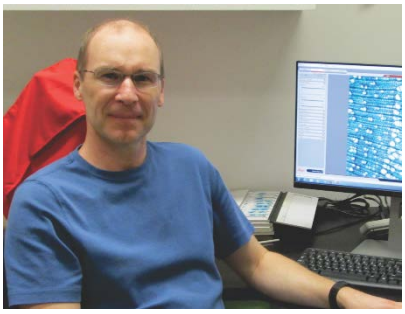

UWE HACKE

Professor

780-492-8511

uwe.hacke@ualberta.ca

https://sites.ualberta.ca/~hacke/index.html

LAB FOCUS

We study how plants transport water and sugars, and how they cope with abiotic stress.

EXPERIENCE

Professor — University of Alberta	2016-present
Associate Professor (with tenure) — University of Alberta	2012-2016
Assistant Professor — University of Alberta	2007-2012
Research Assistant Professor — University of Utah	2003-2006

CURRENT & PROSPECTIVE LAB MEMBRES

Rachel Hillabrand (Ph.D.) Climate-induced forest mortality in Canada	2014-present
Jaime Sebastian Azcona (Ph.D.) Frost tolerance of boreal forest trees	2014-present
Ryan Stanfield (Ph.D.) Phloem structure and function	2015-present
Killian Fleurial (Ph.D.) Environmental impacts on vascular tissue function	2017-present

RESEARCH

Selected Publications

(Full list available at these links: http://tinyurl.com/glanhe8, http://orcid.org/0000-0001-5983-3582)

Book: “Functional and Ecological Xylem Anatomy”, Springer (2015). Editor.

S.G. Schreiber, U.G. Hacke, A. Hamann (2015) Variation of xylem vessel diameter in a wide-spread boreal forest tree in western Canada: insights from a large-scale reciprocal transplant experiment. *Functional Ecology* **29**: 1392–1401.

J. Laur, U.G. Hacke (2014) Exploring *Picea glauca* aquaporins in the context of needle water uptake and xylem refilling. *New Phytologist* **203**: 388-400.

J. Laur, U.G. Hacke (2013) Transpirational demand affects aquaporin expression in poplar roots. *Journal of Experimental Botany* **64**: 2283–2293.

L. Plavcová, U.G. Hacke, A.M. Almeida-Rodriguez, E. Li, C.J. Douglas (2013) Gene expression patterns underlying changes in xylem structure and function in response to increased nitrogen availability in hybrid poplar. *Plant, Cell and Environment* **36**: 186-199.

L. Plavcová, U.G. Hacke (2012) Phenotypic and developmental plasticity of xylem in hybrid poplar saplings subjected to experimental drought, nitrogen fertilization and shading. *Journal of Experimental Botany* **63**: 6481-6491.

U.G. Hacke, L. Plavcová, A. Almeida-Rodriguez, S. King-Jones, W. Zhou, J.E.K. Cooke (2010) Influence of nitrogen fertilization on xylem traits and aquaporin expression in stems of hybrid poplar. *Tree Physiology* **30**: 1016-1025.

U.G. Hacke, J.S. Sperry, J.K. Wheeler, L. Castro (2006) Scaling of angiosperm xylem structure with safety and efficiency. *Tree Physiology* **26**: 689-701.

U.G. Hacke, J.S. Sperry (2001) Functional and ecological xylem anatomy. *Perspectives in Plant Ecology, Evolution and Systematics* **4**: 97-115.

U.G. Hacke, J.S. Sperry, B.E. Ewers, D.S. Ellsworth, K.V.R. Schäfer, R. Oren (2000) Influence of soil porosity on water use in *Pinus taeda*. *Oecologia* **124**: 495–505.

CURRENT TEACHING

Instructor, RenR603 Graduate Research Skills. First year graduate students.

Co-instructor (50% responsibility), PLSC221 Introductory Plant Science. Fall and winter terms. Second year undergraduates.

CURRENT UNIVERSITY SERVICE

Alternate of the chair, Departmental Graduate Program Committee

Member, University Teaching Awards Committee. Chair from 2015-2017.