

Zusammenfassung des gemeinsamen Workshops der DGEpi-Arbeitsgruppen AG 10 und AG 03 (German version)

Use of environmental data in occupational and environmental epidemiology

In der Umwelt- und Arbeitsepidemiologie werden oft vergleichbare Methoden angewandt. Dadurch können die beiden Forschungsfelder voneinander lernen. Noch spannender ist die Frage ob man auch aus methodischen Unterschieden lernen kann. Darüber hinaus erhöht der Klimawandel die Notwendigkeit, Umweltdaten in berufsbezogenen Studien zu berücksichtigen. Die Anwendung des Planetary-Health-Ansatzes, um der Verbundenheit zwischen der Gesundheit von Menschen, Tieren, Pflanzen und der Umwelt Rechnung zu tragen, erfordert eine verstärkte disziplinübergreifende Zusammenarbeit.

Dieser gemeinsame Workshop der Arbeitsgruppen Umwelt und Arbeit wurde als ein Schritt in Richtung dieser Vision initiiert: Wir möchten Methoden und Themen erkunden, die für die Umwelt- und Arbeitsepidemiologie von Interesse sind. Außerdem wollen wir die klaren Verbindungen zwischen diesen beiden Forschungsbereichen aufzeigen und integratives Denken fördern.

Der Workshop fand im Hybridformat vom 7. bis 8. September 2023 in der Bundesanstalt für Arbeitsschutz und Arbeitsmedizin (BAuA) in Berlin statt. Das Workshop Programm findet Sie am Ende dieses Dokuments. Der Workshop begann an beiden Tagen mit einem Impulsreferat, das jeweils einen Überblick über aktuelle Themen und Methoden der Umwelt- und Arbeitsepidemiologie gab. Zwölf Referenten berichteten über ihre aktuellen Projekte, methodischen Entwicklungen und Herausforderungen, gefolgt von einer aktiven Diskussionsrunde. Bestehende und mögliche künftige Synergien zwischen Disziplinen, Methoden und Forschungsfragen wurden diskutiert und neue Ideen vorgeschlagen. Wir danken allen Referenten und Teilnehmern des Workshops und hoffen, diese multidisziplinäre Austauschinitiative in den nächsten Jahren fortsetzen zu können.

Der Workshop wurde in Zusammenarbeit mit der **Bundesanstalt für Arbeitsschutz und Arbeitsmedizin (BAuA)** durchgeführt. Für die Kooperation und die Bereitstellung der Räumlichkeiten danken wir der BAuA. Wir danken auch der **Deutschen Gesellschaft für Epidemiologie (DGEpi)** und der **Deutschen Gesellschaft für Sozialmedizin und Prävention (DGSMP)** für ihre finanzielle Unterstützung.

Summary of the joint Workshop of the DGEpi Working Groups AG 10 and AG 03 (English version)

In the field of environmental and occupational epidemiology often comparable methods are applied. Here both disciplines can learn from each other. But even more interesting is the learning from methodological distinctions. Further, climate change is progressing which poses the need to consider environmental data in occupational studies. Applying the Planetary Health approach to acknowledge the interconnection between the health of people, animals, plants, and the environment, requires increasing transdisciplinary collaborations.

This joint workshop of the working groups on environment and occupation was initiated as one step towards this ultimate vision: we wanted to explore methods and topics interesting to environmental and occupational epidemiology. We also wanted to highlight the clear links between these two fields and foster the integrative thinking.

The workshop was organized in a hybrid format and took place from the 7th to the 8th of September 2023 at the Federal Institute for Occupational Safety and Health (BAuA) in Berlin. The program of the workshop can be found at the end of this document. Both days of the workshop started with a keynote presentation, providing an overview on current topics and methods in environmental and occupational epidemiology. Twelve presenters gave talks about their current projects, methodological developments and challenges, followed by active discussions. Existing and possible future synergies between disciplines, methods, research questions were discussed, new ideas were suggested. We thank all participants of the workshop and hope to continue this multidisciplinary exchange initiative in the following years.

The workshop was organized in cooperation with the Federal Institute for Occupational Safety and Health (BAuA). We thank the German Society for Epidemiology (DGEpi) and the German Society for Social Medicine and Prevention (DGSMP) for their financial support.

Speakers of the AG 10 “Environmental medicine, exposure and risk assessments”:

André Conrad

Kateryna Fuks

Stefanie Lanzinger

Dietrich Plaß

Speakers of the AG 03 “Occupational Epidemiology”:

Katarzyna Burek

Janice Hegewald

Jean-Baptist du Prel

Workshop Programme

September 7

Day 1

13:00 – 13:30

Arrival and registration

13:30 – 14:00

Welcome and begin of first workshop day

Moderation: Stefanie Lanzinger, Janice Hegewald

Session A

Environmental and occupational epidemiology: current topics and projects

Keynote: Dr. Kate Applebaum, Associate Professor (George Washington University)

Dr. Applebaum is an associate professor in the Department of Environmental and Occupational Health of the Milken School of Public Health at the George Washington University in Washington, DC. Her research topics include climate-related occupational exposures and their health effects on workers such as sugarcane farmers in Nicaragua, and she published a narrative review on climate-related occupational risks: Applebaum et al. An Overview of Occupational Risks from Climate Change. Current Environ Health Reports. 2016 Mar;3(1):13-22.

14:00 – 14:45

Title: **“How does environmental and occupational health research adapt to a changing climate?”**

- Presentation 1: **“Socioeconomic background for epidemiological research, a COVID-19 sample”**. Presenter: Christoph Höser. IHPH - Institut for Hygiene and Public Health, the WHO Collaborating Centre for Health Promoting Water Management and Risk Communication, the University Hospital Bonn, Germany.

14:45 – 15:45

- Presentation 2: **“The APOLLO app: A self-management health application for patients with pollen-related allergic rhinitis and allergic asthma – conception, pilot testing and evaluation”**. Presenter: Valeria Landesberger. Subject area AP 3.2: Occupational and environmental medicine/epidemiology, the Bavarian State Office for Health and Food Safety, Munich, Germany.

15:45 – 16:30

Coffee break

Moderation: André Conrad, Dietrich Plaß

- Presentation 1: **“Relationship of air pollution and neighborhood socioeconomic status and their association with cognitive function in the Heinz Nixdorf Recall Study”**. Presenter: Dr. Katherine Ogurtsova. The Institute of Occupational, Social and Environmental Medicine, Center for Health and Society, Medical Faculty, Heinrich Heine University of Düsseldorf, Germany

16:30 – 18:00

- Presentation 2: **“Association between air temperature and the incidence of type 2 diabetes in Germany: An ecological study”**. Presenter: Dr. PH Thaddäus Tönnies, M. Sc. Research Group Biometrics, DDZ - German Diabetes Center, Düsseldorf, Germany.
- Presentation 3: **“Indoor air quality and learning in elementary schools – Are overweight pupils more vulnerable?”** Presenter: Stefan Flagner. Department of Nutrition and Movement Sciences, Faculty of Health, Medicine and Life Sciences & Department of Finance, School of Business and Economics, Maastricht University, the Netherlands.

18:00

End of first workshop day

19:00

Opportunity for joint dinner (self-pay). Please notify us (if not done so already) if you would like to join.

Location: Jelänger Jelier Restaurant (German-Mediterranean cuisine), Kaskelstraße 49, 10317 Berlin (5 min walking distance from BAuA); URL: <https://xn--jelngerjelieber-2kb.de/>

September 8

Day 2

09:00 – 09:15

Welcome and begin of second workshop day

Session B

Methods in environmental and occupational epidemiology

Moderation: Jean-Baptist du Prel, Dietrich Plaß

Keynote: Prof. Dr. Reyn Van Ewijk (Johannes Gutenberg-Universität Mainz)

Reyn van Ewijk is a professor for statistics and econometrics at the Johannes Gutenberg University Mainz. He holds backgrounds in both economics and psychology, and he has for several years worked at an epidemiology department. He has specialized in the research methods used in the various scientific domains. A primary research interest of his is the application of econometric methods, and more broadly speaking the natural experiment framework to health-related research questions that cannot be answered using RCTs. Much of his recent research focuses on the long-run health effects of circumstances experienced during the earliest phases of life, as well as on weather- and climate-related exposures.

09:15 – 10:00

Title: **“Natural experiments with environmental data”**

- Presentation 1: **“Causal inference when linking environmental and health data”**. Presenter: Dr. Fabienne Pradella. Chair of Statistics and Econometrics, Johannes Gutenberg-University Mainz, Germany
- Presentation 2: **“Generalized additive mixed models: basic principles and application in R”**. Presenter: Dipl.-Stat. Katarzyna Burek. The Center of Epidemiology, the Institute for Prevention and Occupational Medicine of the German Social Accident Insurance (IPA), the Ruhr University Bochum, Germany.
- Presentation 3: **“Annoyance and sleep disturbance due to traffic noise- Insights from the LIFE study and comparison to the WHO curves ”**. Presenter: Dr. rer. medic. Karla Romero Starke. Occupational, social, and environmental epidemiology, Faculty of Medicine, Institute and Polyclinic of Occupational and Social Medicine, Technische Universität Dresden, Germany.

10:00 – 11:30

11:30 – 12:30

Lunch break

Moderation: Stefanie Lanzinger, Janice Hegewald

12:30 – 13:30

- Presentation 1: **“Occupational exposure to cosmic radiation and mortality of German aircrew from 1960-2014: Modeling of exposure and dose-response”**. Presenter: PD Dr. Daniel Wollschläger. The Institute of Medical Biostatistics, Epidemiology and Informatics (IMBEI). Radiation Epidemiology, University Medical Center Mainz, Germany.
- Presentation 2: **“An open database enabling a refit of the road noise annoyance function and other exposure response function”**. Presenter: Dr. Dipl. Phys. Matthias Lochmann. Department I4 – Noise, vibrations, waste, air pollution control: facilities, the Hessian Agency for Nature Conservation, Environment and Geology, Wiesbaden, Germany

13:30 – 14:00

Coffee break

Moderation: André Conrad, Dietrich Plaß

14:00 – 15:00

- Presentation 1: **“Exposure registries for occupational and leisure time UV exposure - going forward in prevention of job-related skin cancer”**. Presenter: Claudine Strehl, M. Sc. Institute for Occupational Safety and Health of the German Social Accident Insurance, Germany.
- Presentation 2: **“Using agent-based modeling to determine current and future exposure to environmental factors”**. Presenter: Dr. David Jean du Preez. Model-based Environmental Exposure Science (MBEES), Faculty of Medicine, University of Augsburg, Germany

15:00 – 15:30

Wrap-up and end of workshop