UFZ Science Days 2023 IN-PERSON EVENT

■ Nov 1, 2023, 8:30 AM → Nov 2, 2023, 6:30 PM Europe/Berlin

KUBUS Leipzia



Rolf Altenburger (UFZ), Stefanie Baumert (UFZ)

Description

Second UFZ Science Days

On November 1 and 2, 2023, the UFZ Science Days will take place for the second time at KUBUS in Leipzig.

All employees of the UFZ - scientists, PhD students, students, and technical staff as well as interested colleagues from administration and staff - are cordially invited to join.

The goals of the UFZ Science Days 2023 are

- · to provide a stage for inspiring science,
- · to stimulate internal UFZ exchange on research and products from Program-oriented Funding (PoF), and
- · to develop collaborations within the UFZ.



The programme

The first day of the Science Days will be organized around scientific storylines, which are currently being developed on the level of the UFZ Research Units. Through flashtalks UFZ research achievements and the transfer of research results into society will be highlighted.

On the second day, the storyline teams and interested guests will meet to discuss next steps, e.g. to plan the writing phase of the evaluation report for the upcoming UFZ evaluation in 2025. In parallel, a number of workshops, lab tours and additional activities will be facilitated.

Please, take the opportunity to get to know the research at the UFZ even better and get involved in the the different activities. We look forward to you visiting the UFZ Science Days and to your active participation!

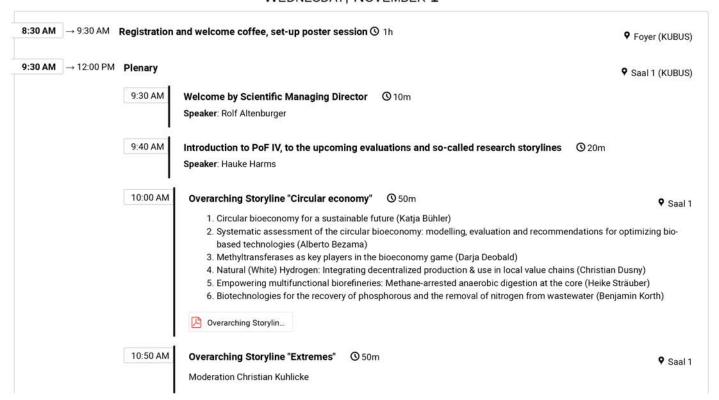
The plenary session on November, 1 will be streamed via this link: https://youtube.com/live/213Zhwub99c



20231027_Science...
Foyerplan_Science...

□ nina.bittorf@ufz.de

WEDNESDAY, NOVEMBER 1



30.10.2023, 12:41 1 von 7

			1. Introduction (Jakob Zscheischler) 2. Changes in flood generation processes: effects on predictability of extremes (Larisa Tarasova) 3. Precipitation trends determine future occurrences of compound hot-dry events (Emanuele Bevacq 4. Using interpretable machine learning to identify climate drivers of yield failure (Lily-belle Sweet) 5. Forests facing extreme compound events (Daniel Doktor) 6. Hot beetles, dying forests, and bad waters (Karsten Rinke) 7. Using text-mining to assess the socio-economic impacts of drought in Germany (Jan Sodoge) 8. Hydro-economic projection of drought impacts and irrigation water demands (Jasmin Heilemann) Proceedings of the process of the			
		11:40 AM	Objectives for Day 1 and Day 2, Q&A © 20m Speaker: Rolf Altenburger	♥ Saal 1		
	12:00 PM → 1:30 P	M Lunch bre	eak with poster session ③ 1h 30m	♥ Foyer (KUBUS)		
	1:30 PM → 2:45 PM	Breakout S	Breakout Session: Storylines, Part I			
		storyline. Yo	Please use the parallel storyline sessions on Day 1 to get informed about the storylines and bring in your potential contributions to a particular storyline. You might also want to contact the responsible persons of the storylines before the Science Days to find out how to best contribute. The storyline session structures may vary. On Day 2 some storyline sessions may be closed sessions.			
		1:30 PM	Storyline "Bending the curve of biodiversity loss under climate change" ① 1h 15m	Saal 1B (KUBUS)		
			Introduction to the storyline (Tiffany Knight) Climate change-ready matching of seed transfer zones to genetic differentiation of grassland plant s	pecies (Johannes		
 Low land-use intensity increases resistance of grasslands to projected future climate and interse (Lotte Korell et al.) Vegetation development in periglacial environments Ingolf Kühn Effects of landscape structure and land-use intensity on the gut microbiome of a generalist pred (Christophe Dominik, Cassidy Slivensky, Jonna Heuscheule, Hafeez UI Haq, Oliver Schweiger, Tes Synthesis of landscape management effects on biodiversity (or: What do Hecate and Yggdrasil I 			Höfner) 3. Low land-use intensity increases resistance of grasslands to projected future climate and inter-annual (Lotte Korell et al.)	al climate variability		
			6. Synthesis of landscape management effects on biodiversity (or: What do Hecate and Yggdrasil have			
			Takola) 7. Can extensive grassland management pay off for farmers during droughts? (Julia Kunkel)			
	8. Rapid adaptation? A narrative of plant community history and diversity (Francesca De Giorgi)					
			Analysis of biodiversity trends using data from the eLTER research infrastructure (Martin Musche)The future of pollinator monitoring (Oliver Schweiger, Mark Frenzel, Christophe Dominik)			
			11. Towards a Deep Learning based individual tree monitoring system: a case study in Halle (Saale) (Tair	mur Khan and Jörg		
			Brünecke) 12. Detecting microbial diversity changes through metabarcoding (Stephanie Jurburg)			
			13. Co-developing the Tailored Empowerment Programs (TEPs) for coastal communities to support their	transformation		
processes toward sustainability and resilience (Diana Dushkova) 14. Converting biodiversity knowledge into actionable knowledge: A glimpse into the new Biodiversity Knowled in Europe (Marie Vandewalle)			nowledge governance			
			Storyline "Bending t Storyline "Bending t.			
		1:30 PM	Storyline "Exploring paths towards multifunctional landscapes: perspectives from modelling & ol 15m	bservation"		
			Moderation Sara König	(10200)		
			1. Introduction (Stephan Thober, Jian Peng)			
			Soil heat extremes can outpace their atmospheric counterpart (Almudena Garcia-Garcia) Soil moisture monitoring from field to continental scales (Steffen Zacharias)			
4. Managing grasslands in multifunctional landscapes: perspectives on modelling & observation		ziska Taubert)				
			5. mQM - the multiscale water quality model (Andreas Musolff)6. A Baseflow Analysis Framework with OGS using mHM data products (Thomas Kalbacher)			
			7. Development & testing of a scalable reservoir module for mHM (Luis Samaniego)			
			Storyline_"Exploring			
		1:30 PM	Storyline "Shaping energy landscapes sustainably"	Saal 1D (KUBUS)		
			1. Introduction (Paul Lehmann, Danial Esmaeili, Nora Mittelstädt, and Danny Otto)	, ,		
			Working groups to discuss future avenues for the storyline:a) Coupling energy and landscape models (Chair: Danial Esmaeili)			
			b) Approaches for a holistic assessment of carbon dioxide removal (CDR) (Chair: Danny Otto)			
			c) Monitoring (energy) landscape changes (Chair: Nora Mittelstädt)d) Governing (energy) land use (Chair: Paul Lehmann)			
			Storyline "Shaping e			
		1:30 PM	Storyline "Toxic-free water resources for healthy people and ecosystems under global change"	③ 1h 15m		
				Saal 1C (KUBUS)		



5:15 PM → 6:00 PM Breakout Session: Debriefing with Storyline Representatives
Conveners: Hauke Harms, Rolf Altenburger



4 von 7 30.10.2023, 12:41

Participants have the opportunity to see a demonstration of the recent advances of our analytical toolboxes and will have the

a direct analysis both of the dissolved and the solid phases.

chance to discuss possible applications for their own research.

Speakers: Hryrory Stryhanyuk, Matthias Schmidt, Oliver Lechtenfeld 9:30 AM Lab tour "The phytotechnicum as a platform for research on bioremediation with constructed wetlands" ♠ Meeting Point: KUBUS During the tour, the Phytotechnicum at the UFZ will be presented. The Phytotechnicum is a greenhouse as research infrastructure with model systems for wetland research. The main structure is a bioreactor specifically designed for wetland research, providing standardized flow and thus a standardized experimental and sampling platform under environmental control. Due to the small size of the systems, active experiments with changing loading or inflow conditions are possible, in contrast to constructed wetlands in active use for waste water treatmet, where normally only passive experiments are possible. More complex experimental systems are located in the second chamber of the Phytotechnicum, where the systems operate under more realistic conditions. Speaker: Uwe Kappelmeyer 9:30 AM **O** 2h Workshop "Discover the power of isotopes - stable isotope workshop" P Room 101 (ground floor) (Buil... Dive deep into the world of isotopes and their applications! Join us at the Science Days for an illuminating workshop on the stable isotope platform of the UFZ, which encompasses several research units. Explore the myriad ways stable isotopes are revolutionizing our understanding of environmental processes, ecosystem interactions, and element cycles. Learn about compound-specific isotope analysis and the potential of stable isotopes to trace and quantify biogeochemical reactions, assess food web interactions, and much more. Whether you are an expert seeking to refine your skills or a novice eager to unrayel the mysteries of isotope analysis, this workshop is perfect for you. Do not miss this unique opportunity to expand your horizons and network with fellow researchers. Speakers: Christin Müller, Steffen Kümmel, Mario Brauns, Kay Knöller, Matthias Gehre, Ivonne Nijenhuis 9:30 AM Workshop "Diversity in Science: Embracing the Power of Inclusion" (Input and Discussion) (1) 1h ♥ Warze (Building 2.0 (Canteen)) To this day, the idea of a "successful scientist" is often characterized by the stereotypical image of a white male in a white lab coat with a dangerously bubbling test tube in his hand and wearing glasses. This raises the question: What is the actual state of diversity and variety of diverse perspectives in science? And why is diversity in science so essential in the first place? These questions and a general introduction to the topic of Diversity, Equity and Inclusion (DEI) are part of the input. Afterwards, we invite everyone to discuss and exchange ideas together. Speakers: Kerstin Schmitt, Ines Thronicker 10:15 AM Lab tour "Die UFZ-Gründachforschung, UFZ Green Roof Research" - 2nd tour **O** 45m ₱ Building 7.1 During the tour, green roof research at the UFZ will be presented. On the basis of four green roofs - a retention green roof on a carport and extensive, intensive and wetland roofs - it will be explained to visitors how green roofs are constructed, what functions they can perform in urban areas and how the UFZ's green roof research contributes to the development of multifunctional green roofs. Speaker: Marc Breulmann 9:30 AM → 11:30 AM Breakout Session: Storylines, cont. Part I Please use the parallel storyline sessions on Day 1 to get informed about the storylines and bring in your potential contributions to a particular storyline. You might also want to contact the responsible persons of the storylines before the Science Days to find out how to best contribute. The storyline session structures may vary. On Day 2 some storyline sessions may be closed sessions. 9:30 AM Closed Session: Overarching Storyline "Circular economy" **O** 2h P lecture hall left (room 254) (B... 9:30 AM Storyline "Bending the curve of biodiversity loss under climate change" Saal 1C (KUBUS) 9:30 AM Storyline "Exploring paths towards multifunctional landscapes: perspectives from modelling & observation" **O** 2h Saal 1B (KUBUS) 9:30 AM Storyline "Shaping energy landscapes sustainably" (C) 2h ♥ Saal 1D (KUBUS) 9:30 AM Storyline "Toxic-free water resources for healthy people and ecosystems under global change" **O** 2h ♥ Saal 1A (KUBUS) **11:30 AM** → 12:30 PM **Lunch break ③** 1h Poyer (KUBUS) 12:30 PM \rightarrow 2:30 PM Breakout Session: Lab tours and Workshops II 12:30 PM Lab tour "Biotechnikum: BioTECHNOLOGY for everyone - equipment, components, functionality and benefit" - 2nd **③** 45m Meeting point: KUBUS This guided tour takes you through the biotechnical centre and showcases modern technologies such as bioreactors and

separation systems. It enables you to consider new opportunities for producing bio-chemicals from various residues and by-products, illustrating the practical application of research and its role in achieving a circular economy. We will offer explanations of simplified processes and welcome your questions, ideas and concerns.

Sneakers: Steffi Hunger Andreas Aurich

12:30 PM

♥ stairs to basement (Building 4...

ProVIS Part 1: Imaging Ion-probe Analytics: SIMS prospects in environmental studies (Hryhoriy Stryhanyuk) Instrumentation and approaches of Secondary Ion Mass Spectrometry (nanoSIMS and ToF-SIMS) for environmental studies with single-cell and subcellular resolution will be introduced during the tour.

Sample preparation and quantitation of cellular metabolic activity in various environmental samples will be explained.

ProVIS Part 2: High-resolution imaging at ProVIS (Matthias Schmidt)

High-resolution microscopes provide insight into the structure of microscopic objects.

At ProVIS the scanning electron- and helium-ion microscopes are embedded in the correlative workflows alongside with microanalytical techniques, such as SIMS.

During the tour the participants will learn about applications in (environmental-)microbiology, the basic principles of the microscopes, sample preparation techniques as well as image registration of correlative microscopy data. It is planned to give participants the opportunity to operate the scanning electron microscope.

ProVIS Part 3: Next-Generation DOC Analysis with FT-ICR MS (Oliver Lechtenfeld)

At ProVIS, we apply ultra-high resolution mass spectrometry to study organic matter processes at the landscape level and in technical systems. Recently, we have boosted this capacity by adding liquid chromatography and laser desorption/ionization for a direct analysis both of the dissolved and the solid phases.

Participants have the opportunity to see a demonstration of the recent advances of our analytical toolboxes and will have the chance to discuss possible applications for their own research.

Speakers: Hryrory Stryhanyuk, Matthias Schmidt, Oliver Lechtenfeld

12:30 PM

♀ Room 117 (Building 5.0)

With over 25 years of expertise, the Isotope Lab Leipzig is specialized in analyzing light element stable isotopes, including H, C, N, O, S and Cl. It offers state-of-the-art laboratory equipment, holds several methodological patents and acts as reference laboratory. During the tour, attendees will discover how stable isotopes can be applied to understand environmental processes and ecosystem interactions through compound specific isotope analysis (CSIA). The knowledge of the Isotope Lab Leipzig contributes to diverse process studies, such as visualizing biogeochemical processes or differentiating reactions and their underlying mechanisms.

Speakers: Matthias Gehre, Steffen Kümmel

12:30 PM

₱ 101 (ground floor) (Building 4....

We are often annoyed about the status of digitalisation in the German public sector, but are we better as environmental analysts?

If we are honest, we have to realise that even at the UFZ, with regard for example to the management and analysis of environmental samples, there are mostly local developed solutions at the moment. This makes it very difficult or in some cases laborious to manage samples and use data, at least on a UFZ-wide scale. At present, this may seem to be a sufficient and in some cases satisfactory digital solution for many scientists to carry out their own work.

In the future, activities on the environmental research science will produce and require usage of interdisciplinary, large data sets – "big data". This will only be successful for us at the UFZ if, in addition to externally accessible data, for example we can use a data pool related to data from environmental samples that has been fed by all scientists UFZ-wide over a period as long as possible. This is also important in the view of needed increased inter-departmental co-operations and projects.

So far, only partial use has been made of the UFZ's own Data management portal (DMP) in this regard, and a one-to-one sample identification of all UFZ environmental samples does not exist.

During the workshop, ideas and approaches are to be discussed with all interested scientists in order to strengthen the usage of the DMP by starting to enable a one-to-one sample identification for all environmental samples in the near future (general barcoding approach). This will be the basis for all colleagues at least to receive information which samples were analysed when and how.

It may be seen as "extra work" but the benefit lies within the future ease of data exchange, faster usage and thus a better way of open-access cooperation within the UFZ. This is something we should work on.

Beyond the introduction of a UFZ wide barcode for environmental samples, information will be provided about other already used data management systems such as the free, safe and open source electronic laboratory book (elabFTW) available at the UFZ and the LIMS with internal service charging that has been implemented at the central Laboratory for water analytics Magdeburg for more than 20 years.

Speakers: Eberhard Küster, Wolf von Tümpling

12:30 PM

Workshop "Living sustainability culture together - on the way to a green campus" 02h

The Leipzig Permoserstraße Science Park is on its way to develop into a water-sensitive, biodiversity enhancing and greenhouse gas-neutral campus – a green campus. To achieve this goal, a variety of measures have already been implemented, are planned, or are conceivable. We would like to discuss with you how the conceivable measures can be implemented. Above all, we would like to brainstorm with you which innovative approaches and technologies you can contribute from your research areas that could be made visible and tangible in the form of demonstration objects on the Science Park grounds.

Speakers: Peggy Kirsten, Reinart Feldmann, Roland Müller

12:30 PM → 2:30 PM Breakout Session: Storylines, cont. Part II

Please use the parallel storyline sessions on Day 1 to get informed about the storylines and bring in your potential contributions to a particular

storyline. You might also want to contact the responsible persons of the storylines before the Science Days to find out how to best contribute. The storyline session structures may vary. On Day 2 some storyline sessions may be closed sessions. 12:30 PM Overarching Storyline "Extremes" ♥ Saal 1A (KUBUS) 12:30 PM Storyline "Environmental impact assessment of plastics and associated chemicals to support the transition to a non-toxic environment for humans and wildlife" (C) 2h ♥ Warze (small dining hall) (Buil... 12:30 PM Storyline "Towards sustainable agricultural land use" **O** 2h ♥ Saal 1C (KUBUS) 12:30 PM Storyline "Transformation towards resilient water landscapes" (1) 2h ♥ Saal 1B (KUBUS) We will start with a short recap of the storyline and the session on Day 1. In light of this, we want to have a closer look at the five cornerstones of the storyline: i) The robust quantification of water fluxes, ii) Mechanistic process understanding for quantification of matter fluxes, iii) Identifying major controls of ecological functions and services, iv) Outreach and impacts and v) Overall storyline framework. This will happen in a modified World Café format depending on the group size. Here the emphasis is on: 1) Interesting aspects/products/papers that have not been mentioned yet incl. bridges to other Storylines and 2) What is still in the pipeline. Finally, we want to discuss in plenary activities that could support products in the pipeline to be ready in time for the evaluation. 12:30 PM Storyline "Urban transformation towards resilient blue-green infrastructures (BGI)" ♥ Saal 1D (KUBUS) 2:30 PM \rightarrow 3:00 PM Plenary: Conclusion and Poetry Slam on Overarching Storylines Conveners: Rolf Altenburger, Marsha Richarz, Nils Straatmann 3:00 PM → 4:00 PM iDiv: Local Member Committee at UFZ¶ ♥ Saal 1C (KUBUS) UFZ scientists already involved in iDiv or potentially interested to become involved are invited to this event. Just pass by, Speakers: Karin Frank, Ingolf Kühn

7 von 7