

Interview with Heinz

Wanner

Hans von Storch

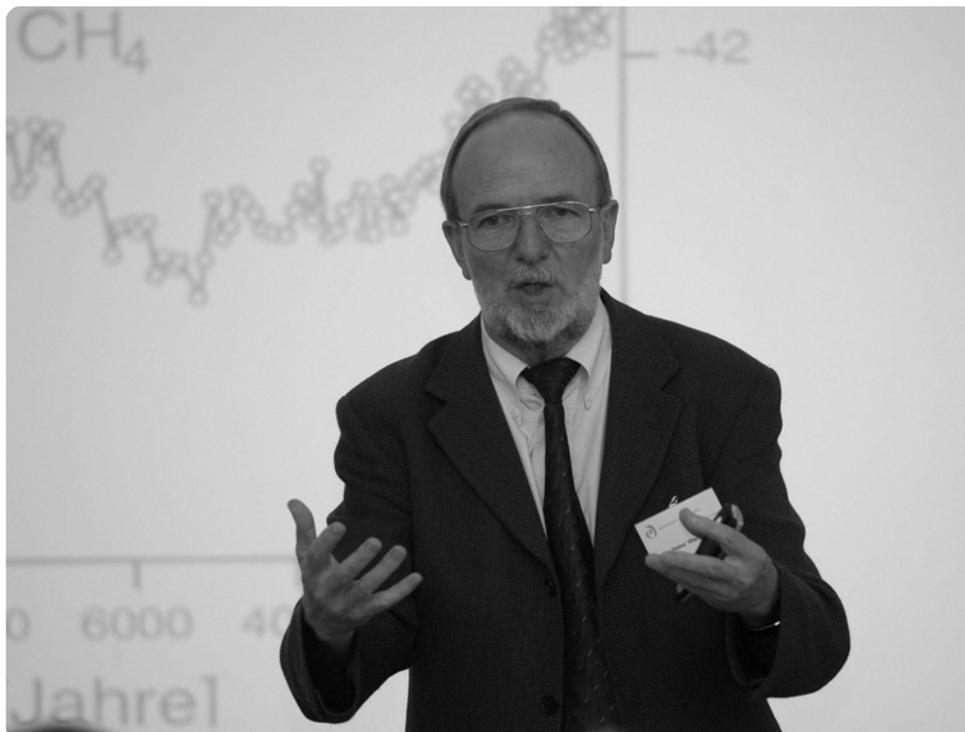
Heinz Wanner is a leading atmospheric scientist from Switzerland where he currently holds a professorship at the University of Bern. He serves as president of the Oeschger Centre of Climate Change Research at the University of Bern. From 2001 to 2008 he was the acting director of the Swiss National Climate Research Programme NCCR. Heinz Wanner is an honorary member of the Swiss Academy of Science. In 2006 he got the Vautrin Lud prize, which is called the unofficial Nobel prize in geography, and his achievements will be recognized by an Honorary Doctoral Degree in October 2009 from the Humboldt University in Berlin, Germany.

Heinz Wanner completed a teachers training college and taught in a primary school for four years. Afterwards he studied geography, climatology, geology and mathematics in Bern and in Grenoble (France). In his first "scientific life" Heinz Wanner worked on mesoscale dynamics, synoptic and mountain meteorology, and atmospheric chemistry. Then he got a postdoctoral research position at the Atmospheric Science Department of Colorado State University in Fort Collins, he worked as a deputy operations director of the GARP ALPEX programme and he also was a co-director of the Swiss research programme on meteorology and air pollution (POLLUMET).

After being nominated full professor at the University of Bern in 1988, his late colleague Hans Oeschger pushed him to jump into a second "scientific life." Since then, Heinz Wanner has worked on paleoclimate reconstructions and diagnostics at different time scales between the last few hundred years and the Holocene.

Heinz, your earlier work was on mesoscale processes, mountain meteorology and air pollution dispersion. Then you switched to paleoclimate dynamics. Isn't it a disadvantage to make such an about-turn during your career?

Wanner: It might be a disadvantage to do so today, because you have to be focused and publish in high-ranked journals, and this can be an around the clock effort. For me, I had a chance to get experience in basic meteorology, and to learn important techniques, such as weather analysis and weather forecasting or the principles of



Dr. Heinz Wanner. The paleoclimatologist in action (Engelberg symposium, 2004).

numerical modeling. This has greatly benefited me in paleoclimatic research.

You were an active teacher at university for almost 40 years. Did you ever feel this as a burden having all your other obligations?

Yes, it was a burden to prepare lectures until late in the evening. But the students made up for this in terms of their enthusiasm and stimulating scientific discussions. I would never have given up my work with students and young collaborators.

In the early 1980s you acted as an assistant operations director of the field experiment of mountain subprogramme ALPEX of the Global Atmospheric Research Programme (GARP). How was the scientific atmosphere during this field phase?

Overwhelming! To work in the ALPEX operations centre in Geneva with motivated top scientists and colleagues from all around the world, such as the brilliant director Joachim Kuettner, was one of the crucial kicks of my career. By the way: Joachim will celebrate his 100th birthday this year!

You served as an infantry colonel in the Swiss army. Did this interfere with your scientific career?

Yes, definitely, but I think I kept my

scientific mind. During my army service I was very often abroad in the Swiss mountains, and this gave me the chance to get a certain distance from the scientific environment, to meet very fascinating colleagues and friends (farmers, managers, politicians) and – quite important for a university person – to learn management skills.

You are the founding president of the Oeschger Centre for Climate Change Research at the University of Bern. What are the topics this centre works on?

Bern has a long tradition in paleoclimate research. It was our intention to form an interdisciplinary research centre. Therefore, 20 research groups within the Oeschger Centre participate in four work packages: global climate dynamics, regional climate dynamics (main emphasis: Europe, Alps), risks and biological impacts of climate change, impacts of climate change on economy and society.

What would you consider the two most significant achievements in your career?

Difficult question! Did I do too many things? As a scientist I tried to combine the best methods for reconstruction of past climate with tough dynamic and synoptic principles. As an (old) professor I have tried to form a rather small but creative team of young enthusiastic scientists. I would see these as two key achievements of my career.

When you look back in time, what where the most significant, exciting or surprising developments in atmospheric science?

Possibly the development of the computer and information technology. Thereby big steps forward were made in numerical modeling, data analysis and remote sensing. But the density and the speed at how information is processed today, is increasingly hard to digest.

Is there a politicization of the atmospheric science?

Undoubtedly, yes! Political parties want to increase their success with tendentious climate change issues, and scientists are besieged by journalists. This makes it difficult to remain fully independent or, in words of Roger Pielke Jr., to remain an "honest broker."

What constitutes "good" science?

Certainly not the production of several sensational short articles per year. It requires an intensive debate between individual scientists during a longer time period. It includes success and failure. "Good science" also includes excellent reviews.

What is the subjective element in scientific practice? Does culture matter? What is the role of instinct?

Maybe personal history matters more than culture. Without a doubt, instinct is an important ingredient of a good scientist, but is has to be combined with enthusiasm, creativity and stamina.

Teachers Learn about Wind Power During the ATEEC Fellows Institute

Morgan B. Yarker

The Advanced Technology Environmental and Energy Center (ATEEC) at the University of Northern Iowa promotes and supports national education about energy and technology. For the past 15 years, the ATEEC fellows institute has provided science content for high school and community college teachers nationwide.

Maureen Clayton, director of the ATEEC institute and Associate Professor of Biology at the University of Northern Iowa, explains that there is a lot of new content from research being done in the science community that doesn't get communicated to educators. "There are lots of great teachers out there that are eager to include this research into their classrooms, but they don't have the knowledge or resources to do it," She said. "This institute helps with that."

ATEEC recruits 18 high school and community college teachers every year to take part in the institute. ATEEC tries to recruit a mix of prior participants as well as new participants, but all have experienced teaching strategies.

The fellow's teaching experience is important because they are not expected to only learn content; they are also responsible for working in groups to develop new and innovative lessons that can be brought back to the classroom. These lessons are also available for free on the ATEEC website for any educator or interested party. The fellows generally describe the curriculum development project as being extremely time consuming, but at the same time one of the best outcomes of the institute because they develop several finished products that can be immediately used in the classroom.

Every year, the topic discussed at the ATEEC institute is different and reflects newer scientific research. Clayton said she tries to pick topics related to Iowa, since that is where the institute is held. This year, ATEEC's topic is wind power. In the past two years, wind power has grown substantially, producing approximately 15% of all electricity in the state, making it the second ranked state in the nation that produces wind power.

The participants took part in lectures from experts at the University of Northern Iowa campus as well as in field trips to locations that provided them with hands-on

experience. The participants visited Iowa Lakes Community College's Wind Energy & Turbine Technology program, which is a two-year program that trains wind turbine technicians. They also visited Clipper Wind in Cedar Rapids Iowa, a factory that assembles, delivers, and monitors turbines.

Clayton explained that the field trip experience is one of the most important components for teachers to learn about a topic. "At first, I thought the learning came from access to researchers and facilities on campus. But when I saw how fascinated they looked while on their field trips, it really hit me how much they were getting from it."

Participants echo Clayton's comments about field trips. Roy Sofield, ATEEC participant and instructor at Chattanooga State Technical Community College, said that he chooses to attend ATEEC every year because he knows the field trips will provide excellent hands-on learning as well as interesting and exciting content. "The topic of wind this year is a timely and popular attraction. Having a history with ATEEC, I knew the field trips would be so awesome... I knew we would do incredible things. Every year, it has met my expectations."

Sofield also added, "I find it both interesting and kind of funny that more and more my lectures are starting with the phrase, 'when I was in Iowa, I learned...'"

Bob Ford, instructor at Frederick Community College in Maryland, had the unique opportunity to climb the wind turbine with technician instructors at Iowa Lakes Community College. Having first hand experience in what the technicians do every day provides the teachers with unique material to bring back to the classroom. When asked what he learned this week, Ford replied, "Seeing the technology in the turbine was amazing, and the view from the top was great!"

For more information about ATEEC and the fellows institute, visit: www.ateec.org.



Heinz Wanner as postdoc in the 1970s.



Participants in the AETEEC Fellows Institute.