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**InBev-Baillet Latour**

# Antarctica

## The Next Generation

### Speeches



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princess  
elisabeth  
antarctica

## **ALAIN HUBERT**

*President, International Polar Foundation*

Ladies and Gentlemen, Distinguished Guests and Antarctic veterans and newcomers,

It is my honour to welcome you to the Prize giving ceremony for the Antarctica Fellowship.

This Fellowship is of quite recent date but it is the largest of its kind being awarded for Antarctic researchers at the present time. Its objective is to encourage world class research at the Princess Elisabeth Antarctica, which serves an area where the potential for carrying out new and ground breaking research is immense. At 150,000 €, the Antarctica Fellowship is the largest research grant that a young scientist can receive to carry out research in Antarctica.

We would like to thank the InBev-Baillet Latour Fund, and in particular Jan Huyghebaert and Alain De Waele, for their support in providing this incentive to young researchers aiming at scientific excellence. Without their unfailing support for the project of the construction of the Princess Elisabeth Station, their donations of scientific equipment and their continued support for the scientific activity, we would not be sitting here together today.

I probably do not need to remind you that Antarctic research is an important element of the investigation aimed at understanding global climate dynamics. The research being undertaken in the Antarctic has a relevance to the wider social issues which our planet faces, and in particular faced by the next generations who will become the decision-makers of the future.

That is why this conference entitled “Antarctica: The Next Generation” held here at the prestigious Royal Belgian Academy of Sciences and Arts, will be the first of, we hope, a long series where distinguished scientists will share with us their ideas and their results coming out of their activities in the Antarctic, and in particular around the Princess Elisabeth Antarctica, where we will welcome an ever increasingly international crew of scientists in the coming years.

We would also like to thank the Scientific Committee on Antarctic Research for the support and encouragement that they have given to us in the publicising of this award, and the scientists from all over the World who have graciously carried out the peer reviews of the proposed research.

It is due to them that we have been able to appreciate the high level of proposals received, each of them offering a cutting edge approach, and methodology to the crucial questions in their fields.

We would also like to thank Jörn Thiede, President of the Jury, who is unfortunately unable to be with us here today. Professor Thiede has a long and distinguished career at the Alfred Wegener Institute and he has continued to share his expertise around the planet, with generosity and openness. We are particularly indebted to him for his unfailing support. Our thanks also go out to Professor Colin Summerhayes who participated in the final selection alongside Professor André Berger and Professor Hugo Declair, two of our distinguished founding members.

It is also with great pleasure that we welcome here today the generation that carried the torch of Antarctic research for so many years and in conditions far more difficult than those with which we are confronted, operating as we do out of the very comfortable Princess Elisabeth Station.

These veterans like Tony Van Autenboer who helped us locate a site for the station, and Jean Jaques Derwael, who was Expedition leader in the 1960s, and Professor Emerita Ghislaine Crozaz, the first Belgian woman in the Antarctic as well as members of the Belgian Antarctic Expeditions from 1965 to 1968, Hugo Declair, Jacques Gregoir, and Béatrice Gregoir-Duparque, have honoured us by being present here today.

It is also very heartening to see amongst us so many young polar scientists, the future of polar research.

The purpose of this event today is, as I said, to celebrate excellence in Antarctic research.

This afternoon we will hear from scientists, past Antarctica Fellows, who have conducted research at the Princess Elisabeth Antarctica (PEA) station. Their presentations are very exciting, and show what new techniques available today are doing to push forward the frontiers of knowledge.

Since 2008, the InBev-Baillet Latour Antarctica Fellowship has financed the research projects of these gifted young scientists as they sought to contribute to our ever-growing body of knowledge of the planet's southernmost continent.

We will also hear from the Royal Meteorological Institute's Alexander Mangold of the atmospheric research that he is carrying out at the PEA. While Alexander himself has not yet applied for the Fellowship, his work is of such importance and is unique in this remote location, that the InBev-Baillet Latour Fund is providing the support necessary to build an extended Atmospheric Chemistry lab at PEA.

To close proceedings this afternoon, the fourth Antarctica Fellowship will be awarded to one of the young scientists here today. The young laureate will give us a presentation of the research that he intends to carry out this season. And we hope that you will agree with us all that he is a truly worthy winner of the Fellowship. We are all highly impressed by what he intends to do, which will not only add to the work currently being carried out by other researchers, but will carry it one step further and will provide us with new and exciting data to fill in gaps in current knowledge.

And a special thanks goes out to all of you for your interest in Antarctic research. Your presence here is of special significance as you become the receptacles of the knowledge that is being accrued. All that remains is for me to wish you an enjoyable afternoon.

Alain Hubert  
President of the Conseil d'Administration International Polar Foundation  
Brussels  
17th September 2014

## HUGO DECLEIR

*Professor emeritus, Vrije Universiteit Brussel*

Antarctica has always been fascinating. At the end of the XIX century, Polar explorers risked their lives fighting a formidable enemy, an immense vast and desolated frozen plateau, battered by the wind and characterized by the lowest temperatures on earth. They did so, risking their lives away from all human interference and possible rescue. Today, things have changed drastically. Since the International Geophysical Year of 1957 and its sequel the International Polar Year of 2007, this same enemy of the Polar heroes, the ice dome with thicknesses of more than 4.5 km, the exceptional high wind velocities and low temperatures, the treacherous sea ice conditions they all have become subject of fascinating research: Antarctic science, and that includes the study of the oceans surrounding the continent as well as the study of living organisms both on land as in the sea.

Antarctic science positioned itself at the core or at the very heart of our understanding of the evolution and present state of the earth's climate and environment. To carry out this research Polar scientists can now rely on a grid of well equipped stations, on ice breakers and research vessels and on air support while being connected with satellites, internet, GPS and others. In this respect we can be proud of the very special place that our Princess Elisabeth Station occupies in that array of scientific and logistic platforms.

But, Antarctica is more than an enormous heat sink, controlling climate, sea level and living organisms. Due to its unique morphology and physical characteristics it is a vantage area, a privileged area for certain activities which are less obvious elsewhere.

Astronomy is one of them. The high altitude at the centre of the ice cap - more than 3000m - the extreme clean air away from all human interference but above all the nearly absence of water vapor due to the low temperatures, provides exceptional conditions for observing the stars.

Another example is the ice cube project at Amundsen Scott South Pole station where the availability of one cubic kilometer of ice at a depth of 1.5 and 2.5 km, allows - by drilling holes in the ice - the emplacement of more than 5000 photomultipliers to detect the feeble light generated by the interaction of cosmic neutrino's with their environment.

A third example are the specific conditions favouring the concentration of meteorites making Antarctica the best meteorite trap on earth. How this is possible and to what extent it can provide us with information on the solar system will be the subject of the second speaker before the coffee break, Steven Goderis.

Steven is at present a postdoctoral fellow of the Research Foundation - Flanders. He obtained his PhD in 2011 jointly at the Vrije Universiteit Brussel and the Universiteit Gent and is author of 17 peer reviewed articles. He participated in 3 successful Antarctic expeditions searching for meteorites in the blue ice areas just south of the Sør Rondane Mountains and was awarded the InBev-Baillet Latour Antarctica Fellowship in 2009 while his research is partly sponsored by the Belgian Science Policy BELSPO.

The first speaker of today is Reinhard Drews, a post doc researcher at the Laboratoire de Glaciologie of the Université Libre de Bruxelles. He obtained his PhD at the Alfred Wegener Institute of the University of Bremen and is author of 7 peer reviewed papers. He participated in 3 expeditions to the Antarctic. All three expeditions took place in Dronning Maud land, two of them in the neighbourhood of Princess Elisabeth Station on the Roi Baudouin ice shelf, floating platform where upon the former Belgian Base Roi Baudouin was situated. He was awarded the InBev-Baillet Latour Antarctic fellowship in 2012 and the research is partly sponsored by the Belgian Science Policy, BELSPO.

We are very curious to hear from him how the combination of different physical techniques, like SAR, radio echo sounding, GPS measurements and ice flow modeling allows to decipher the complicated ice dynamics. It seems to me that especially the understanding of the dynamics taking place at or near the grounding line are paramount in understanding the overall interaction between the ice cap and its surrounding. But let us hear what Reinhard has to tell us about that.

## **ANDRE BERGER**

*Professor emeritus, Université Catholique de Louvain*

It is a pleasure to meet Dr. Elie Verleyen today, the recipient of the first InBev-Baillet Latour Antarctica Fellowship that he received in 2008. He is from the Laboratory of Protistology & Aquatic Ecology at Ghent University. This Fellowship allowed him to conduct one field season at the Princess Elisabeth station.

His research project Delaqua participates to the understanding of the deglaciation history and past changes in ice-sheet thickness and climate in the Sør Rondane Massif in East Antarctica during the Late Quaternary. Using various biological indicators found in sediments core, scientists participating in the DELAQUA project are trying to put current climate change in Antarctica in perspective with the natural variability of Earth climate. In order to better understand how present and future climate anomalies will affect the cryosphere and the biological communities inhabiting Antarctic ecosystems, regional reconstructions of past climate change based on paleoecological records and information regarding former ice-sheet dynamics are necessary. In order to find these microorganisms, Elie Verleyen has drilled sediment cores into the bottom of lakes with the help of researchers from the British Antarctic Survey.

The second speaker of this session is not an InBev-Baillet-Latour Fellowship recipient, but following at the Fellowship Committee meeting in June, we thought that it would be good to invite him to speak about the meteorology and atmospheric chemistry work which he has been doing at the station. Dr. Alexander Mangold is a German meteorologist from the Royal Meteorological Institute of Belgium. He is the principal scientist Investigator of the project BELATMOS which aims at Monitoring the Atmospheric Composition at the Belgian Antarctic station Princess Elisabeth.

BELATMOS is coordinated by the Royal Meteorological Institute of Belgium, in collaboration with the Belgian Space Aeronomy Institute (Christian Hermans, Michel Van Roozendael) and the University of Ghent (Willy Maenhaut).

Dr. Mangold has taken part in several campaigns at the Princess Elisabeth Antarctica Station, up to the most recent in 2013/14 season. His work has focussed on long-term monitoring of the chemical and particle composition of the Antarctic atmosphere, ozone monitoring and of UV radiation.

As he says himself: I'm the one who should go to Antarctica every year because I'm installing all the instruments and collecting and analyzing the data. Now that everything has been set up, in theory, I could train someone else how to maintain the instruments and take measurements. With these good words, I give you the floor.