



# Virtual Institute Schneefernerhaus



## Mission Statement

The Virtual Institute Schneefernerhaus develops an international networked competence center for altitude, environment and climate related research, scientific engineering and long term observation. Thematic foci are on eight topics which are shown in the information box 2 below.

Additionally, the Virtual Institute Schneefernerhaus is a communication center for teaching, training, education, and developing strategies for sustainability.

*The UFS is always open for third parties and temporally limited research projects are always welcome.*

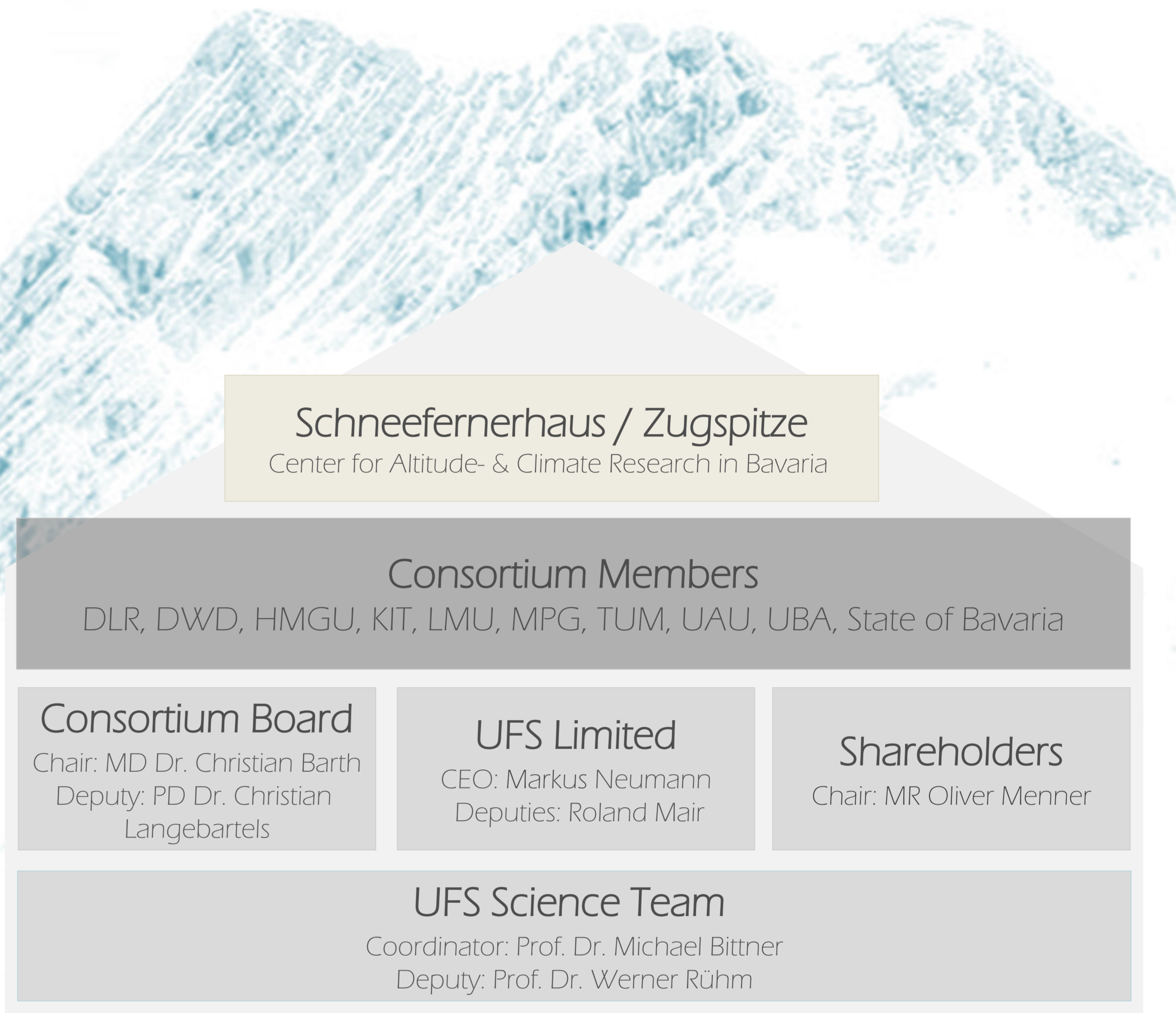
The **Consortium Board** is the steering committee of the Virtual Institute Schneefernerhaus. Members of the board are representatives from the top-level management of the various partner organizations forming the Virtual Institute Schneefernerhaus (see information box 1). The number of votes of each consortium member depends on the annual contribution for the budget of the Schneefernerhaus

The **Science Team** is responsible for implementation of the approved actions of the Consortium Board, especially the strategy. It is responsible for ensuring the scientific quality and moreover, ensures that the scientific infrastructure always allows to address current research topics adequately. The science team develops cooperation between different partners, helps submitting common R&D-proposals to third parties, and coordinates R&D-projects.

The Science Team consists of one scientist per consortium partner organization. Each member of the Science Team also acts as a thematic speaker and as a multiplier for one of the thematic topics (see info-box 2). Each member of the Science Team has one vote. The scientific coordinator has reserved a veto right.

The tasks of the consortium board are to

- define the strategy for the further development of the Virtual Institute Schneefernerhaus
- ensure the ongoing development of the cooperation with partner institutes internally and externally
- decide about the participation at international networks, programs and other initiatives
- elect the scientific coordinator of the science team of the Virtual Institute Schneefernerhaus



Information Box 1: Organigram of the virtual institute Schneefernerhaus. Status: June 2017.

## Science Team

<p><b>Environmental &amp; Altitude Medical Science</b> Prof. Dr. Huber, LMU Prof. Dr. Traidl-Hoffmann, UAU</p>	<p><b>Cloud Dynamics</b> Prof. Dr. Bodenschatz, MPG</p>	<p><b>Biosphere &amp; Geosphere</b> Prof. Dr. Menzel, TUM</p>	<p><b>Global Atmosphere Watch</b> Dr. Thomas, DWD / Dr. Ries, UBA</p>
<p>Changes in temperature, humidity and radiation or in concentrations of trace gases and (biogenic) aerosols, such as pollen, influence human health. Due to the UFS's outstanding geographical location, examinations concerning allergies with special focus on respiratory diseases and cardiovascular diseases are performed in the clinical laboratory of the UFS.</p>	<p>Clouds are essential for climate- and weather predictions and for the understanding of the distribution of pollutants, aerosols and bioactive substances in the air. Especially wet clouds still remain a riddle. Strong turbulent flows mix cloud droplets and determine the microphysics of clouds. Goal is to improve the understanding of the dynamic processes of clouds making use of the outstanding location of UFS.</p>	<p>The alpine region is characterized by extreme environmental changes on even small spatial scales leading to significant changes of biodiversity, to glacier retreats, and to receding permafrost. This underlines the importance of studying climate sensitivity of the alpine bio- and geosphere using the neighbouring zones of UFS.</p>	<p>Climate-relevant trace gases are measured continuously within the framework of the Global Atmosphere Watch program (GAW) of the World Meteorological Organization (WMO). The UFS is one of the GAW-global stations in combination with the meteorological observatory Hohenpeißenberg of the German Weather Service (DWD).</p>
<p><b>Hydrology</b> Contact to Universities Prof. Dr. Jacobeit, UAU</p> <p>The whole water of the cirque of mount Zugspitze drains completely through the Partnach spring. This predestinates the UFS-region for analyses of water regimes of high-alpine karst systems, especially against the background of climate change and climate impact research.</p>	<p><b>Satellite Based Observations &amp; Early Detection</b> Prof. Dr. Bittner, DLR / UAU</p> <p>Mesosphere is one of the most sensitive regions in the atmosphere regarding the effects of climate change. It also reveals signals from hazardous events which could be used to improve their early detection. The UFS is the coordination center for the worldwide Network for the Detection of Mesospheric Change, NDMC, using remote sensing technology based on satellites and on the ground.</p>	<p><b>Cosmic Radiation &amp; Radioactivity</b> Prof. Dr. Rühm, HMGU</p> <p>One essential part of the climate system is the impact of cosmic radiation on the environment. Interactions with the atmosphere is still not properly understood. The measurement of the energy budget of secondary neutrons of cosmic radiation at UFS is worldwide unique.</p>	<p><b>Regional Climate and Atmosphere</b> Prof. Dr. Schmid, KIT / TUM</p> <p>Two third of the whole greenhouse effect can be explained by water vapor. The global temperature increase leads to an amplification of evaporation and with it water vapor again increases. Therefore, long term LIDAR measurements at UFS above the convective boundary layer make an important contribution to the climate discussion.</p>

Information Box 2: Thematic speakers and topics of the Science Team. Status: June 2017.

**Cross Subjects:**  
Training Program and Capacity Building (Summer Schools, PhD-Programs, Advanced Courses), Development of Measurement Techniques, Measurement Systems and coupled Modelling

**International Programs and Networks:**  
ESA, GAW, GEOSS, COPERNICUS, NDMC, NDACC, ICSU, IGOS, IGBP, Alpine Convention, EUSALP, Interreg, ARGE-Alp, EU-Horizon 2020, etc.

**Contact**

<p>Prof Dr Michael Bittner Scientific Coordinator c/o German Aerospace Center German Remote Sensing Data Center +49 8153 28 1379 michael.bittner@dlr.de</p>	<p>Lisa Küchelbacher German Aerospace Center German Remote Sensing Data Center +49 8153 28 1901 lisa.kuechelbacher@dlr.de</p>
---	---

