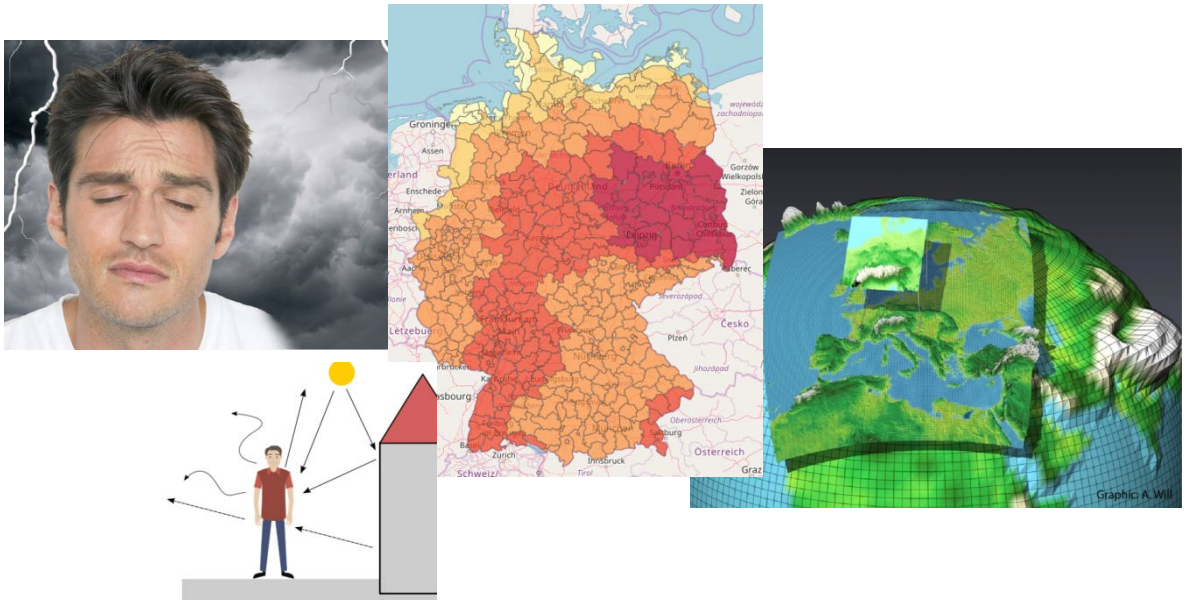
Deutscher Wetterdienst
Wetter und Klima aus einer Hand

Training Centre:
Heat and Health at DWD



Prof. Dr. Andreas Matzarakis
Research Centre Human Biometeorology
Deutscher Wetterdienst, Freiburg

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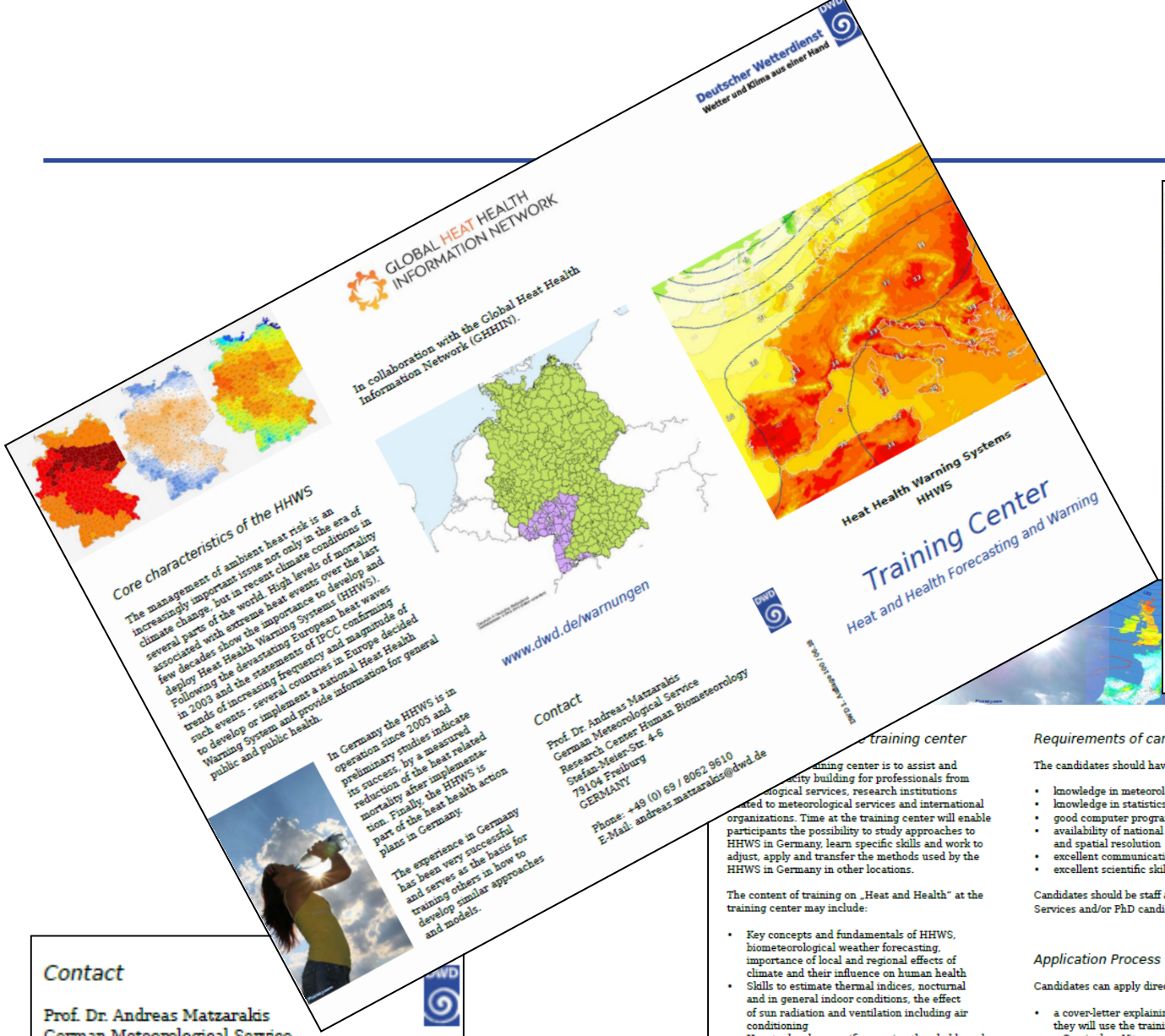

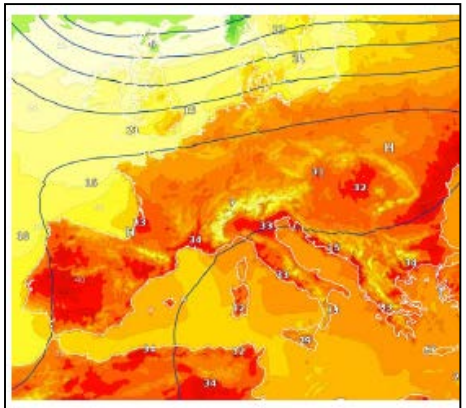

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training center

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The content of training on „Heat and Health" at the training center may include:

- Key concepts and fundamentals of HHWS, biometeorological weather forecasting, importance of local and regional effects of climate and their influence on human health
- Skills to estimate thermal indices, nocturnal and in general indoor conditions, the effect of sun radiation and ventilation including air conditioning
- How to develop specific warning thresholds and criteria
- Good practices to develop and tailor risk communication messages for broadcast meteorologists, the public, health authorities and specific target groups like elderly people and homes
- Importance of preparation and analysis of health and epidemiological data

Training will occur in English and/or in German.

Requirements of candidates

The candidates should have:

- knowledge in meteorology and weather forecast
- knowledge in statistics and epidemiology
- good computer programming skills
- availability of national health data in temporal and spatial resolution
- excellent communication
- excellent scientific skills

Candidates should be staff at National Meteorological Services and/or PhD candidates.

Application Process

Candidates can apply directly and should include

- a cover-letter explaining their interest and how they will use the training in their work or studies
- a Curriculum Vitae
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Applications from staff from NMHS should include a confirmation from the Director of their National Weather Service that they agree to provide time-off from employment for the training opportunity and are willing to apply methods and results of HHWS obtained through the training to improve national service delivery of heat health warnings (counting as one reference letter).

Funding Modalities of participation

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Upon acceptance, the training center offers to host the student for the agreed period, provide a work space, provide project mentoring, hands-on experience with ongoing projects and common work on the specific issues of the candidate. The estimated monthly living costs in Freiburg are 1400 €, including about 600-800 € for accommodation. Students are encouraged to bring their own computer.

Duration of training

The duration of the time at the Training Center can vary from three months to one year depending on the knowledge of the candidates and available funding.

PhD opportunities and academic exchange possibilities can be provided in cooperation with Albert-Ludwigs-University in Freiburg.

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GLOBAL HEAT HEALTH INFORMATION NETWORK

Training Center on Heat and Health Forecasting and Warning

At the German Meteorological Service, Research Centre Human Biometeorology

In collaboration with the GHHIN (Global Heat Health Information Network)

1. Background

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- The management of ambient heat risk is an increasingly important issue not only in the era of climate change, but in recent climate conditions in several parts of the world. High levels of mortality associated with extreme heat events over the last few decades show the importance to develop and deploy heat health warning systems (HHWS). Following the devastating European heat waves in 2003, and statements of IPCC confirming trends of increasing frequency and magnitude of such events -- several countries in Europe decided to develop or implement a national Heat Health Warning System (HHWS) and provide information for general public and public health.

- The Global Heat Health Information Network, is an informal, voluntary, member driven forum of scientists, professionals, and policymakers focused on enhancing and multiplying the global and local learning and resilience-building for heat health that is already occurring. Together, network members, including the DWD, are working toward a common goal to improve the capacity of governments, organizations, and professionals to protect populations from the avoidable health risks of extreme ambient heat. This training center is a collaborative

2. Core Characteristics of HHWS

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PT = Perceived temperature at 12 UTC
RT = Indoortemperature

PT ≥ 32° C (variable)
⬇
Adaptation May – Sept.

PT< 38°C

Warning Level I
(strong HS)

Duration ≥ 2 Days

Elevation in County

RT (depending on location)

+

Additional Soft Criteria

+

PT >38°C

Warning Level II
(extreme HS)

Elevation in County

⬇

Specific Warnings

UHI-Effect

for Elderly
PT ≥ 36°C

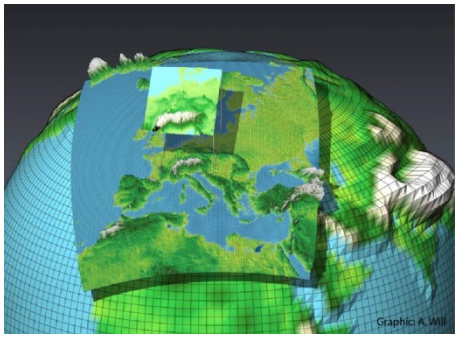
HS = Heat Stress

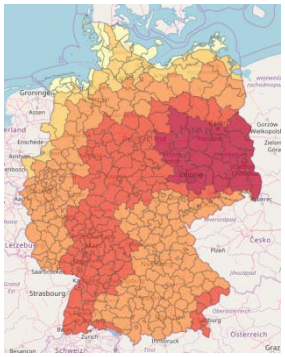
Criteria for Heat Warnings

2. Core Characteristics of HHWS

- Prediction of heat episodes, which are associated with negative health impacts.
  - Warnings are automatically generated by daily weather forecast and are additionally confirmed or adjusted by a biometeorological forecaster.
  - The main target groups are the public, nursing homes and ministries of the federal states and other authorities.
  - The HHWS is in operation since 2005 and preliminary studies indicate its success, by a measured reduction of the heat related mortality after implementation.

- Finally, the HHWS is part of the comprehensive heat health action plans implemented by the federal and subnational entities in Germany.





Communication Paths

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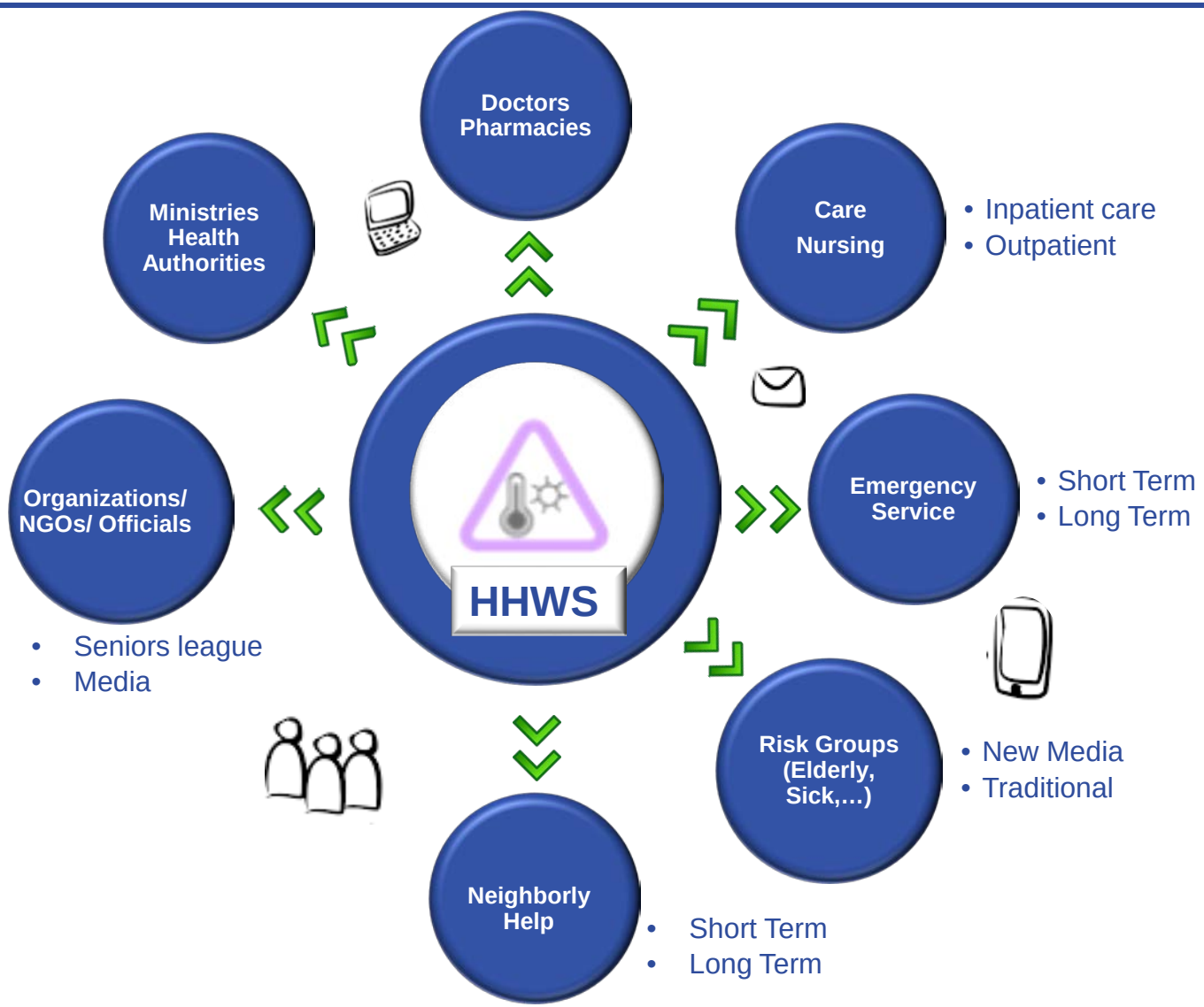

3. Related activities ZMMF/DWD

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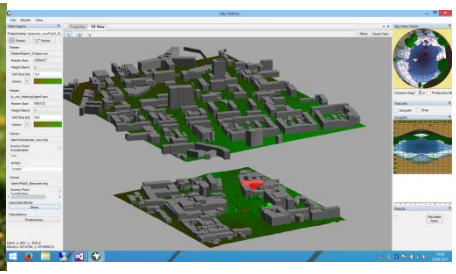
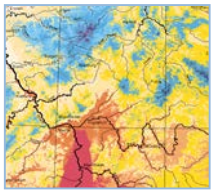
- The Research Center for Human Biometeorology conducts applied research and development work exploring weather and climate impacts on human health (which includes climate impact research activities in the public health sector in Germany).
- It provides
  - data services
  - and medical-meteorological products to national and international service providers,
  - as well as develops methods for bioclimatological assessment of health risks
    - for planning purposes
    - at regional and federal state level.





see: https://www.dwd.de/EN/aboutus/locations/branch_offices/freiburg.html

4. Scope and Aim

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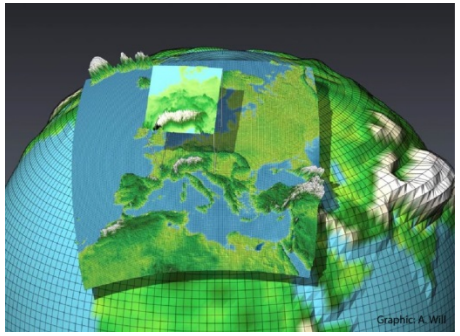
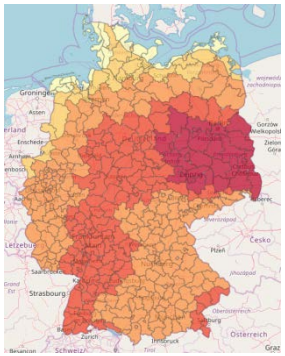
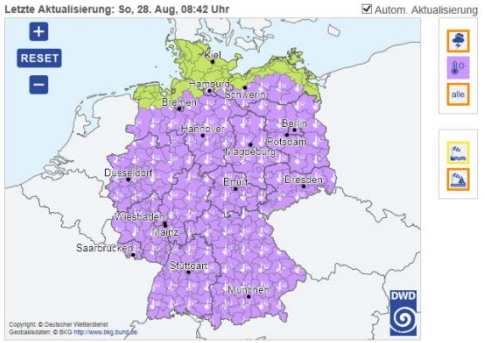
- The aim of the training center is to
  - assist and provide capacity building for professionals from meteorological services, research institutions related to meteorological services, and international organizations.
  - Time at the training center will enable participants the possibility
    - to study approaches to HHWS in Germany,
    - learn specific skills,
    - and work to adjust, apply and transfer the methods used by the HHWS in Germany in other locations.







4a. Scope and Aim of a TC

The content of training on “Heat and Health” at the training center may include, inter-alia (continued):

- Key concepts and fundamentals of: HHWS, biometeorological weather forecasting, importance of local and regional effects of climate and their influence on human health, decision-making across timescales
- Determination of heat island effects and boundaries
- Skills to estimate thermal indices, nocturnal and in general indoor conditions, as well as the effect of sun radiation and ventilation including air conditioning on actual exposure conditions,
- Importance of preparation and analysis of health and epidemiological data
- How to develop specific warning thresholds and criteria,
- Good practices to develop and tailor risk communication messages for broadcast meteorologists, the public, health authorities, and specific target groups like elderly people and homes.

4b. Scope and Aim of a TC

The content of training on “Heat and Health” at the training center may include, inter-alia:

- In cooperation with health authorities and ministries, students can learn about the development of public health actions, particularly to understand decision-needs related to actions that should be taken before, during, and after extreme heat events, but also in relation to long term warming, such as the combined effects which amplify heat risks (i.e. ozone and UV exposure).

- For long term actions teaching on human biometeorological micro scale models can be performed (e.g. RayMan, SkyHelios) in order to quantify the thermal conditions and in order to detect hot spot areas as well as to provide opportunities to reduce heat stress in urban areas.
- Methods of training will planned to be tailored to the candidate, their specific project, and length of time to be spent at the training center. Training will occur in English, and/or German.

5. Requirements of candidates

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- Candidates should be staff at National Meteorological services,
- and/or PhD candidates.
- The candidates should have knowledge
  - in meteorology and weather forecasting,
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  - good computer programming skills,
  - availability of national health data in temporal and spatial resolution,
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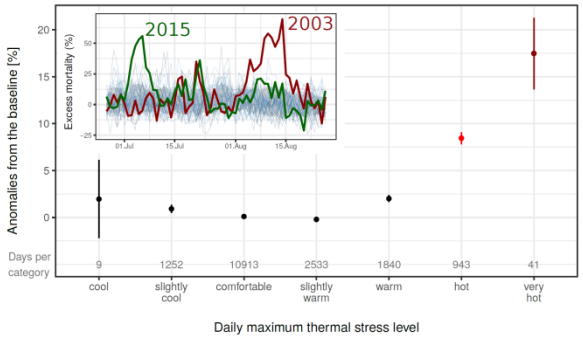

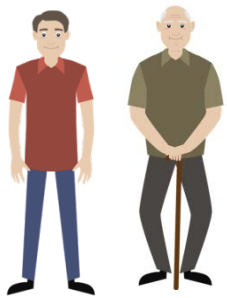

6. Application Process

- Participants will be considered on a rolling basis.
- Candidates can apply directly and should include
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  - a CV,
  - publication list,
  - and two reference letters.
- Applications from staff from NMHS
  - should include a confirmation from the Director of their National Weather Service
  - that they agree to provide time-off from employment for the training opportunity and are willing to apply methods and results of HHWS obtained through the training to improve national service delivery of heat health warnings (counting as one reference letter).

7. Funding Modalities of Participation

- Candidates should demonstrate
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  - Applicants are required to identify their own sources of funding from their employer or study institution, or other national or international funding organizations.
- Upon acceptance,
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- The estimated monthly living costs in Freiburg are 1400 €,
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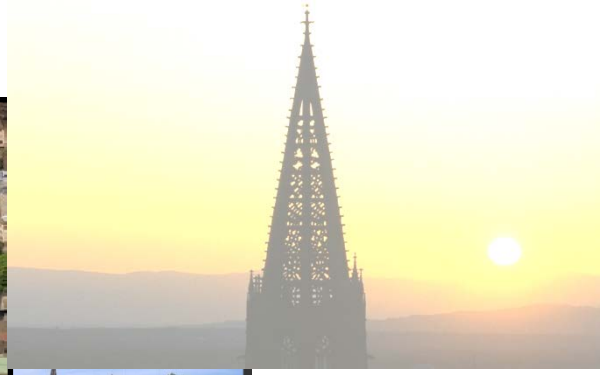
- Students are encouraged to bring their own computer.



8. Duration of Training

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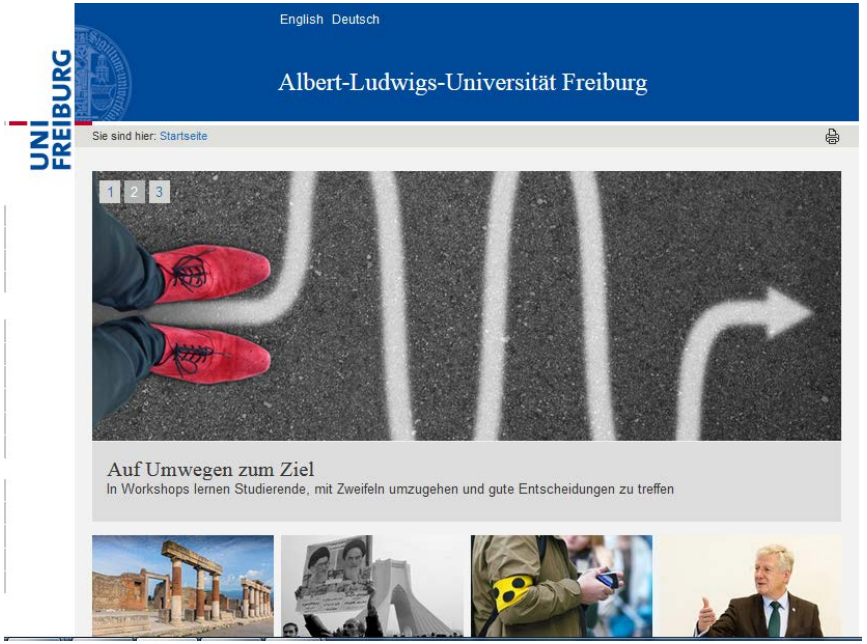
- PhD opportunities and academic exchange possibilities can be provided in cooperation with Albert-Ludwigs-University in Freiburg.



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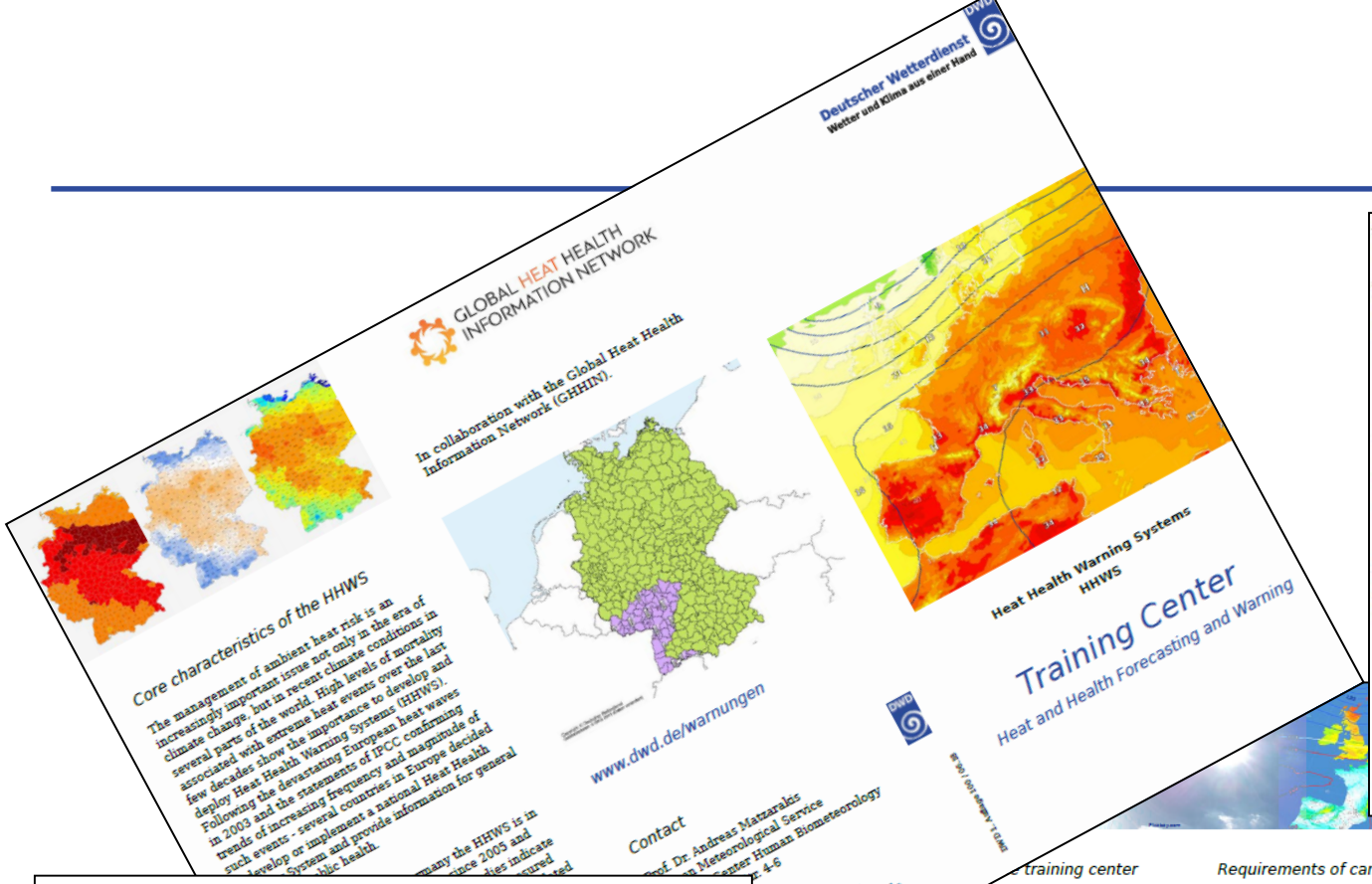

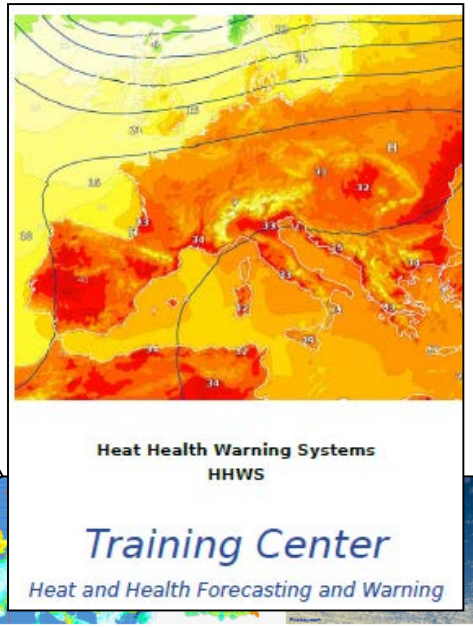

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