

# CURRICULUM VITAE

**Dr. Zachary E. Kayler**  
**Assistant Professor**

University of Idaho  
Department of Soil Water Systems  
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## PROFESSIONAL EXPERIENCE

**Assistant Professor**, University of Idaho, Dept. of Soil and Water Systems, 2017- Present  
**Visiting Scientist**, Center for Accelerator Mass Spectrometry, LLNL, 2015-2018  
**Scientific Fellow**, Institute for Landscape Biogeochemistry, ZALF, 2015- 2018  
**Research Biologist**, USDA Forest Service, Northern Research Station, 2015-2017  
**Senior Scientist** (tenured), Institute for Landscape Biogeochemistry, ZALF, 2011- 2015  
**Post-Doctoral Researcher**, Institute for Landscape Biogeochemistry, ZALF, 2009-2011

## EDUCATION

### Doctor of Philosophy

Forest Science, Oregon State University, Corvallis, Department of Forest Science, 2009

### Master of Science

Range Ecology and Management, College of Natural Resources, University of California, Berkeley, 2004

### Bachelor of Science

Natural Resource Management, Department of Environmental, Science, Policy & Management, University of California, Berkeley, 2001

## FUNDING

Currently Running projects:

Landscape-Scale Biodiversity and the Balancing of Provisioning, Regulating and Supporting Ecosystem Services. BiodivERsA/FACCE-JPI EPSS (2015-2018) – Z.E. Kayler Co-Principle Investigator (150,000€), J.Joshi, M.Rillig, J. Petermann, S.Fontaine, C.Scherber, J.Voltas, I.Seidl, F.Hagedorn, A.Gessler, B.Frey (856,000€).

Previous Funding

The Agro-potential of Western Siberia Territories in a Changing Climate. European Research Area FP7 (ERA-NET) (2012-2015)– Z.E. Kayler as Co-Principle Investigator (20,000€) with collaborators Delphine Derrien (INRA, FR) and Bernd Zeller (INRA, FR).

LandScales – Connecting processes and structures driving the landscape carbon dynamics over scales (2012-2015). Leibniz Society SAW (1.5 million €)- Z.E. Kayler as collaborator with PIs Arthur Gessler and Katrin Premke (ZALF).

Global Change effects on Forest Understory: Interactions between drought and land-use intensity. DFG Priority Program 1374 – Biodiversity Exploratories (2011-2014). – Z.E. Kayler as Co-applicant. (90,000€+ PhD student)

German-New Zealand Scientific Exchange, Funded Travel to Australia to perform research with colleagues from Landcare Research and University of Sydney, 2010-2011, DAAD travel grant (\$11,000 US)

## PUBLICATIONS

*In review (\* student publication)*

**Kayler, Z.E.**, M. Badrian, A. Frackowski, H. Rieckh, K.N. Nitzsche, T. Kalettka, A. Gessler. [Water and sediment temporal and spatial dynamics of ephemeral kettle holes across an agricultural catchment](#) (*in review, Ecohydrology*)

\*Nitzsche, K.N., M. Kaiser, K. Premke, A. Gessler, R. Ellerbrock, C. Hoffmann, A. Kleeberg, **Z.E. Kayler** [Organic matter distribution and retention along transects from hilltop to kettle hole within an agricultural landscape](#). (*submitted, Biogeochemistry*)

\*Felsmann, K, **Z.E. Kayler**, H. Puhlmann, A. Ulrich, A. Gessler. [Responses of the structure and function of the understory plant community to precipitation reduction and forest management in forest ecosystems across Germany](#). (*in revision, Annals of Forest Science*)

Milcu, A., A. Gessler, C. Roscher, L. Rose, **Z.E. Kayler**, D. Bachmann, K. Pirhofer-Walzl, T. Buchmann, M. Scherer-Lorenzen, J. Roy. [Plant diversity, canopy nitrogen allocation and carbon uptake in grasslands: are there any links?](#) (*in review, Scientific Reports*)

Milcu, A., R. Puga-Freitas, A. Ellison, M. Blouin, S. Scheu, T. Girin, G.T. Freschet, L. Rose, M. Scherer-Lorenzen, S. Barot, J-C. Lata, N. Eisenhauer, A. Gigon, A. Weigelt, A. Hansart, A. Greiner, A. Pando, A. Gessler, C. Grignani, C. Thielen, D. Assandri, G. Gleixner, J-F. Le Galliard, K. Urban-Mead, L. Zavattaro, M. Müller, M. Lange, M. Lukac, M. Lörch, M. Bonkowski, N. Mannerheim, N. Buchmann, O. Butenschoen, P. Rotter, R. Seyhun, S. Devidal, S. Cesarz, **Z. Kayler** and J. Roy. [Systematic variability increases the reproducibility of microcosm ecological studies](#) (*in revision, Nature Ecology and Evolution*)

*Published*

- 1 Milcu, A., A. Gessler, C. Roscher, L. Rose, **Z.E. Kayler**, D. Bachmann, K. Pirhofer-Walzl, T. Buchmann, M. Scherer-Lorenzen, J. Roy. [Plant diversity, canopy nitrogen allocation and carbon uptake in grasslands: are there any links?](#) (*in review, Scientific Reports*)
- 2 Resco de Dios V., Gessler A., Ferrio J.P., Alday J.G., Bahn M., del Castillo J., Devidal S., García-Muñoz S., **Kayler Z.**, Landais D., Martín-Gómez P., Milcu A., Piel C., Pirhofer-Walzl K., Ravel O., Salekin S., Tissue D.T., Tjoelker M.G., Voltas J. & Roy J. 2017 [Circadian rhythms regulate the environmental responses of net CO<sub>2</sub> exchange in bean and cotton canopies](#). *Agricultural and Forest Meteorology*, **239**, 185-191.
- 3 Gessler, A., J. Roy, **Z. Kayler**, J.P. Ferrio, J.G. Alday, M. Bahn, J. del Castillo, S. Devidal, S. García-Muñoz, D. Landais, P. Martín, A. Milcu, C. Piel, K. Pirhofer-Walzl, L. Galiano, M. Schaub, M. Haeni, O. Ravel, S. Salekin, D.T. Tissue, M.G. Tjoelker, J. Voltas, V. Resco de Dios. [Night and Day — Circadian regulation of night-time dark respiration and light-enhanced dark respiration in plant leaves and canopies](#). *Environmental and Experimental Biology*, 137, 14-25.

- 4 Junker, L.V., A. Kleiber, K. Jansen, H. Wildhagen, M. Hess, **Z. Kayler**, B. Kammerer, J.P. Schnitzler, J. Kreuzwieser, A. Gessler, I. Ensminger. 2017. [Variation in short-term and long-term responses of photosynthesis and isoprenoid-mediated photoprotection to soil water availability in four Douglas-fir provenances](#). *Scientific Reports*, Art.# 40145
- 5 **Kayler, Z.E.**, C. Keitel, K. Jansen, A. Gessler. 2017. [Experimental evidence of two mechanisms coupling leaf-level assimilation to the rhizosphere](#). *Environmental and Experimental Botany*, 135, 21-26.
- 6 \*Nitzsche, K., T. Kalettka, K. Premke, G. Lischeid, A. Gessler, **Z.E. Kayler**. 2017. [The role of hydroperiod and land-use on kettle hole sediment carbon and nitrogen biogeochemistry](#). *Science of the Total Environment*, 574, 46-56.
- 7 Resco de Dios V., Gessler A., Ferrio J.P., Alday J.G., Bahn M., del Castillo J., Devidal S., García-Muñoz S., **Kayler Z.**, Landais D., Martín-Gómez P., Milcu A., Piel C., Pirhofer-Walzl K., Ravel O., Salekin S., Tissue D.T., Tjoelker M.G., Voltas J. & Roy J. 2016 [Circadian rhythms have significant effects on leaf-to-canopy scale gas exchange under field conditions](#). *GigaScience*, 5, 43.
- 8 Dijkstra, F.A., M. Jenkins, V. de Remy de Courcelles, C. Keitel, M. M. Barbour, **Z.E. Kayler**, M.A. Adams. 2017. [Enhanced decomposition and nitrogen mineralisation sustain rapid growth of \*Eucalyptus regnans\* after wildfire](#). *Journal of Ecology*, 105, 239-236
- 9 \*von Rein, I, **Z.E. Kayler**, K. Premke, A. Gessler. 2016. [Desiccation of sediments affects assimilate transport within aquatic plants and carbon transfer to microorganisms](#). *Plant Biology*, 18, 947-961.
- 10 \*Nitzsche, K., G. Verch, K. Premke, A. Gessler, **Z.E. Kayler**. 2016. [Visualizing land-use and management complexity within biogeochemical cycles of an agricultural landscape](#) *Ecosphere*, 7(5), 1-16.
- 11 \*von Rein, I., A. Gessler. K. Premke, C. Keitel, A. Ulrich, **Z.E. Kayler**. 2016. [Forest understory plant and soil microbial response to an experimentally induced drought and heat-pulse event: the importance of maintaining the continuum](#). *Global Change Biology*, 122, 28671-2874.
- 12 Hommel R., R. Siegwolf, S. Zavadlav, M. Arend, M. Schaub, L. Galiano, M. Haeni, **Z.E. Kayler**, A. Gessler. 2016. [Impact of interspecific competition and drought on new assimilate allocation within trees](#) *Plant Biology*, 18, 785-796.
- 13 Weise, L., A. Ulrich, M. Moreano, A. Gessler, **Z. Kayler**, K. Steger, B. Zeller, K. Rudolph, J. Knezevic-Jaric, K. Premke. 2016. [Desiccation and rewetting of lake sediments causes enhanced carbon turnover and shifts in microbial community composition](#). *FEMS Microbiology Ecology*, 92.
- 14 Premke, K., K. Attermeyer, J. Augustin, A. Cabezas, P. Casper, D. Deumlich, J. Gelbrecht, H. Gerke, A. Gessler, H-P. Grossart, S. Hilt, M. Hupfer, T. Kalettka, **Z.E. Kayler**, G. Lischeid, M. Sommer, D. Zak. 2016. [The importance of landscape complexity for carbon fluxes on the landscape level: Small-scale heterogeneity matters](#). *WIREs Water*, 3:601-617
- 15 **Kayler, Z.E.**, H.J. De Boeck, S. Fatichi, J.M. Grünzweig, L. Merbold, C. Beier, N. McDowell, J. Dukes. 2015. [Experiments to Confront the Environmental Extremes of Climate Change](#). *Frontiers in Ecology and the Environment*, 13, 219-225.
- 16 \*Felsmann, K., M. Baudis, K. Gimbel, **Z.E. Kayler**, R. Ellerbrock, H. Bruelheide, J. Bruckhoff, E. Welk, H. Puhlmann, M. Weiler, A. Gessler, A. Ulrich. 2015. [Soil bacterial community structure response to precipitation reduction and management in forest ecosystems across Germany](#). *PLoS ONE* 10(4).
- 17 Gimbel, K.F., K. Felsmann, M. Baudis, H. Puhlmann, A. Gessler, H. Bruelheide, **Z.E. Kayler**, R.H. Ellerbrock, A. Ulrich, E. Welk, M. Weiler. 2015. [Drought in forest understory ecosystems—a novel rainfall reduction experiment](#). *Biogeosciences*, 12, 961-975.

- 18 Zhou, Y., H. Stuart-Williams, K. Grice, **Z.E. Kayler**, S. Zavadlav, A. Gessler. 2015. [Allocate carbon for a reason: priorities are reflected in the  \$^{13}\text{C}/^{12}\text{C}\$  ratios of plant lipids synthesized via three independent biosynthetic pathways.](#) *Phytochemistry*, 111, 14-20.
- 19 Jansen, K., B. Du, **Z.E. Kayler**, R. Siegwolf, I. Ensminger, H. Rennenberg, B. Kammerer, C. Jaeger, M. Schaub, J. Kreuzwieser, A. Gessler. 2014. [Douglas-fir seedlings show metabolic responses to increased temperature and atmospheric drought.](#) 2014 *PLoS ONE* 9(12): e114165. Doi: 10.1371/journal.pone.0114165
- 20 Baudis, M., R.H. Ellerbrock, K. Felsmann, A. Gessler, K. Gimbel, **Z.E. Kayler**, A. Ulrich, M. Weiler, E. Welk, H. Bruelheide. 2014. [Intraspecific differences in response to rainshelter-induced drought and competition of \*Fagus sylvatica\* L. across Germany.](#) *Forest Ecology and Management*, 330, 283-293
- 21 \*Hentschel, R., S. Rosner, **Z.E. Kayler**, K. Andreassen, I. Børja., S. Solberg, O. Tvieta, E. Priesack, A. Gessler. 2014. [Norway spruce physiological and anatomical predisposition to dieback.](#) *Forest Ecology and Management*, 322, 27-36
- 22 Attermeyer, K., Hornick, T., **Kayler, Z.E.**, Bahr, A., Grossart, H-P, Premke, K. 2014. [Increasing addition of autochthonous to allochthonous carbon in nutrient-rich aquatic systems stimulates carbon consumption but does not alter bacterial community composition.](#) *Biogeosciences*, 11, 1479-1489, doi:10.5194/bg-11-1479-2014
- 23 Hommel, R., R. Siegwolf, M. Saurer, G.D. Farquhar, **Z.E. Kayler**, J.P. Ferrio, A. Gessler. 2014. [Drought response of mesophyll conductance in forest understory species - Impacts on water-use efficiency and interactions with leaf water movement.](#) Doi:10.1111/pp1.12160. *Physiologia Plantarum*, 152, 98-114.
- 24 Gessler A., E. Brandes, K. Keitel, S. Boda, **Z. E. Kayler**, A. Granier, M. Barbour, G. Farquhar, K. Treydte. 2013. [The oxygen isotope enrichment of leaf-exported assimilates - does it always reflect lamina leaf water enrichment?](#) *New Phytologist*, 200:144-157
- 25 Werner, C., Badeck, F., Brugnoli, E., Cohn, B., Cuntz, M., Dawson, T., Gessler, A., Ghashghaie, J., Grams, T. E. E., **Kayler, Z.E.**, Keitel, C., Lakatos, M., Lee, X., Máguas, C., Ogée, J., Rascher, K. G., Schnyder, H., Siegwolf, R., Unger, S., Welker, J., Wingate, L., and Zeeman, M. J. 2012. [Linking carbon and water cycles using stable isotopes across scales: progress and challenges.](#) *Biogeosciences*, 9, 3083-3111. doi:10.5194/bg-9-3083-2012
- 26 **Kayler, Z.E.**, M. Kaiser, A. Gessler, R.H. Ellerbrock, M. Sommer. 2011. [Application of  \$\delta^{13}\text{C}\$  and  \$\delta^{15}\text{N}\$  isotopic signatures of organic matter fractions sequentially separated from adjacent arable and forest soils to identify carbon stabilization mechanisms.](#) *Biogeosciences*, 8, 1985-1999. doi:10.5194/bgd-8-1985-2011
- 27 Offermann, C., J.P. Ferrio, J. Holst, R. Grote, R. Siegwolf, **Z.E. Kayler**, A. Gessler. 2011. [The long way down— are carbon and oxygen isotope signals in the tree ring uncoupled from canopy physiological processes?](#) *Tree Physiology* 31: 1088-1102
- 28 Brüggemann, N., N. Buchmann, A. Gessler, **Z.E. Kayler**, S. Keel, A. Knohl, M. Barthel, O. Gavrichkova, J. Ghashghaie, N. Gomez-Casanovas, C. Keitel, D. Kuptz, S. Palacio, Y. Salmon, Y. Uchida, J. Esperschütz. 2011. [The role of plant-soil interactions in carbon isotope fluxes between the terrestrial biosphere and the atmosphere.](#) *Biogeosciences*, 8, 3457-3489. doi:10.5194/bg-8-3457-2011
- 29 **Kayler, Z.E.**, A. Gessler, N. Buchmann. 2010. [What is the speed of link between above- and belowground processes?](#) *New Phytologist*, 187: 885-888.
- 30 **Kayler, Z.E.**, E.W. Sulzman, W.D. Rugh, A.C. Mix, B.J. Bond. 2010. [Characterizing the impact of diffusive and advective soil gas transport on the measurement and interpretation of the isotopic signal of soil respiration.](#) *Soil Biology and Biochemistry*, 42:435-444
- 31 **Kayler, Z.E.**, M. Hauck, L. Ganio, E.W. Sulzman, T. Pypker, A.C. Mix, B.J. Bond. 2010. [Bias and uncertainty of  \$\delta^{13}\text{CO}\_2\$  isotopic mixing models.](#) *Oecologia* 163: 227-234

- 32 Phillips, C.L., N. Nickerson, D. Risk, **Z.E. Kayler**, C. Andersen, A.C. Mix, B.J. Bond. 2010. [Soil moisture effects on the carbon isotopic composition of soil respiration](#). *Rapid Communications of Mass Spectrometry* 24: 1271-1280
- 33 **Kayler, Z.E.**, E.W. Sulzman, J.D. Marshall, W. Rugh, A. Mix, B.J. Bond. 2008. [A laboratory comparison of two methods used to estimate the isotopic composition of soil  \$\delta^{13}\text{CO}\_2\$  efflux at steady-state](#). *Rapid Communications of Mass Spectrometry* 22: 2533-2538
- 34 Pypker, T., M. Hauck, E. Sulzman, M. Unsworth, A. Mix, **Z. Kayler**, A. Kennedy, H. Barnard, C. Phillips, B.J. Bond. 2008. [Toward using  \$\delta^{13}\text{C}\$  of ecosystem respiration to monitor canopy physiology in complex terrain](#). *Oecologia* 158: 399-410
- 35 **Kayler, Z.E.**, L.B. Fortini, J.J. Battles. 2005. [Group selection edge effects on vascular plant diversity of an old growth mixed conifer forest](#). *Madroño*: Vol. 52, No. 4, pp. 262–266 (Bachelor's Thesis)

### *In preparation*

Premke, K., A. Gessler, M. Gessner, C. Griebler, S. Hilt, **Z.E. Kayler**, L. Klemetsson, Y. Kuzyakov, M. Reichstein, J. Siemens, K. Totsche, A. Wagner, M. Wietere, H-P, Grossart. [Integrating aquatic and terrestrial perspectives to improve insights into organic matter cycling at the landscape scale](#) (*in preparation, Limnology and Oceanography Letters*)

## TEACHING

Lecturer for the *International Summer School on Stable Isotopes in Animal Ecology* Center for Stable Isotope Analysis in Berlin-Brandenburg (summer 2014)

Lecturer for the *Autumn School of Biodiversity*, Slovenia (Autumn 2014)

Lecturer for workshop on *Stable Isotope Analysis of Plant-Soil Interactions*, Slovenia (Summer 2013)

Agroecology Seminar, *An Introduction to Stable Isotopes in Agroecology: Principles and Case Studies*. Brandenburg Technical University, Cottbus, Germany. Group Seminar (2009-2015).

*Stable Isotopes - a universal tool box for plant biology, agriculture and environmental sciences*. Humboldt University, Berlin, Germany. 2009-2013, Co-Instructor.

CSSS 305. *Principles of Soil Science*. Oregon State University Winter 2006. Laboratory Instructor.

ESPM 102A. *Terrestrial Ecosystem Ecology*. U.C. Berkeley Fall 2003. Teacher's Assistant.

## ADVISING & MENTORING

Helene Riechck, Post-doctoral scholar, BASIL project 2016.

Katja Felsmann, PhD student, Biodiversity Exploratories project.

Isabel von Rein, PhD student, Compound specific carbon moieties in the rhizosphere. Expected graduation 2016.

Kai Nitzsche, PhD student, Priming of separated organic matter fractions from soil and sediments sampled from different agricultural land use. Expected graduation 2016.

Felix Brediere, PhD student, Characterizing the isotopic profile of soil water and partitioning seasonal water sources to plants in a latitudinal transect across Siberia. Graduated 2016.

Maria Badrian, M.Sc. student, 4/2015-9/2015, Thesis: Hydro-Biological Investigations of Kettle Holes. Beuth Hochschule Für Technik, Berlin

Adam Frackowski, M.Sc. student, 4/2015-12/2015, Thesis: 4/2015-9/2015, Thesis: Temporäre Untersuchung von Sediment- und Pflanzenproben verschiedener Sölle mittels <sup>13</sup>C- und <sup>15</sup>N-Analyse. Beuth Hochschule Für Technik, Berlin

Graduate mentor for: Zachary Sutton, Oregon State University, Faculty mentor: E.W. Sulzman. Poster: [http://sbi.oregonstate.edu/education/su06interns/Zach\\_Sutton\\_posterphoto.pdf](http://sbi.oregonstate.edu/education/su06interns/Zach_Sutton_posterphoto.pdf)

Graduate mentor for: Phoebe Bass, U.C. Berkeley, Faculty mentor: J.J. Battles. Publication: Red spruce saplings: Indicators for future forest composition in New England forest recovering from acid rain. *Berkeley Scientific* 7:129-134 (peer reviewed undergraduate journal)

#### **AD HOC JOURNAL REFEREE**

*Aquatic Science, Agriculture and Forest Meteorology, Biogeosciences (EGU), Canadian Journal of Forest Research, Ecological Research, Ecosystems, Forest Ecology & Management, JGR-Biogeosciences, JGR-Global Biogeochemical Cycles, Oecologia, Plant and Soil, Plant, Cell and Environment, Plant Ecology & Diversity, Soil Science Society of America Journal, Science of the Total Environment, Tree Physiology, Trees Structure and Function*

#### **INVITATIONS, HONORS & AWARDS**

European Forest Research and Innovation, Scientific Advisory Board Member, 2014-2015  
COST Action meeting invitation: The integration of the vertical dimension of soil C, 2011  
COST Action meeting: Analyzing post-labeling experiments, 2010  
SIBAE Travel Award, Ascona, CH 2010  
NSF Eco-informatics IGERT Fellowship 2004-2005, 2007-2009  
Diversity Advancement Pipeline Fellowship 2005-2006  
BASIN Registration Grant AGU 2007  
Visiting Scholar; Paul Scherrer Institute, CH. Summer 2007.  
BASIN Travel Grant AGU 2005  
SIRFER Stable Isotope Course, University of Utah 2005  
U.C. Berkeley Range Finishing Grant 2004  
Undergraduate Research Fellow, U.C. Berkeley  
DOE Hispanic Scholarship Fund Scholar 1999-2001  
Xi Sigma Pi- forestry honor society

#### **PRESENTATIONS (last 5 years)**

- Gessler, A., F.Hagedorn, L.Galiano, M.Schaub, J.Joseph, M.Arend, R.Hommel, Z. Kayler. Carbon allocation, drought and source-sink relationships in trees. IUFRO 2017, Frieberg
- Kayler, Z., A.Hidy, T.Hartsill. Potential landscape and nutrient constraints on tropical forest biogeochemical resilience. AGU Chapman Conference on Extreme Climate Event Impacts in Aquatic Biogeochemical Cycles and Fluxes, 2017, Puerto Rico
- Kayler, Z., K.Nitzsche, A.Gessler, M.Kaiser, C. Hoffmann, K.Premke, R.Ellerbrock. From hilltop to kettle hole: what trends across the terrestrial-aquatic transition zone are revealed by organic matter stable isotope ( $\delta^{13}\text{C}$  and  $\delta^{15}\text{N}$ ) composition? 2016 AGU Fall Meeting, San Francisco
- Nitzsche, K., K. Premke, A. Gessler, C. Hoffmann, R. Ellerbrock, M. Kaiser, and Z. Kayler. Using  $\delta^{13}\text{C}$  and  $\delta^{15}\text{N}$  of organic matter fractions to better understand C and N dynamics in the aquatic-terrestrial transition zone. 2016 Joint European Stable Isotopes User group Meeting, Ghent, Belgium.
- Thoms, R., J. Muhr, C. Keitel, Z.E. Kayler, O. Gavrichkova, M. Köhler, A. Gessler, and G. Gleixner. 2016 Unraveling carbohydrate transport mechanisms in young beech trees (*Fagus sylvatica* f. *purpurea*) by  $^{13}\text{CO}_2$  efflux measurements from stem and soil. European Geosciences Union General Assembly, Vienna, Austria
- Gavrichkova, O., R. Thoms, J. Muhr, S. Karlowsky, C. Keitel, Z.E. Kayler, C. Calfapietra, A. Gessler, E. Brugnoli, and G. Gleixner. 2016. Does the time of the sampling matter in  $^{13}\text{C}$  pulse labeling and chasing experiments? A case study on beech seedlings. European Geosciences Union General Assembly, Vienna, Austria
- Kayler, Z.E., M. Badrian, Frackowski, K. Nitzsche, H. Reickh, A. Gessler. 2015. Hydroperiod Influence on Kettle Hole Biogeochemistry in NE Germany. American Geophysical Union Fall Meeting, San Francisco
- Kayler, Z.E. 2014. Isotopic approaches to soil carbon dynamics and diversity. Eurasian Soil Science Congress, Antalya, Turkey (Key Note Lecture)
- Brédoire, F., P.A. Barsukov, A. Bashuk, D. Derrien, S. Fontaine, Z. Kayler, P. Nikitich, H. Rieckh, O. Rusalimova, O. Vaishlya, B. Zeller, M. Bakker. 2014. Southwestern Siberia submitted to climate change: is biomass production related to snow cover? BIOGEOMON, Bayreuth, Germany
- Rosner, S., S. Andreassen, I. Børja, L. Dalsgaard, R. Evans, R. Hentschel, Z. Kayler, J. Svetlik, S. Solberg. 2013. International Symposium on Wood Structure in Plant Biology and Ecology, Napoli, Italy.
- Felsman, K., A. Gessler, Z. Kayler, A. Ulrich. 2013. Changes in soil microbial structure of forest ecosystems as a response to drought stress. 2<sup>nd</sup> Thuenen Symposium on Soil Metagenomics. Braunschweig, Germany
- Nitzsche, K., S. Flury, K. Premke, A. Gessler, Z.E. Kayler. 2013. Isoscapes as a tool to capture the complexity of small water bodies interspersed across a moraine landscape managed for agriculture in NE Germany. American Geophysical Union Fall Meeting, San Francisco
- Kayler, ZE. 2013. Ecosystem science in the field and laboratory: the measurement, analysis and manipulation of mass and energy flows. Centro de Investigación Científica Y de Educación Superior de Ensenada, Baja California, Mexico. (*Invited lecture*)
- Gessler, A., Z.E. Kayler, M. Weiler, H. Bruhlheide, R. Ellerbrock, K. Felsmann, I. Von Rein. 2013. Drought effects on forest understory interactions between drought and land-use intensity. Climate Extremes and Biogeochemical Cycles, Seefeld, Austria.
- Kayler, Z, A. Geßler, M. R. Bakker, D. Derrien, I. Loudin, O.Vaishlya, B. Zeller, P. Barsukov. 2012. Experimental strategies to characterize impacts of climate change on agriculture and forest biogeochemistry. International Workshop on the Impact of Climate Change on Forest and Agricultural Ecosystems and Adaptation Strategies, Krasnoyarsk, Russia

- Kayler, Z., C. Keitel, K. Jansen, A. Gessler. 2012. Deciphering the speed of link: assimilate transport belowground via pressure concentration waves in addition to Muench-flow. ComBio, Adelaide, South Australia. (Keitel, oral presentation)
- Hentschel, R., Z. Kayler, A. Gessler. 2012. Tree physiological response to stress – Isotope tree ring analysis of diseased spruce trees, JESIUM, Leipzig, Germany.
- Bakker, M.R., D.L. Lachat, L. August, F. Bredoire, D. Derrien, N. Gallegos, Z. Kayler, N. Laschchinskiy, I. Loudin, S. Milin, P. Nikitich, T. Raudina, O. Rusalimova, O. Vaishlya, B. Zeller, P. Barsukov. 2012. Nutrient capital in southwest Siberian forest soils: outlook for future forest growth or perspectives for agriculture? International Workshop on the Impact of Climate Change on Forest and Agricultural Ecosystems and Adaptation Strategies, Krasnoyarsk, Russia.
- Hornick, T., Attermeyer, K., Kayler, Z., Bahr, A., Grossart, H-P, Premke, K. 2012. Microbial terrestrial C-turnover in freshwater: contrasting effects of dissolved (DOC) and particulate organic carbon (POC) in the water column vs. Sediments. American Society for Limnology and Oceanography Aquatic Sciences Meeting, Shiga, Japan.