

A step- change for PIK

PIK Alumni Newsletter 12/2023

Dear PIK Alumni,

Good news for PIK: [PIK's application for a so-called *Sondertatbestand* has been approved by Germany's Joint Science Conference](#). This will secure an additional annual long-term core funding of about 3.8 million euros for the institute, starting in 2025. Applying for a *Sondertatbestand* (strategic special budget) is the only way an institute of the Leibniz Association is able to increase its core budget. PIK submitted a convincing proposal consisting of two parts. On the one hand, the Mercator Research Institute on Global Commons and Climate Change (MCC) will become a part of the Potsdam Institute for Climate Impact Research. For eleven years now the MCC, as an independent institute based in Berlin, has combined high-level economic and social science analyses with a structured approach at the interface of science and policy. From 2025 on, MCC will join PIK as a fifth entity, complementing the existing four Research Departments. At the same time, the strengthening of three investment areas complements PIK's proven portfolio of services with pioneering research topics such as Earth system resilience in the Anthropocene, distribution issues and human well-being, and artificial intelligence.

The funding enables a consistent development of PIK's strategy to research the governance of global commons within planetary boundaries. PIK can not only draw on more than 30 years of experience, but can now further expand its expertise through new pioneering topics and an expanded focus on the social sciences - from knowledge to impact. In the coming months, the *Sondertatbestand* will be carefully implemented. The Board of Directors is preparing this process with consideration for stakeholders, capacities, and a commitment to transparency.

Altogether, the new funding will help further PIK's mission to advance the scientific frontier on interdisciplinary climate impact research and contribute knowledge and solutions for a safe and just climate future. Again in 2023 PIK researchers have produced over 300 publications including many research highlights (a very few examples are given below). One recent outcome of PIK research is the [policy findings from the EU-funded NAVIGATE project](#), which was coordinated by Elmar Kriegler and colleagues from Research Department Transformation Pathways. The synthesis report from the project - which investigated 1.5°C pathways in line with the



Happy Holidays ...

... and a wonderful New Year



Michelson House, main building of the Potsdam Institute for Climate Impact Research (PIK). Photo: Juliane Otto



Paris Agreement - was presented at COP28 and provides a blueprint for achieving a rapid, fair and efficient transformation to net zero emissions. Another key PIK research theme is the work on tipping points; here too, a number of PIK researchers contributed to [a recent key assessment](#) of tipping point risks and societal opportunities, the Global Tipping Points Report. At the [recent COP28 in Dubai](#), PIK scientists - including Johan Rockström and Ottmar Edenhofer - contributed their expertise in discussions, side events and press conferences. The Directors' assessment of progress made at the COP can be read in a [just-published PIK statement](#).

Finally, there have been two important appointments in recent months of senior members of PIK: our Founding Director Prof. John Schellnhuber [has been appointed Director General of the International Institute for Applied Systems Analysis \(IIASA\)](#) in Laxenburg, Austria, as of this December. And [Prof. Ricarda Winkelmann](#), who has been key in building up PIK's ICE group and the ERA FutureLab on Earth Resilience in the Anthropocene, [becomes founding director at the Max Planck Institute for](#)

[Geoanthropology](#) in Jena, dedicated to understanding the interactions between humans and the Earth system.



The MCC headquarters on the EUREF Campus in Berlin

Publication Highlights

Trade and Environment: How competition and economic distress undermine the support for green policies in the US and Western Europe

A team of scientists including Charlotte Bez from the FutureLab CERES recently published an analysis in *Nature Climate Change* about the impact of economic distress on environmental policy support. Using data from the US and countries from western Europe, they analysed the impact of rising trade exposure and its strong distributional consequences on attitudes and policy support. In regions that are especially affected by import competition, this economic distress caused a lower support for environmentalist parties and led to skeptical attitudes about climate change. According to Charlotte Bez, the "results suggest that reducing the unequal impacts of international trade is key to strengthen support for environmental policies in Western democracies." [Read more ...](#)

The inequal distribution of adaptation potential in low-income areas under heat stress

A study by Annika Stechemesser and Leonie Wenz from PIK published in *The Lancet Planetary Health* explores the adaptation potential of low-income areas in New York City concerning transportation. Low income areas already suffer more under heat stress than more privileged areas, but as is pointed out in the study, people there also have less possibilities to avoid overheated subway stations and switch to other modes of transport. This may be caused by a variety of socio-economic factors and "we have to address these disparities to avoid compounding heat and health risks", concludes Leonie Wenz. [Read more ...](#)

Healthy climate, healthy bodies: Optimal fuel taxation and physical activity

According to a study co-authored by PIK's Linus Mattauch, a tax increase of around 40% in the US and the UK could counter risks for both physical and mental health caused by a lack of physical activity. A significant increase in fuel tax rates could balance not only the cost imposed by congestion and pollution, but also the

social costs imposed by a sedentary lifestyle. Both lead author Inge van den Bijgaart from the Utrecht University and Linus Mattauch stress the financial burden on the health system and possible positive effects of physical activity in the form of walking and cycling. [Read more ...](#)

Credibility as an important factor for private sector investments in the green-energy transformation

A team of scientists including Michael Pahle and Mirjam Kosch from PIK stress the importance of credibility and expectations of private investors in the policy pathways needed to enable reaching the net zero target in a study published in *Nature Climate Change*. "It's all about credibility and commitment if we want to achieve a net-zero-consistent policy pathway", explains Michael Pahle, Head of PIK's Climate and Energy Policy working group. "Policy debates are too often about antagonization of market-based and regulatory instruments, but for maximize credibility we need both." [Read more ...](#)

Past effects of the Dansgaard-Oeschger Events: Abrupt and drastic changes in global rainfall patterns

A team around former PIK scientist Jens Fohlmeister studied cave minerals worldwide to assess precipitation changes during the last Ice Age in a study published in *PNAS*. As temperature jumps of up to 15°C occurred in a few decades in parts of the northern hemisphere, associated atmospheric and oceanic circulation patterns changed and induced a change in global precipitation patterns. According to Niklas Boers from PIK this research "added another puzzle piece toward more reliable assessments of the detailed global impacts that a tipping of a major Earth system component such as the AMOC might have," highlighting its importance in understanding future human-made global warming scenarios. [Read more ...](#)

From green canopy to grassland: The grave impact of fires on re-growth in the Amazon

In a study published in *Nature Communications Earth and Environment*, scientists from PIK explored the role of fires not only in the destruction of the Amazon Rainforest but its continuing



impact on the newly created grasslands. While the rainforest might regrow by itself, recurring fires in combination with climate-induced temperature rise can lock it in a savanna-like state, as they substantially hinder regrowth and stabilization of evapotranspiration and precipitation patterns. "Our results highlight the need to keep the Earth system within stable

boundaries and limit climate change as well as tropical deforestation in order to prevent the tropical forest from crossing an irreversible fire-controlled tipping point," comments co-author Kirsten Thonicke, leader of PIK's Ecosystems in Transition team. [Read more...](#)

Tracking PIK's carbon footprint

Many of you will remember from your time at PIK that PIK strives as much as possible to be a "green" institute. Some Alumni may have been involved in the 'Greening PIK' employees' group that helped introduce some more sustainable working practices over the years. Now PIK is involved in a research project to measure (and reduce) our carbon footprint: the institute is part of a Leibniz Association-funded pilot project aimed at gaining insights into how

climate neutrality can be achieved in research processes and working methods. As one of ten representative institutes or associations of institutes, we will have a professional inventory of all CO₂ emissions made by the end of this year. However, while the pilot project will come to an end in spring 2024, PIK's first carbon footprint marks the start of the internal project "Climate accounting and sustainable working at PIK", in which we are taking measures to avoid or reduce emissions. With business travel, purchased electricity and building efficiency being among the biggest emissions components, plans for the insulation of PIK buildings, a PV system and installation of heat pumps come right on time.

Professorships for PIK Alumni

From PhD to Professor: four Alumni who wrote their doctoral theses at PIK have recently been appointed professors at German universities:

- **Marlene Kretschmer** (PhD at PIK in 2018) is assistant professor of climate causality at the Leipzig Institute for Meteorology. Her research focuses on the causal drivers of extreme weather events. She investigates which large-scale atmospheric circulation patterns and 'teleconnections' are responsible for the occurrence of extreme weather events and how they change in a warmer climate.
- **Kira Rehfeld** (PhD 2013) is Professor of Climatology and the Biosphere at the University of Tübingen and leads the Emmy Noether group STACY, which she set up with funding from the DFG in 2018. Kira wrote: "From my side I can say that I see my appointment as professor of climatology in Tübingen as an honor and an opportunity to bring Earth system science forward. This draws of course on my palaeoclimate and complex systems science roots, which I substantiated and deepened during my PhD at PIK with Jürgen Kurths."
- **Katharina Waha** is an agricultural geographer who started her academic career as a PhD student at PIK's 'Landuse and

resilience' working group and was recently appointed Professor for Climate Resilience and Human-Made Ecosystems at the University of Augsburg's Centre for Climate Resilience. [Read more here ...](#)

Following her doctorate in 2013 Katharina spent several years at Australia's national science agency CSIRO. "I am very grateful for the friendship and support from RD2, the Landuse Modelling Group and PIK researchers and PIK Alumni that reached out over the years to collaborate when I was in Australia. My time at PIK certainly influenced my career path a lot and I am looking forward to inspiring collaborations between the Centre for Climate Resilience at University Augsburg and PIK" writes Katharina.

- **Wolfgang Barfuß**, who completed his doctorate in Research Department Earth System Analysis in 2019 and remains a guest scientist there, is Argelander Professor at the University of Bonn since the beginning of 2023. His group's mission is to reshape human-environment modelling to identify critical leverage points for sustainability transitions.

These are just some of the recent appointments for PIK Alumni. If you're interested in where other former colleagues may now be working, you can see a fuller list of alumni and their institutions under [PIK Alumni profiles](#) on our website. Please remember to send us an update when you move to a new institution.

Forthcoming events

The **13th Deutsche Klimatagung** will take place here on the Telegrafenberg in Potsdam from 12th to 15th March 2024. For more details on the programme and registration, please see the website: <https://www.dkt-13.de/>.

EGU Sessions 2024

Several members of PIK are (co-) convening sessions at the EGU General Assembly in April 2024. In most cases, abstracts for the

sessions can still be submitted until 10th January 2024. For details, please follow the respective links:

ITS3.1/HS12.6: **Understanding and quantifying Planetary Boundaries** (Conveners: Johan Rockström, Simon Fahrländer, Sarah Cornell, Lauren Seaby Andersen) <https://meetingorganizer.copernicus.org/EGU24/session/50487>

ITS4.3 / NP1.2: **Tipping Points in the Earth System** (Conveners Niklas Boers, Tim Lenton, Anna von der Heydt, and Ricarda



Winkelmann)

<https://meetingorganizer.copernicus.org/EGU24/session/50458>

ITS4.8/CLO.1.16: **Advances in physical climate risk assessment for the financial and insurance sectors** (Conveners Kai Kornhuber, Andrej Ceglar, Nicola Ranger, Alessio Ciullo, Maximilian Kotz) <https://meetingorganizer.copernicus.org/EGU24/session/50334>

CL3.1.3: **Attributing climate change and its impacts – from long-term trends to extreme events** (Conveners Sabine Undorf,

Sebastian Sippel, Lukas Gudmundsson, Aglaé Jézéquel, and Aurélien Ribes)

<https://meetingorganizer.copernicus.org/EGU24/session/49140>

NH11.2: **Future Changes in Weather and Climate Hazards around the World** (Conveners: V. Thompson D. Mitchell, Kai Kornhuber, S. Meiler)

<https://meetingorganizer.copernicus.org/EGU24/session/48267>

Congratulations to ...

... some members of PIK on their recent honours and appointments:

- **Highly-cited researchers:** Eight PIK researchers are among the top 1 percent worldwide in Clarivate Analytics' "Highly Cited Researchers 2023" ranking, based on the number of times scientists' papers are cited by other researchers. The eight PIK researchers from different research departments are Katja Frieler, Elmar Kriegler, Jürgen Kurths, Hermann Lotze-Campen, Gunnar Luderer, Alexander Popp, Johan Rockström and John Schellnhuber. [Read more ...](#)
- **Ottmar Edenhofer** was appointed a member of the Forum #Zukunftsstrategie, a group of experts from business, science and civil society who will advise the Federal Government on the implementation of the "Zukunftsstrategie" (Future Research and Innovation Strategy). The new body began its work at the Federal Ministry of Education and Research (BMBF) in September 2023.
- **Katja Frieler**, co-Head of Research Department Transformation Pathways, has accepted an appointment as Professor for Climate Impacts at Potsdam University. Katja's appointment followed a successful application to the Leibniz Association's Programme for Women Professors.
- **Stefan Rahmstorf** will receive the Alfred Wegener Medal 2024 & Honorary Membership of the European Geosciences Union.

- **Jürgen Kurths** was awarded the SigmaPhi Prize of the European Physical Society together with Michael Kosterlitz (Nobel Prize 2016) and Chandan Dasgupta.
- **Leonie Wenz** was nominated one of Germany's "40 under 40" by the business magazine *Capital*.

Three professorships for PIK postdocs:

- **Prajal Pradhan** was appointed Assistant Professor for Integrated Research on Energy, Environment and Society (IREES) at the University of Groningen.
- **Martin Hänsel** has been appointed Junior Professor for the Valorization of Nature at Leipzig University.
- **Abel Chemura** has moved to a position as Assistant Professor, Agri-food Systems Modelling, at the University of Twente.

Three prizes for young scientists:

- **Leonie Wenz** and **Timothé Beaufigli** received the Sir Richard Stone Prize 2023 for the best publication in Economic Systems Research (ESR) for their paper "A scenario-based method for projecting multiregional input-output tables".
- **Rahel Laudien** was awarded the 'Allianz Climate Risk Award' for innovative ideas towards sustainable resilience for [her research on early warnings of yield losses](#).
- **Jakob Niehaus** was awarded the Lise-Meitner Prize of the Humboldt University's Physics Department for the best Masters thesis.



PIK's Alumni programme

Please keep us up to date: Send an update to alumni@pik-potsdam.de if you have changed your job or want to update your details in our Alumni database. We'd also welcome news about *your recent publications, personal achievements, or research activities*.

Best wishes to all! **Alison Schlums**, Alumni Officer

KEEPING IN TOUCH

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IMPRESSUM

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DATA PROTECTION STATEMENT

We use your data to keep in touch with you as Alumni, to provide you with occasional news about the Potsdam Institute and its activities, and to send targeted information about scientific and other events. PIK's full [privacy policy](#) can be found on the PIK website (Section 7.2. relates to Alumni). If you have any concerns or queries about the use of your personal data, please contact us.

KEEP US UPDATED

If you have moved to a new job or your contact details have changed, please let us know by sending an email to alumni@pik-potsdam.de.

NEWSLETTER

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