacted by Swiss needle cast. *Canadian Journal of Forest Research* 51: 611-621.

Xing J., Li, P., Zhang, Y. Li, J., Liu, Y. Lachenbruch B, Xu, X., Zhao, J. 2020. Fungal pathogens of canker disease trigger canopy dieback in poplar saplings by inducing functional failure of the phloem and cambium and carbon starvation in the xylem. *Physical and Molecular Plant Pathology* 112. <https://doi.org/10.1016/j.pmpp.2020.101523>

Lachenbruch, B. and Zhao, J. P. 2019. Effects of phloem on canopy dieback, tested with manipulations and a canker pathogen in the *Corylus avellana/Anisogramma anomala* host/pathogen system. *Tree Physiology* 7: 1086-1098.

Zhao, J. Yang, F. Feng, J. Wang, Y. Lachenbruch, B., Wang, J. Wan, X. 2017. Genome-wide constitutively expressed gene analysis and new reference gene selection based on transcriptome data: a case study from poplar/canker disease interaction. *Frontiers in Plant Science*, <https://doi.org/10.3389/fpls.2017.01876>.

Noyer, E., B. Lachenbruch, J. Dlouha, C. Collet, J. Ruelle, F. Ninger, and M. Fournier. 2017. Xylem traits in European beech (*Fagus sylvatica* L.) display a large plasticity in response to canopy release. *Annals of Forest Science*. DOI 10.1007/s13595-017-0634-1.

Voelker, S. L., M. C. Stambaugh, J. R. Brooks, F. C. Meinzer, B. Lachenbruch, and R. P. Guyette. 2017. Evidence that higher CO₂ increases tree growth sensitivity to temperature: a comparison of modern and paleo oaks. *Oecologia* 183: 1183-1195.

McCulloh, K. A., D. M. Johnson, J. Petitmermet, B. McNellis, F. C. Meinzer, and B. Lachenbruch. 2015. A comparison of hydraulic architecture in three similarly sized woody species differing in their maximum potential height. *Tree Physiology* 35: 723-731.

- Lachenbruch, B. L. and K. A. McCulloh. 2014. Traits, properties, and performance: how woody plants combine hydraulic and mechanical functions in a cell, tissue, or whole plant. *Tansley Review. New Phytologist* 204: 747-764.
- Marias, D. E., F. C. Meinzer, D. R. Woodruff, D. C. Shaw, S. L. Voelker, J. R. Brooks, B. Lachenbruch, K. Falk and J. McKay. Impacts of dwarf mistletoe on the physiology of host *Tsuga heterophylla* trees as recorded in tree ring C and O stable isotopes. *Tree Physiology* 34: 595-607.
- Saffell, B. J., F. C. Meinzer, S. L. Voelker, D. C. Shaw, J. R. Brooks, B. Lachenbruch, and J. McKay. 2014. Tree-ring stable isotopes record the impact of a foliar fungal pathogen on CO₂ assimilation and growth in Douglas-fir. *Plant, Cell and Environment* 37: 766-779.
- Saffell, B. J., F. C. Meinzer, D. R. Woodruff, D. C. Shaw, S. L. Voelker, B. Lachenbruch and K. Falk. 2014. Seasonal carbohydrate dynamics and growth in Douglas-fir trees experiencing chronic, fungal-mediated reduction in functional leaf area. *New Phytologist* 34: 218-228.
- Voelker, S. L., F. C. Meinzer, B. Lachenbruch, J. R. Brooks and R. P. Guyette. 2014. Drivers of radial growth and carbon isotope discrimination of bur oak (*Quercus macrocarpa* Michx.) across continental gradients in precipitation, vapor pressure deficit and irradiance. *Plant, Cell and Environment* 37: 766- 779.
- Barnard, D. M., B. Lachenbruch, K. A. McCulloh, P. Kitin and F. C. Meinzer. 2013. Do ray cells provide a pathway for radial-apoplastic water movement in the stems of conifer trees? *American Journal of Botany* 100: 322-331
- Crivellaro, A., K. McCulloh, F. A. Jones, and B. Lachenbruch. 2012. Anatomy and mechanical and hydraulic needs of woody climbers contrasted with subshrubs on the Island of Cyprus. *IAWA J.* 33: 355-373.
- Domec, J.-C., B. Lachenbruch, M. Pruyn, and R. Spicer. 2012. Age-related changes in sapwood area, leaf area, and xylem permeability in two coniferous species with contrasting sapwood areas. *Annals of Forest Science* 69: 17-27.
- Lens, F. L. Cooper, M. A. Gandolfo, A. Groover, P. Jaiswal, B. Lachenbruch, R. Spicer, M. Staton, D. W. Stevenson, R. L. Walls, and J. Wegrzyn. 2012. An extension of the plant ontology project supporting wood anatomy and development research. *IAWA J.* 33: 113-117.
- McCulloh, K. A., D. M. Johnson, F. C. Meinzer, S. L. Voelker, B. Lachenbruch, and J.-C. Domec. 2012. Hydraulic architecture of two species differing in wood density: opposing strategies in co-occurring tropical pioneer trees. *Plant Cell and Environment* 35: 116-125.
- Newton, M., E. C. Cole, B. Lachenbruch and J. M. Robbins. 2012. Branch size and longevity linked to initial plantation spacing and rectangularity in young Douglas-fir. *Forest Ecology and Management* 266: 75-82.

- Voelker, S. L., P.-E. Noiro-Cosson, M. C. Stambaugh, E. R. McMurry, F. C. Meinzer, B. Lachenbruch, and R. P. Guyette. 2012. Spring temperature responses of oaks are synchronous with North Atlantic conditions during the Late Quaternary. *Ecological Monographs* 82: 149-168.
- Barnard, D. M., F. C. Meinzer, B. Lachenbruch, K. A. McCulloh, D. M. Johnson, and D. R. Woodruff. 2011. Climate-related trends in sapwood biophysical properties in two conifers: avoidance of hydraulic dysfunction through coordinated adjustments in xylem efficiency, safety and capacitance. *Plant Cell and Environment* 34: 643-644.
- McCulloh, K. A., F. C. Meinzer, J. S. Sperry, B. Lachenbruch, S. L. Voelker, D. R. Woodruff, and J.-C. Domec. 2011. Comparative hydraulic architecture of tropical tree species representing a range of successional stages and wood density. *Oecologia* 167: 27-37.
- McCulloh, K. A., D. M. Johnson, F. C. Meinzer, and B. Lachenbruch. 2011. An annual pattern of native embolism in upper branches of four tall conifer species. *American Journal of Botany* 98: 1007-1015.
- Voelker, S., B. Lachenbruch, F. C. Meinzer, P. B. Kitin and S. H. Strauss. 2011. Transgenic poplars with reduced lignin show impaired xylem conductivity, growth efficiency and survival. *Plant Cell and Environment* 34: 655-668.
- Voelker, S. L., B. Lachenbruch, F. C. Meinzer, and S. H. Strauss. 2011. Reduced wood stiffness and strength, and altered stem form, in young antisense 4CL transgenic poplars with reduced lignin contents. *New Phytologist* 189:1096-1109.
- Kitin, P., S. L. Voelker, B. Lachenbruch, H. Beeckman, R. C. Meinzer, and S. H. Strauss. 2010. Tyloses and phenolic deposits in xylem vessels impede water transport in low-lignin transgenic poplars: a study by cryo-fluorescence microscopy. *Plant Physiology* 154: 1-12.
- Lachenbruch, B., F. Droppelmann, C. Balocchi, M. Peredo, and E. Perez. 2010. Stem form and compression wood formation in young *Pinus radiata* trees. *Canadian Journal of Forest Research* 40: 26-34.
- Lachenbruch, B., G. R. Johnson, G. Downes, and R. Evans. 2010. Relationships of density, microfibril angle, and sound velocity with stiffness and strength in mature wood of Douglas-fir. *Canadian Journal of Forest Research* 40: 55-64.
- McCulloh, K. A., J. S. Sperry, B. Lachenbruch, F. C. Meinzer and P. B. Reich. 2010. Moving water well: comparing hydraulic efficiency in twigs and trunks of coniferous, ring-porous, and diffuse-porous saplings from temperate and tropical forests. *New Phytologist* 186: 439-450.
- Meinzer, F. C., K. A. McCulloh, B. Lachenbruch, D. R. Woodruff, and D. M. Johnson. 2010. The blind men and the elephant: The impact of context and scale in evaluating conflicts between plant hydraulic safety and efficiency. *Oecologia* 164: 287-296.
- Voelker, S. L., B. Lachenbruch, F. C. Meinzer, M. Jourdes, C. Ki, A. M. Patten, L. B. Davin, N. G.

- Lewis, G. A. Tuskan, L. Gunter, S. R. Decker, M. J. Selig, P. Kitin, and S. H. Strauss. 2010. Antisense down-regulation of 4CL expression alters lignification, tree growth and saccharification potential of field-grown poplar. *Plant Physiology* 154: 874-886.
- Collins, B. R., J. L. Parke, B. Lachenbruch, and E. M. Hansen. 2009. The effects of *Phytophthora ramorum* infection on hydraulic conductivity and tylosis formation in tanoak sapwood. *Canadian Journal of Forest Research* 39: 1766-1776.
- DeBell, J. and B. Lachenbruch. 2009. Heartwood/sapwood variation of western redcedar as influenced by cultural treatments and position in tree. *Forest Ecology and Management* 256: 2026-2032.
- Domec, J.C., J. M. Warren, F. C. Meinzer, and B. Lachenbruch. 2009. Safety factors for xylem failure by implosion and air-seeding within roots, trunks and branches of young and old conifer trees. *IAWA J.* 30: 100-120.
- McCulloh, K. A., J. A. Sperry, F. C. Meinzer, B. Lachenbruch, and C. Atala. 2009. Murray's law, the 'Yarrum' optimum, and the hydraulic architecture of compound leaves. *New Phytologist* 184: 234-244.
- Meinzer, F. C., D. M. Johnson, B. Lachenbruch, K. A. McCulloh, and D. R. Woodruff. 2009. Xylem hydraulic safety margins in woody plants: coordination of stomatal control of xylem tension with hydraulic capacitance. *Functional Ecology* 23: 922-930.
- Woodruff, D. R., F. C. Meinzer, B. Lachenbruch, and D. M. Johnson. 2009. Coordination of leaf structure and gas exchange along a height gradient in a tall conifer. *Tree Physiology* 29: 261-272.
- Domec, J.-C. B. Lachenbruch, F. C. Meinzer, D. R. Woodruff, J. M. Warren, and K. A. McCulloh. 2008. Maximum height in a conifer is associated with conflicting requirements for xylem design. *Proc. National Academy of Sciences* 105(33): 12069-12074.
- Dunham, S. M., L. M. Ganio, A. I. Gitelman, and B. Lachenbruch. 2008. Partitioning variation in Douglas-fir xylem properties among multiple scales via a Bayesian hierarchical model. *Tree Physiology* 28: 1017-1024.
- Taylor, M. A. J. R. Brooks, B. Lachenbruch, J. J. Morrell, and S. Voelker. 2008. Correlation of carbon isotope ratios in the cellulose and wood extractives of Douglas-fir? *Dendrochronologia* 26: 125-131.
- Woodruff, D. R., F. C. Meinzer, and B. Lachenbruch. 2008. Height-related trends in leaf xylem anatomy and shoot hydraulic characteristics in a tall conifer: safety versus efficiency in foliar water transport. *New Phytologist* 180: 90-99.

- Domec, J.-C., F. C. Meinzer, B. Lachenbruch, and J. Housset. 2007. Dynamic variation in sapwood specific conductivity in six woody species. *Tree Physiology* 27:1389-1400.
- Dunham, S. M., B. Lachenbruch, and L. M. Ganio. 2007. Bayesian analysis of Douglas-fir hydraulic architecture at multiple scales. *Trees* 21: 65-78.
- Parke, J. L., E. Oh, S. Voelker, E. M. Hansen, G. Buckles, and B. Lachenbruch. 2007. *Phytophthora ramorum* colonizes tanoak xylem and is associated with reduced stem water transport. *Phytopathology* 97: 1558-1567.
- McCulloh, K. A., K. Winter, F. C. Meinzer, M. Garcia, J. Aranda, and B. Lachenbruch. 2007. A comparison of daily water use estimates derived from constant heat sap-flow probe values and gravimetric measurements in pot-grown saplings. *Tree Physiology* 27: 1355-1360.
- Peterson, M. G., H. R. Dietterich, and B. Lachenbruch. 2007. Do Douglas-fir branches and roots have juvenile wood? *Wood and Fiber Science* 39: 651-660.
- Silva, J. A., B. L. Gartner, and J. J. Morrell. 2007. Towards the development of accelerated methods for assessing the durability of wood plastic composites. *Journal of Testing and Evaluation* 35:203-210.
- Taylor, A. M., J. R. Brooks, B. Lachenbruch, and J. J. Morrell. 2007. Radial patterns of carbon isotopes in the xylem extractives and cellulose of Douglas-fir. *Tree Physiology* 27: 921-927.
- Woodruff, D. R., K. A. McCulloh, J. M. Warren, F. C. Meinzer, and B. Lachenbruch. 2007. Impacts of tree height on leaf hydraulic architecture and stomatal control in Douglas-fir. *Plant Cell and Environment* 30:559-569.
- DeBell, D. S., C. A. Harrington, B. L. Gartner, and R. Singleton. 2006. Time and distance to clear wood in pruned red alder saplings. In *Red alder - a state of knowledge*, R. L. Deal and C. A. Harrington, eds. General Technical Report PNW-GTR 669. USDA Pacific Northwest Research Station, Portland, OR. 150 p.
- Domec, J.-C., B. Lachenbruch, and F. C. Meinzer. 2006. Bordered pit structure and function determine spatial patterns of air-seeding thresholds in xylem of Douglas-fir (*Pseudotsuga menziesii*; Pinaceae) trees. *American Journal of Botany* 93: 1588-1600.
- Domec, J.-C., F. C. Meinzer, B. L. Gartner, and D. Woodruff. 2006. Transpiration-induced axial and radial tension gradients in trunks of Douglas-fir trees. *Tree Physiology* 26: 275-284.
- Gartner, B. L. 2006. Prediction of wood structural patterns in trees using ecological models of plant water relations. In D. D. Stokke and L. H. Groom, eds., *Characterization of the Cellulosic Cell Wall*, Ch. 4, Blackwell Publishing, Ames, IA., p. 38-52.

- Gartner, B. L. and G. R. Johnson. 2006. Is long primary growth associated with stem sinuosity in Douglas-fir? *Canadian Journal of Forest Research* 36: 2351-2356.
- Johnson, G. R. and B. L. Gartner. 2006. Genetic variation in basic density and modulus of elasticity of coastal Douglas-fir. *Tree Genetics & Genomes* 3: 25-33.
- Marshall, H. D., G. E. Murphy, and B. Lachenbruch. 2006. Effects of bark thickness estimates on optimal log merchandising. *Forest Products Journal* 56(11/12):87-92.
- Meinzer, F. C., J. R. Brooks, J.-C. Domec, B. L. Gartner, J. M. Warren, D. R. Woodruff, K. Bible, and D. C. Shaw. 2006. Dynamics of water transport and storage in conifers studied with deuterium and heat tracing techniques. *Plant, Cell and Environment* 29: 105-114.
- Renninger, H. and B. L. Gartner. 2006. No correlation between latewood formation and leader growth in Douglas-fir saplings. *IAWA J.* 183-192.
- Renninger, H. R., B. L. Gartner and F. C. Meinzer. 2006. Effects of release from suppression on wood functional characteristics in young Douglas-fir and western hemlock. *Canadian Journal of Forest Research* 36: 2038-2046.
- Taylor, A. M., B. L. Gartner, and J. J. Morrell. 2006. Western redcedar extractives: Is there a role for the silviculturist? *Forest Products Journal* 56: 58-63.
- Taylor, A. M., B. L. Gartner, J. J. Morrell, and K. Tsunoda. 2006. Effects of heartwood extractive fractions of *Thuja plicata* and *Chamaecyparis nootkatensis* on wood degradation by termites or fungi. *Journal of Wood Science* 52: 147-153.
- Domec, J.-C., M. L. Pruyn, and B. L. Gartner. 2005. Axial and radial profiles in conductivities, water storage and native embolism in trunks of young and old growth ponderosa pine trees. *Plant, Cell and Environment*. 128:1103-1113.
- Gartner, B. L. 2005. Assessing wood characteristics and wood quality in intensively managed plantations. *Journal of Forestry*, March: 75-77.
- Gartner, B. L. and F. C. Meinzer. 2005. Structure-function relationships in sapwood water transport and storage. In N. M. Holbrook and M. A. Zwieniecki, eds. *Vascular Transport in Plants*. Elsevier/Academic Press, Oxford. pp. 307-331.
- Gartner, B. L., J. M. Robbins, and M. Newton. 2005. Effects of pruning on wood density and tracheid length in young Douglas-fir. *Wood and Fiber Science* 37: 304-312.
- Grotta, A. T., B.L. Gartner, S. R. Radosevich, and M. Huso. 2005. Influence of red alder competition on cambial phenology and latewood formation in Douglas-fir. *IAWA J.* 26:309-324

- Grotta, A. T., R. J. Leichti, B. L. Gartner, and G. R. Johnson. 2005. Effect of growth ring orientation and placement of earlywood and latewood on MOE and MOR of very-small clear Douglas-fir beams. *Wood and Fiber Science* 37: 207-212.
- Johnson, G. R., A. Grotta, B. L. Gartner, and G. Downes. 2005. Impact of the foliar pathogen Swiss needle cast on wood quality of Douglas-fir. *Canadian Journal of Forest Research*. 35:331-339.
- Maton, C. and B. L. Gartner. 2005. Do gymnosperm needles pull water through the xylem produced in the same year as the needle? *American Journal of Botany* 92: 123-13.
- Olszyk, D., M. Apple, B. L. Gartner, R. Spicer, C. Wise, E. Buckner, A. Benson-Scott, and D. Tingey. 2005. Xeromorphy increases in shoots of *Pseudotsuga menziesii* (Mirb.) Franco seedlings with exposure to elevated temperature but not elevated CO₂. *Trees: Structure and Function*. 19:552-553.
- Pruyn, M. L., M.E. Harmon and B. L. Gartner. 2005. Storage versus substrate limitation to bole respiratory potential in two coniferous tree species of contrasting sapwood width. *Journal of Experimental Botany* 56:2637-2649.
- DeBell, D. S., R. Singleton, B. L. Gartner, and D. D. Marshall. 2004. Wood density of young-growth western hemlock: relation to ring age, radial growth, stand density, and site quality. *Canadian Journal of Forest Research* 34: 2433-2442.
- Gartner, B. L., J. R. Moore, and B. A. Gardiner. 2004. Gas in stems: abundance and potential consequences for tree biomechanics. *Tree Physiology* 24: 1239-1250.
- Grotta, A. T., B. L. Gartner, and S. R. Radosevich. 2004. Influence of species proportion and timing of establishment on stem quality in mixed red alder/Douglas-fir plantations. *Canadian Journal of Forest Research* 34: 863-873.
- Gartner, B. 2003. Teaching wood anatomy - tips to make your classes more lively and engaging. *IAWA J.* 24: 452-455.
- Bouffier, L. A., B. L. Gartner, and J.-C. Domec. 2003. Wood density and hydraulic properties of ponderosa pine from the Willamette Valley vs. the Cascade mountains. *Wood and Fiber Science* 35: 217-233.
- Cherubini, P., B. L. Gartner, R. Tognetti, O. U. Bräker, W. Schoch and J. L. Innes. 2003. Identification, measurement and interpretation of tree rings in woody species from Mediterranean climates. *Biological Reviews* 78: 119-148.
- Domec, J. C. and B. L. Gartner. 2003. Relationship between growth rates and xylem hydraulic characteristics in young, mature, and old-growth Ponderosa pine trees. *Plant, Cell and Environment* 26: 471-483.

- Gartner, B. L., J. Roy, and R. Huc. 2003. Effects of tension wood on specific conductivity and vulnerability to embolism of *Quercus ilex* seedlings grown at two atmospheric CO₂ concentrations. *Tree Physiology* 23: 387-395.
- Johnson, G. R., B. L. Gartner, D. Maguire, and A. Kanaskie. 2003. Influence of Bravo fungicide applications on wood density and moisture content of Swiss-needle cast affected Douglas-fir trees. *Forest Ecology and Management* 186: 339-348.
- Morrell, J. J., A. Paillard, D. Gnoblej, B. L. Gartner, M. R. Milota, and R. G. Rhatigan. 2003. Variations in longitudinal permeability of coastal western hemlock. *Wood and Fiber Science* 35: 397-400.
- Pruyn, M. L. M. E. Harmon, and B. L. Gartner. 2003. Stem respiratory potential in six softwood and four hardwood tree species in the central Cascades of Oregon. *Oecologia* 137: 10-21.
- Singleton, R., D. S. DeBell, and B. L. Gartner. 2003. Effect of extraction on wood density of western hemlock (*Tsuga heterophylla* (RAF.) SARG.). *Wood and Fiber Science* 35: 363-369.
- Singleton, R., D. S. DeBell, D. D. Marshall, and B. L. Gartner. 2003. Eccentricity and fluting in young- growth western hemlock in Oregon. *Western Journal of Forestry* 18: 1-8.
- Taylor, A. M., B. L. Gartner, and J. J. Morrell. 2003. Co-incident variations in growth rate and heartwood extractive concentration in Douglas-fir. *Forest Ecology and Management* 186: 257-260.
- DeBell, D. S., R. Singleton, C. A. Harrington, and B. L. Gartner. 2002. Wood density and fiber length in young *Populus* stems: relation to clone, age, growth rate, and pruning. *Wood and Fiber Science* 34: 529-539.
- Domec, J. C. and B. L. Gartner. 2002. Age- and position-related changes in hydraulic versus mechanical dysfunction of xylem: inferring the design criteria for Douglas-fir wood structure. *Tree Physiology* 22: 91-104.
- Domec, J. C. and B. L. Gartner. 2002. How do water transport and water storage differ in coniferous earlywood and latewood? *Journal of Experimental Botany* 53: 2369-2379.
- Gartner, B. L., R. Aloni, R. Funada, A. N. Lichtfuss-Gautier, and F. A. Roig. 2002. Clues for dendrochronology from studies of wood structure and function. *Dendrochronologia* 20: 53-61.
- Gartner, B. L., E. M. North, G. R. Johnson, and R. Singleton. 2002. Effects of live crown on vertical patterns of wood density and growth in Douglas-fir. *Canadian Journal of Forest Research* 32: 439-447.
- Gartner, B. L. 2002. Sapwood and inner bark quantities in relation to leaf area and wood density in Douglas-fir. *IAWA Journal* 23: 267-285.

- Pruyn, M. L., B. L. Gartner, and M. E. Harmon. 2002. Within-stem variation of respiration in *Pseudotsuga menziesii* (Douglas-fir) trees. *New Phytologist* 154: 359-372.
- Pruyn, M. L., B. L. Gartner, and M. E. Harmon. 2002. Respiratory potential in sapwood of old versus young ponderosa pine trees in the Pacific Northwest. *Tree Physiology* 22: 105-116.
- Spicer, R. and B. L. Gartner. 2002. Compression wood has little impact on the water relations of Douglas-fir (*Pseudotsuga menziesii*) seedlings despite a large effect on shoot hydraulic properties. *New Phytologist* 154: 633-640.
- Taylor, A. M., B. L. Gartner, and J. J. Morrell. 2002. Heartwood formation and natural durability - a review. *Wood and Fiber Science* 34: 587-611.
- Wilson, B. F. and B. L. Gartner. 2002. Effects of phloem girdling in conifers on apical control of branches, growth allocation and air in wood. *Tree Physiology* 22: 347-353.
- DeBell, D. S., C. Keyes, and B. L. Gartner. 2001. Wood density of *Eucalyptus saligna* grown in Hawaiian plantations: effects of silvicultural practices and relation to growth rate. *Australian Forestry* 64: 106-110.
- Domec, J. C. and B. L. Gartner. 2001. Cavitation and water storage capacity in bole xylem segments of mature and young Douglas-fir trees. *Trees* 15: 204-214.
- Spicer, R. and B. L. Gartner. 2001. The effects of cambial age and position within the stem on specific conductivity in Douglas-fir (*Pseudotsuga menziesii*) sapwood. *Trees* 15: 222-229.
- Gartner, B. L., D. C. Baker, and R. Spicer. 2000. Distribution and vitality of xylem rays in relation to tree leaf area in Douglas-fir. *IAWA Journal* 21: 389-401.
- Spicer, R., R. Darbyshire, and B. L. Gartner. 2000. Sinuous stem growth in a Douglas-fir (*Pseudotsuga menziesii*) plantation: growth patterns wood quality effects. *Canadian Journal of Forest Research* 30: 761-768.
- DeBell, J. D., J. J. Morrell, and B. L. Gartner. 1999. Within-stem variation in tropolone content and decay resistance of second-growth western redcedar. *Forest Science* 45: 101-107.
- Gartner, B. L., J. J. Morrell, C. M. Freitag, and R. Spicer. 1999. Heartwood decay resistance by vertical and radial position in Douglas-fir trees from a young stand. *Canadian Journal of Forest Research* 29: 1993-1996.
- Kavanagh, K. L., B. J. Bond, S. N. Aitken, B. L. Gartner, and S. Knowe. 1999. Root and shoot vulnerability to xylem cavitation in four populations of Douglas-fir seedlings. *Tree Physiology* 19: 31- 37.
- DeBell, J. D., B. L. Gartner, and D. S. DeBell. 1998. Fiber length in young *Populus* stems grown at extremely different rates. *Canadian Journal of Forest Research* 28: 603-608.

Morrell, J. J. and B. L. Gartner. 1998. Wood as a material. In A. Bruce and J. W. Palfreyman, eds., *Forest Products Biotechnology*, pp. 1-14. Taylor & Francis, London. Spicer, R. and B. L. Gartner. 1998. How does a gymnosperm branch (*Pseudotsuga menziesii*) assume the hydraulic status of a main stem when it takes over as leader? *Plant Cell and Environment* 21: 1063-1070.

Spicer, R. and B. L. Gartner. 1998. Hydraulic properties of Douglas-fir (*Pseudotsuga menziesii*) branches and branch halves with reference to compression wood. *Tree Physiology* 19: 777-784.

DeBell, J. D. and B. L. Gartner. 1997. Stem characteristics on the lower log of 35-year old western redcedar grown at several spacings. *Western Journal of Applied Forestry* 12: 9-15.

DeBell, J. D., J. J. Morrell, and B. L. Gartner. 1997. Tropolone content of increment cores as an indicator of decay resistance in western redcedar. *Wood and Fiber Science* 29: 364-369.

Gartner, B. L. 1997. Trees have higher longitudinal growth strains in their stems than in their roots. *International Journal of Plant Sciences* 158: 418-423.

Gartner, B. L., H. Lei, and M. R. Milota. 1997. Variation in the anatomy and specific gravity of wood within and between trees of red alder (*Alnus rubra* Bong.). *Wood and Fiber Science* 29: 10-20.

Lei, H., B. L. Gartner, and M. R. Milota. 1997. Effect of growth rate on the anatomy, specific gravity, and bending properties of wood from 7-year-old red alder (*Alnus rubra* Bong.). *Canadian Journal of Forest Research* 27: 80-85.

Gartner, B. L. 1996. Does photosynthetic bark have a role in the production of core vs. outer wood? *Wood and Fiber Science* 28: 53-61.

Lei, H., M. R. Milota, and B. L. Gartner. 1996. Between- and within-tree variation in the anatomy and specific gravity of wood in Oregon white oak (*Quercus garryana* Dougl.). *IAWA Journal* 17: 445-461.

Wilson, B. R. and B. L. Gartner. 1996. Lean in red alder (*Alnus rubra*): growth stress, tension wood and righting response. *Canadian Journal of Forest Research* 26: 1951-1956.

Gartner, B. L. 1995. Wind-shelters as safe sites for establishment of *Lupinus arboreus*, a coastal species. *Madroño* 42: 1-11.

Gartner, B. L. 1994. Root biomechanics and whole-plant allocation patterns: responses of tomato plants to stem flexure. *Journal of Experimental Botany* 45: 1647-1654.

Gartner, B. L., C. Wasser, E. Rodriguez, and W. L. Epstein. 1993. Seasonal variation of urushiol content in poison oak. *American Journal of Contact Dermatitis* 4: 33-36.

Gartner, B. L. 1991. Structural stability and architecture of vines vs. shrubs of poison oak, *Toxicodendron diversilobum*. *Ecology* 72: 2005-2015.

Gartner, B. L. 1991. Relative growth rates of vines and shrubs of western poison oak, *Toxicodendron diversilobum* (Anacardiaceae). *American Journal of Botany* 10: 1345-1353.

Gartner, B. L. 1991. Is the climbing habit of poison oak ecotypic? *Functional Ecology* 5: 696-704.

Gartner, B. L. 1991. Stem hydraulic properties of vines vs. shrubs of western poison oak, *Toxicodendron diversilobum*. *Oecologia* 87: 180-189.

Gartner, B. L., S. H. Bullock, H. A. Mooney, V. B. Brown, and J. L. Whitbeck. 1990. Water transport properties of vine and tree stems in a tropical deciduous forest. *American Journal of Botany* 77: 742- 749.

Gartner, B. L. 1989. Breakage and regrowth of *Piper* species in rain forest understory. *Biotropica* 21: 303-307.

Gartner, B. L., F. S. Chapin, III, and G. R. Shaver. 1986. Reproduction of *Eriophorum vaginatum* by seed in Alaskan tussock tundra. *Journal of Ecology* 74: 1-18.

Shaver, G. R., F. Chapin, III, and B. L. Gartner. 1986. Factors limiting seasonal growth and peak biomass accumulation in *Eriophorum vaginatum* in Alaskan tussock tundra. *Journal of Ecology* 74: 257-278.

Gartner, B. L., F. S. Chapin, III, and G. R. Shaver. 1983. Demographic patterns of seedling establishment and growth of native graminoids in an Alaskan tundra disturbance. *Journal of Applied Ecology* 20: 965-980.

Edited Books

Gartner, B. L. (editor). 1995. *Plant Stems: Physiology and Functional Morphology*. Academic Press, San Diego. 440 pp.

Meinzer, F. C., B. Lachenbruch, and T. E. Dawson, Eds. 2011. *Size and age-related changes in tree structure and function*, Springer, Dordrecht. 510 pp.
 Hacke, U. G., B. Lachenbruch, J. Pittermann, S. Mayr, J.-C. Domec, and P. J. Schulte. 2015. The hydraulic architecture of conifers. *In Functional and Ecological Xylem Anatomy*, U. Hacke (ed.). Springer. 39-74.

Book Chapters

Kavanaugh, M. T., K. S. Boersma, S. L. Close, L. M. Ganio, L. Hooven, and B. Lachenbruch. 2015. Advancing toward professorship in biology, ecology, and Earth system sciences. pp 166-184, *In Forward to Professorship in STEM: Inclusive Faculty Development Strategies That Work*, C. Mavripilis (ed.). Elsevier.

Hinckley, T., B. Lachenbruch, F. C. Meinzer, and T. E. Dawson. 2011. The whole-lifespan perspective on integration of structure and function in trees. pp. 3-30 in F. C. Meinzer, B. Lachenbruch, and T. Dawson, Eds, *Size and age-related changes in tree structure and function*, Springer, Dordrecht.

Lachenbruch, B., J. Moore, and R. Evans. 2011. Radial variation in wood structure and function in woody plants, and hypotheses for its occurrence. p. 121-164 in F. C. Meinzer, B. Lachenbruch, and T. E. Dawson, Eds, *Size and age-related changes in tree structure and function*, Springer, Dordrecht.
 Lachenbruch, B. 2011. Physical models as an aid for teaching wood anatomy. *IAWA J.* 32: 301-312.

Gartner, B. L. 2006. Prediction of wood structural patterns in trees using ecological models of plant water relations. Chapter 4 in *Characterization of the Cellulosic Cell Wall*, D. D. Stokke and L. H. Groom, eds. Blackwell Publishing, Ames, IA. pp. 38-52.

Gartner, B. L. and F. C. Meinzer. 2005. Structure-function relationships in sapwood water transport and storage. Ch. 15 in N. M. Holbrook and M. A. Zwieniecki, eds. *Vascular Transport in Plants*. Elsevier/Academic Press, Oxford. pp. 307-331.

Morrell, J.J. and B.L. Gartner. 1998. Wood as a material. In A. Bruce and J. W. Palfreyman, eds, *Forest Products Biotechnology*. Taylor & Francis, London. pp. 1-14.

Gartner, B. L. 1995. Patterns of xylem variation within a tree and their hydraulic and mechanical consequences. In B. L. Gartner, ed., *Plant Stems: Physiology and Functional Morphology*, pp. 125- 149, Academic Press, San Diego.

Mooney, H. A. and B. L. Gartner. 1991. Reserve economy of vines. In F. E. Putz and H. A. Mooney, eds., *Biology of Vines*, pp. 161-179. Cambridge University Press.

Non-Peer-Reviewed Publications

- Lachenbruch, B. 2018. Drought. *Compendium of Conifer Diseases*, ed. E. M. Hansen, K. J. Lewis, and G. A. Chastagner. American Phytopathological Society, St Paul Mn. pp 151-152
- Lens, F. L. Cooper, M. A. Gandolfo, A. Groover, P. Jaiswal, B. Lachenbruch, R. Spicer, M. Staton, D. W. Stevenson, R. L. Walls, and J. Wegrzyn. 2012. An extension of the plant ontology project supporting wood anatomy and development research. *IAWA J.* 33: 113-117.
- Hacke, U. G., A. L. Jacobsen, R. B. Pratt, C. Maurel, and B. Lachenbruch. 2012. New research on plant–water relations examines the molecular, structural, and physiological mechanisms of plant responses to their environment. *New Phytologist* 196: 345-348.
- Lachenbruch, B., S. L. Voelker, F. C. Meinzer, and S. H. Strauss. 2009. Structural and functional differences among transgenic hybrid poplar lines with varying lignin contents. *Proceedings of the 6th plant Biomechanics Conference, Cayenne, French Guiana, Nov. 16-21, 2009.* Published by UMR ECOFOG. 9 pages. (<http://www.ecofog.gf/Docs/PBM2009Proceedings.pdf>)
- Gartner, B. L. and D. E. Thomas. 1988. Vegetative propagation of poison oak (California). *Restoration and Management Notes* 6:48-49. (Note)
- Gartner, B. 2003. Teaching wood anatomy – tips to make your classes more lively and engaging. *IAWA J.* 24: 452-455.
- Gartner, B. 2002. Wood quality research at OSU. *Willamette Valley Ponderosa Pine Conservation Association, 2001 Annual Report*, pp. 5-7.
- Gartner, B. and F. Roig. 2001. Tree rings and people: International conference on the future of dendrochronology. (report on meeting) *IAWA Journal* 22: 432-433.
- Gartner, B.L. 2001. Multitasking and tradeoffs in stems, and the costly dominion of domatia. Commentary on “Leaf-stem allometry, hollow stems, and the evolution of caulinary domatia in myrmecophytes” by C. Brouat and D. McKey (same issue). *New Phytologist* 151:311-313.
- Gartner, Barbara Lachenbruch. 1990. Appendix, The logistics of working with poison oak. Pages 132-162, in *Consequences of the vine vs. shrub growth forms for biomechanics, growth, and hydraulic architecture of western poison oak, Toxicodendron diversilobum.* PhD Dissertation, Dept. of Biological Sciences, Stanford University. 162 pp.