

## CURRICULUM VITAE ANDREA GANTHALER, PHD

Date and place of birth: 1987; Meran (Italy)

Languages: German (native), English (fluent), Italian (advanced)

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### ACADEMIC AND PROFESSIONAL CAREER

10/2020 – present **Senior Scientist (PostDoc)**, University of Innsbruck

09/2019 – 11/2019 **Guest researcher** at Swiss Federal Institute for Forest, Snow and Landscape Research WSL

09/2016 – 08/2020 **Postdoc** researcher in the group Ecophysiology, Department of Botany, University of Innsbruck

06/2016 PhD in Plant Physiology

**PhD thesis:** “Infection of Norway spruce by *Chrysomyxa rhododendri*: analyses of infection dynamics, resistance mechanisms and implications for subalpine forests“ (Department of Botany, University of Innsbruck, supervisors: Stefan Mayr, Ilse Kranner).

01/2016 – 08/2016 L’Oreal **Fellowship** ‘For Woman in Science’

01/2015 – 12/2015 Junior researcher at alpS – Centre for Climate Change Adaptation, Innsbruck

01/2014 – 12/2014 **Doctoral fellowship** (Südtiroler Nachwuchs-Förderung)

01/2013 – 12/2013 **Junior researcher** at alpS – Centre for Climate Change Adaptation, Innsbruck

09/2012 Master Degree in Botany, University of Innsbruck

**Master thesis:** “Hydraulic architecture of alpine dwarf shrubs”

02/2010 – 12/2012 Project-related **freelance work** for the Natural Museum Bozen (Italy): Restoration of the Herbarium Huter

10/2009 Bachelor Degree in Biology, University of Innsbruck

### POSTGRADUATE EDUCATION

01/2015 – present **Project management** training seminars (proposal writing, management and administration of third-party funds, project management); University of Innsbruck

06/2019 Workshop in **Quantitative wood anatomy using ROXAS**, International Training School, San Vito, Italy

10/2017 **Science Communication** training; Foundation Klaus Tschira (Heidelberg, Germany) and National Institute for Science Communication (Karlsruhe, Germany)

### TEACHING

19/2020 – present **Bachelor program Biology:** courses ‘Fundamentals of Scientific Working’, ‘Experimental Botany’, and ‘Plant Anatomy’ (University of Innsbruck); Supervision of Bachelor and Master students.

10/2019 – 09/2020 **Lecturer**, Institute of Microbiology, University of Innsbruck

02/2016 – 12/2016 **Lecturer**, Institute of Pharmacy, University of Innsbruck

## **SELF-ACTIVE ACQUIRED THIRD-PARTY-FUNDS**

1. “Healthy alpine forests: New insights in spruce pathogen response by immunohistochemistry”, Research Centre Mountain Agriculture, 05/2021 – 12/2021, € 3,400.
2. “Establishment and implementation of an image analysis method for quantification of fungal infections in spruce forests”, 09/2016 – 12/2016, Tirolean Science Fund; € 10,000.
3. “Dwarf Shrubs - Hydraulic architecture of low growing woody alpine plants”, 01/2016 – 08/2016, Austrian Academy of Sciences (ÖAW) and L’Oreal Austria; € 20,000.

## **ONGOING PARTICIPATION IN FUNDED RESEARCH PROGRAMS**

1. “Freezing induced xylem dysfunction and repair” (FWF, I4918), PI Dr. Stefan Mayr, 01/2021 – 12/2023, Austrian Science Fund, € 291,436.
2. “The effect of fertilization on seedling hydraulics” (FWF Lise Meitner, M3204), PI Dr. Feng Feng, 04/2022 – 04/2024, € 177.980.
3. “WaldFIT - Climate smart forests: provenance selection and planting methods” (Waldfonds Austria), PI Dr. Marcela van Loo/BFW, 08/2021 – 09/2024.
4. “Drought acclimation and recovery of beech and Norway spruce” (FWF, I3724), PI Dr Barbara Beikircher, 01/2019 - 12/2022, € 239,022.

## **AWARDS**

Excellence grant (Federal Ministry for Education, Science and Culture Austria, 2018); *Promotio sub auspiciis praesidentis* (2018); L’Oreal Austria Fellowship (2016); Innovation Award (IVB, 2014); Appreciation Award (Federal Ministry for Science and Research Austria, 2013); Best graduate award (Südtiroler Sparkasse, 2012); 1<sup>st</sup> poster award (ATSPB, 2012)

## **REVIEWER FOR THE FOLLOWING JOURNALS**

Agricultural and Forest Meteorology – *Biologia Plantarum* – Field Crops Research – Forest Pathology – Trees

## **CONGRESSES**

### **Oral presentations:**

1. International Mountain Conference (IMC), Innsbruck, 11-15 Sept 2022: Effects of snow cover change on freezing induced xylem dysfunctions in subalpine woody species.
2. International Mountain Conference (IMC), Innsbruck, 9-12 Sept 2019: Pathogen damages in mountain forests: direct and indirect effects of altered climatic conditions.
3. 22th congress Austrian Society of Plant Biology (ATSPB), Graz, 05.-07.04.2018: Complex patterns in xylem hydraulics of subalpine dwarf shrubs.
4. Austrian Research Centre for Forests, Vienna, 24 February 2015: Establishment of *C. rhododendri*-resistant spruce trees & analysis of resistance mechanisms.
5. Young Scientists in Contest, Davos, Switzerland, 10-11 Sept 2014: Analysis of infection dynamics and establishment of needle rust resistant trees.
6. 20<sup>th</sup> congress Austrian Society of Plant Biology (ATSPB), Lunz, Austria, 19-21 June 2014: Establishment of *Chrysomyxa*-resistant Norway spruce trees.

7. 15<sup>th</sup> Austrian Climate Day, Innsbruck, Austria, 2-4 April 2014: Establishment of Norway spruce trees with resistance to needle bladder rust.

### Invited talks and workshops

8. Showcasing young Austrian scholars and scientists, Austrian Cultural Forum Ottawa, Canada (online), 18 Mar 2021: Mountain Forests: Will stress for trees increase and what are the consequences?
9. Lecture series 'forst-gen-ethik'. Austrian Centre for Forests 26 Nov 2018: Innovative genetic & biochemical approaches to establish resistant trees.
10. European Forum Alpbach, Alpbach, Austria, 26 August 2018: Diversity and resilience of plants and ecosystems in mountain areas
11. BRG/BORG Dornbirn-Schoren, Austria, 19 December 2016: Women in Science – Enthusiasm for Research.

### TEN MOST IMPORTANT PUBLICATIONS (REVIEWED)

1. Salomón R, Peters R, Zweifel R, Sass-Klaassen U, Stegehuis A, Smiljanic M, Poyatos R, Babst F, Cienciala E, Fonti P, Lerink B, Lindner M, Martínez-Vilalta J, Mencuccini M, Nabuurs GJ, van der Maaten E, von Arx G, Bär A, Akhmetzhanov L, Balanzategui D, Bellan M, Bendix J, Berveiller D, Blaženec M, Čada V, Carraro V, Cecchini S, Chan T, Conedera M, Delpierre N, Delzon S, Ditmarová L, Dolezal J, Dufrêne E, Edvardsson J, Ehekircher S, Forner A, Frouz J, **Ganthaler A**, et al. (2022) The 2018 European heatwave led to stem dehydration but not to consistent growth reductions. *Nature Communications* 13, 28. DOI: 10.1038/s41467-021-27579-9
2. **Ganthaler A**, Bär A, Dämon B, Losso A, Nardini A, Dullin C, Tromba G, von Arx G, Mayr S (2022). Alpine dwarf shrubs show high proportions of non-functional xylem: Visualization and quantification of species-specific patterns. *Plant, Cell, and Environment*; 45, 55-68. DOI: 10.1111/pce.14226
3. Walthert L, **Ganthaler A**, Mayr S, Saurer M, Waldner P, Walser M, Zweifel R, Von Arx G (2021) From the comfort zone to crown dieback: Sequence of physiological stress thresholds in mature European beech trees across progressive drought. *Science of the Total Environment* 753, 141792. DOI: 10.1016/j.scitotenv.2020.141792
4. Trujillo-Moya C, **Ganthaler A**, Stöggli W, Kranner I, Schuler S, Ertl R, Schlosser S, George JP, Mayr S (2020). RNA-Seq and secondary metabolite analyses reveal a putative defence-transcriptome in Norway spruce (*Picea abies*) against needle bladder rust (*Chrysomyxa rhododendri*) infection. *BMC Genomics* 21, 336. DOI: 10.1186/s12864-020-6587-z
5. **Ganthaler A**, Marx K, Beikircher B, Mayr S. 2019. Are hydraulic patterns of lianas different from trees? New insights from *Hedera helix*. *Journal of Experimental Botany* 70, 2811-2822. DOI: 10.1093/jxb/erz071
6. Losso A, Bär A, Dämon B, Dullin C, **Ganthaler A**, Petruzzellis F, Savi T, Tromba G, Nardini A, Mayr S, Beikircher B. 2019. Insights from in vivo micro-CT analysis: testing the hydraulic vulnerability segmentation in *Fagus sylvatica* and *Acer pseudoplatanus* seedlings. *New Phytologist* 221, 1831-1842. DOI: org/10.1111/nph.15549
7. **Ganthaler A**, Stoggl W, Kranner I, Mayr S. 2017. Foliar phenolic compounds in Norway spruce with varying susceptibility to *Chrysomyxa rhododendri*: analyses of seasonal and infection-induced accumulation patterns. *Frontiers in Plant Science* 8, 1173. DOI: 10.3389/fpls.2017.01173
8. **Ganthaler A**, Stoggl W, Mayr S, Kranner I, Schuler S, Wischnitzki E, Sehr EM, Fluch S, Trujillo-Moya C. 2017. Association genetics of phenolic needle compounds in Norway spruce with variable susceptibility to needle bladder rust. *Plant Molecular Biology* 94, 229-251. DOI: 10.1007/s11103-017-0589-5
9. Nolf M, Rosani A, Beikircher B, **Ganthaler A**, Mayr S. 2016. Herb hydraulics: Inter- and intraspecific variation in three *Ranunculus* species. *Plant Physiology* 170, 2085-2094. DOI: 10.1104/pp.15.01664
10. **Ganthaler A**, Mayr S. 2015. Dwarf shrub hydraulics: two *Vaccinium* species (*V. myrtillus*, *V. vitis-idaea*) of the European Alps compared. *Physiologia Plantarum* 155, 424-434. DOI: 10.1111/ppl.12333