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**Websites:** <http://melissa.dawes.work> (research)  
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**Date of Birth:** 21 September 1982

**Citizenship:** United States of America

**Marital Status:** married (maiden name: Melissa Martin), two children



## Education

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Ph.D. 2010 Plant Ecology, Botanical Institute, University of Basel (Basel, Switzerland) - *Summa cum laude*

M.Sc. 2007 Ecosystem Science, College of Forest Resources, University of Washington (Seattle, WA, USA)

M.L.A. 2007 Landscape Architecture, College of Built Environments, University of Washington (Seattle, WA)

B.Sc. 2003 Ecology and Evolutionary Biology, University of Michigan (Ann Arbor, MI, USA) - *Summa cum laude*

## Professional Experience

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- 2014-present Research scientist, Swiss Federal Institute for Forest, Snow and Landscape Research – WSL (Birmensdorf, Switzerland). 50% position
- *Forest Soils and Biogeochemistry*. Carbon, nitrogen and water dynamics in Swiss ecosystems in the face of global environmental change; treeline patterns along a latitudinal gradient in the Ural mountains, Russia.
  - *Ecophysiology*. Tree water relations in forest ecosystems throughout Switzerland.
- 2014-present Scientific English contract editor, Swiss Federal Institute for Forest, Snow and Landscape Research
- Editing of manuscripts, cover letters and reviewer responses for journals, books and thesis papers
  - Experience in ecology, biogeochemistry, microbiology, botany, forestry, geography, engineering, landscape planning and snow science.
- 2010-2014 Postdoctoral researcher, WSL Institute for Snow and Avalanche Research - SLF (Davos, Switzerland). *Mountain forests and alpine ecosystems*.
- Ecological research for a global change field experiment located at the alpine treeline.
  - Statistical analysis and botanical field work for a study about changes in floral biodiversity on mountain summits located throughout the Swiss Alps.
- 2007-2010 PhD dissertation research, University of Basel Botanical Institute and WSL Institute for Snow and Avalanche Research - SLF (Davos, Switzerland).
- *Dissertation*: Plant responses to long-term *in situ* CO<sub>2</sub> enrichment and soil warming at treeline in the Swiss Alps
  - Advisors: Prof. Christian Körner (U. Basel), Dr. Christian Rixen (WSL-SLF), Dr. Frank Hagedorn (WSL) and PD Dr. Stephan Hättenschwiler (CEFE-CNRS)
- 2004-2007 M.Sc. and M.L.A. thesis research, University of Washington (Seattle, WA, USA).
- *M.Sc. thesis*: Native plant performance on a Seattle green roof (advisor: Prof. Thomas Hinckley)
  - *M.L.A. thesis*: Green Roofs in the Pacific Northwest: region-specific considerations for native plant performance (advisor: Prof. Iain Robertson)
- 2005-2006 Student Intern, Seattle Public Utilities Water Quality Monitoring Team (Seattle, WA, USA).
- Assessing the health of urban Seattle streams through collection and analysis of hydrological data and measurements of aquatic and riparian habitat value.

## Funding, Awards and Scholarships

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2014	Swiss Confederation COST Action SENFOR (ES1203). <i>Alpine treelines in a warmer world: synthesis of a nine-year CO<sub>2</sub> enrichment and six-year soil heating experiment</i> . Project C14.0037. CHF 162,230
2011	WSL Internal Grant. <i>Seizing the treasure: final harvest of the Stillberg CO<sub>2</sub> x warming experiment (and beyond)</i> . CHF 119,100
2011	PhD Dissertation Award of the Ecological Society of Germany, Austria and Switzerland (GfÖ). €1500
2008	Honour Award for Master's thesis, Washington Chapter American Society of Landscape Architects
2006-2007	Byron and Alice Lockwood, Stanley Gessel, and Riffe Family Endowed Scholarships, University of Washington, College of Forest Resources
2006	Honour Award for group project: Envisioning Seattle's green infrastructure for the next century, Washington Chapter American Society of Landscape Architects
2005-2006	Jay Bee Memorial and Matsutaro Kawaguchi Endowed Scholarships, University of Washington, Department of Landscape Architecture
2000-2003	Richard and Susan Rogel Scholarship, University of Michigan
2000-2003	James B. Angell Scholar, University of Michigan
2001	William J. Branstrom Freshman Prize, University of Michigan

## International Scientific Meetings *(published abstracts & oral presentations)*

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2015	Global Change and the World's Mountains, Mountain Research Initiative Conference, Perth, UK. (abstract 31-4)
2014	Ecological Society of America Annual Meeting, Sacramento, CA, USA. (poster 48809)
2013	Clim Tree 2013, Zürich, Switzerland. (session 4)
2013	European Geosciences Union Annual Meeting, Vienna, Austria. (poster, EGU2013-4085)
2011	Ecological Society of Germany, Austria and Switzerland Annual Meeting, Oldenburg, Germany. (invited presentation during award ceremony)
2011	Ecological Society of America Annual Meeting, Austin, TX, USA. (abstract COS 126-4)
2010	Global Change and the World's Mountains, Mountain Research Initiative Conference, Perth, UK. (session 4.1)
2009	British Ecological Society Annual Meeting, Hatfield, UK. (poster, session D)
2009	Ecological Society of America Annual Meeting, Albuquerque, NM, USA. (abstract COS 38-1)
2008 & 2009	Swiss Global Change Day, Bern, Switzerland. (poster)
2007	Greening Rooftops for Sustainable Communities Conference, Minneapolis, MN, USA. (session 3.4)

## Additional Professional Activities and Skills

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**Associations:** Ecological Society of America (ecophysiological ecology section); British Ecological Society (plant environmental physiology group); Society for Editors and Proofreaders (SfEP)

**Peer reviews:** Annals of Botany; Arctic, Antarctic & Alpine Research; American Journal of Botany; Biology Letters; Ecology; Ecology and Evolution; Forest Ecology and Management; Functional Ecology; Journal of Biogeography; Journal of Ecology; Plant Ecology and Diversity; Oecologia; Oikos; Plant Science; PLOS ONE; Proceedings of the National Academy of Science

**Computer skills:** R; SigmaPlot; ArcGIS; Microsoft Office; Adobe Acrobat, Photoshop and InDesign; AutoCAD

**Outdoor pursuits:** cycling, running, alpine and Nordic skiing, backpacking and rock climbing  
Swiss Alpine Marathon, 30 July 2011: first place in women's 42 km race

## ISI Publications

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Frei, E., Bianchi, E., Bernareggi, G., Bebi, P., **Dawes, M.A.**, Brown, C.; Trant, A., Mamet, S., Rixen, C. Disentangling biotic and abiotic drivers of tree seedling recruitment across an alpine treeline ecotone. *Submitted*.

Steinbauer, M.J., Grytnes, J.-A., Jurasinski, G. *et al.* Climate warming accelerates the increase in plant species richness on European mountain summits. *Submitted*.

Anadon-Rosell, A., **Dawes, M.A.**, Fonti, P., Hagedorn, F., Rixen, C., von Arx, G. Linking growth and functional xylem anatomy in the dwarf shrub *Vaccinium myrtillus* in a CO<sub>2</sub> enrichment and soil warming experiment at treeline. *Submitted*.

Prendin, A.L., Petit, G., Fonti, P., Rixen, C., **Dawes, M.A.**, von Arx, G. Axial xylem architecture of *Larix decidua* exposed to CO<sub>2</sub> enrichment and soil warming at the treeline. *Functional Ecology*. In press.

Solly, E., Lindahl, B.D., **Dawes, M.A.**, Peter, M., Souza, R.C., Rixen, C., Hagedorn, F. Experimental soil warming shifts the fungal community composition at the alpine treeline. *New Phytologist*. In press. doi:10.1111/nph.14603.

**Dawes, M.A.**, Schleppei, P. and Hagedorn, H. The fate of nitrogen inputs in a warmer alpine treeline ecosystem: a <sup>15</sup>N labelling study. *Journal of Ecology*. In press. doi:10.1111/1365-2745.12780.

Souza, R.C., Egli, S., **Dawes, M.A.**, Graf, F., Hagedorn, F., Clement, C.R., Nagy, L., Rixen, C., Solly, E. and Peter, M. Soil warming and CO<sub>2</sub> enrichment effects on extracellular enzyme activities at alpine treeline. *Plant and Soil*. In press. doi: 10.1007/s11104-017-3235-8.

**Dawes, M.A.**, Schleppei, P., Hättenschwiler, S., Rixen, C. and Hagedorn, H. 2017. Soil warming opens the nitrogen cycle at the alpine treeline. *Global Change Biology* 23 (1): 421-434.

Brunner, I., Herzog, C., **Dawes, M.A.**, Arend, M. and Sperisen, C. 2015. How tree roots respond to drought. *Frontiers in Plant Science* (6) 547.

Karbin, S., Hagedorn, F., **Dawes, M.A.** and Niklaus, P.A. 2015. Does treeline soil warming affect soil methane fluxes and the spatial micro-distribution of methanotrophic bacteria? *Soil Biology and Biochemistry* (86) 164-171.

Myers-Smith, I.H., Elmendorf, S., Beck, P., Wilmking, M., Hallinger, M., Blok, D., Tape, K.D., Rayback, S.A., Macias-Fauria, M., Forbes, B.C., Speed, J.D.M., Boulanger-Lapointe, N., Rixen, C., Lévesque, E., Schmidt, N.M., Baittinger, C., Trant, A.J., Hermanutz, L., Siegwart Collier, L., **Dawes, M.A.**, Lantz, T., Weijers, S., Jørgensen, R.H., Buchwal, A., Buras, A., Naito, A.T., Ravolainen, V., Schaepman-Strub, G., Wheeler, J., Wipf, S., Guay, K., Hik, D. and Vellend, M. 2015. Climate sensitivity of shrub growth across the tundra biome. *Nature Climate Change* (5) 887–891.

**Dawes, M.A.**, Philipson, C.D., Fonti, P., Bebi, P., Hättenschwiler, S., Hagedorn, F. and Rixen, C. 2015. Soil warming and CO<sub>2</sub> enrichment induce biomass shifts in alpine treeline vegetation. *Global Change Biology* (21:5) 2005-2021.

Myers-Smith, I.H., Hallinger, M., Wilmking, M., Blok, D., Sass-Klaassen, U., Rayback, S.A., Weijers, S., Trant, A., Tape, K.D., Naito, A.T., Wipf, S., Rixen, C., **Dawes, M.A.**, Wheeler, J., Buchwal, A., Baittinger, C., Fauria, M.M., Forbes, B.C., Levesque, E., Boulanger-Lapointe, N., Beil, I. and Ravolainen, V. 2015. Methods for measuring arctic and alpine shrub growth: a review. *Earth-Science Reviews* (140) 1-13.

Anadon-Rosell, A., Rixen, C., Cherubini, P., Wipf, S., Hagedorn, F. and **Dawes, M.A.** 2014. Growth and phenology of three dwarf shrub species in a six-year soil warming experiment at the alpine treeline. *PLOS ONE* (9:6) e100577.

**Dawes, M.A.**, Zweifel, R., Dawes, N., Rixen, C. and Hagedorn, F. 2014. CO<sub>2</sub> enrichment alters diurnal stem radius fluctuations of 36-year-old *Larix decidua* growing at the alpine treeline. *New Phytologist* (202:4) 1237-1248.

Oberbauer, S.F., Elmendorf, S.C., Troxler, T., Hollister, R.D., Rocha, A., Bret-Harte, S., **Dawes, M.A.**, Fosaa, A.M., Høye, T.T., Henry, G.H.R., Jarrad, F., Jonsdottir, I.S., Klanderud, K., Klein, J.A., Molau, U., Rixen, C., Schmidt, N.M., Shaver, G., Slider, R., Totland, O., Wahren, C.H., Welker, J.M. 2013. Phenological responses of tundra plants to background climate variation tested using the International Tundra Experiment (ITEX). *Phil. Trans. R. Soc. B.* (368) 20120481.

Streit, K., Rinne, K.T., Hagedorn, F., **Dawes, M.A.**, Saurer, M., Hoch, G., Werner, R.A., Buchmann, N. and Siegwolf, R.T. 2013. Tracing fresh assimilates in *Larix decidua* exposed to elevated CO<sub>2</sub> and soil warming at the alpine treeline using compound-specific stable isotope analysis. *New Phytologist* (197:3) 838-849.

**Dawes, M.A.**, Hagedorn, F., Handa, I.T., Streit, K., Ekblad, A., Rixen, C., Körner, C. and Hättenschwiler, S. 2013. An alpine treeline in a CO<sub>2</sub>-rich world: synthesis of a nine year CO<sub>2</sub> enrichment study. *Oecologia* (171:3) 623-637.

Rixen, C., **Dawes, M.A.**, Wipf, S. and Hagedorn, F. 2012. Evidence of enhanced freezing damage in treeline plants during six years of CO<sub>2</sub> enrichment and soil warming. *Oikos* (121) 1532-1543.

Barbeito, I., **Dawes, M.A.**, Rixen, C., Senn, J. and Bebi, P. 2012. Factors driving survival and growth at treeline: a 30-year experiment of 92,000 conifers. *Ecology* (93:2) 389-401.

**Dawes, M.A.**, Hagedorn, F., Zumbunn, T., Handa, I.T., Hättenschwiler, S., Wipf, S. and Rixen, C. 2011. Growth and community responses of alpine dwarf shrubs to *in situ* CO<sub>2</sub> enrichment and soil warming. *New Phytologist* (191:3) 806-818.

**Dawes, M.A.**, Hättenschwiler, S., Bebi, P., Hagedorn, F., Handa, I.T., Körner, C. and Rixen, C. 2011. Species-specific tree growth responses to nine years of CO<sub>2</sub> enrichment at the alpine treeline. *Journal of Ecology* (99) 383-394.

**Martin, M.A.**, Gavazov, K., Hättenschwiler, S., Körner, C. and Rixen, C. 2010. Reduced early growing season freezing resistance in alpine treeline plants under elevated atmospheric CO<sub>2</sub>. *Global Change Biology* (16:3) 1057-1070.

Hagedorn, F., **Martin, M.A.**, Rixen, C., Rusch, S., Zürcher, A., Siegwolf, R., Wipf, S., Escape, C., Roy, J. and Hättenschwiler, S. 2010. Short-term responses of ecosystem carbon fluxes to experimental soil warming at the Swiss alpine treeline. *Biogeochemistry* (97:1) 7-19.