



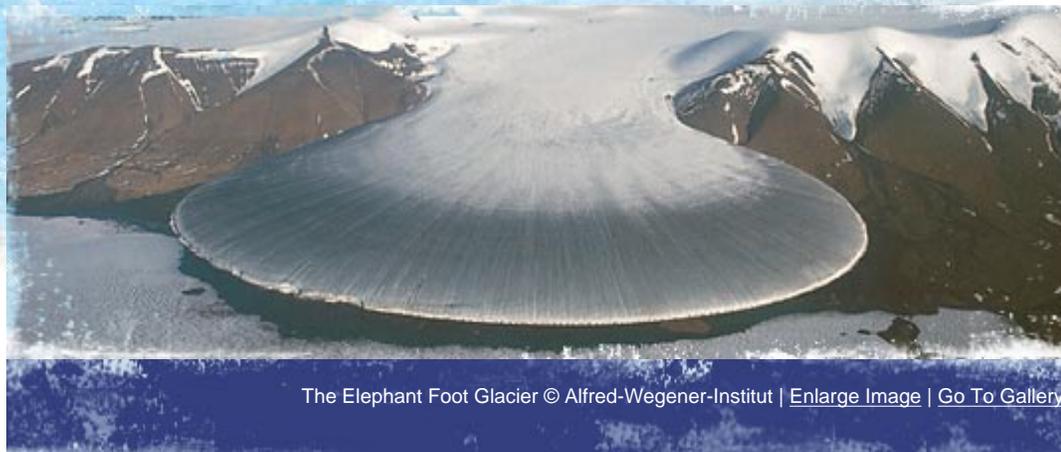
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The Elephant Foot Glacier © Alfred-Wegener-Institut | [Enlarge Image](#) | [Go To Gallery](#)

feature

[Polar Oceans: Home](#)**IPY Ocean Research:**[Summary](#)[Related IPY Projects](#)*IPY projects looking at Polar Oceans.*[Meet The Scientists](#)*Profiles of researchers and other IPY participants. Several are happy to be contacted.***Get Involved:**[Flyers: In many languages](#)*Download an activity flyer in your language*[Educational Activities](#)*Learn about marine Biodiversity, physical oceanography &*

Polar Oceans: Meet The Scientists

Learn about the People behind the Science!

Dr Ralf Staebler, atmospheric scientist

Ralf Staebler is a research scientist in the Air

Quality Research Division of Environment

Canada. Most of his research focuses on two

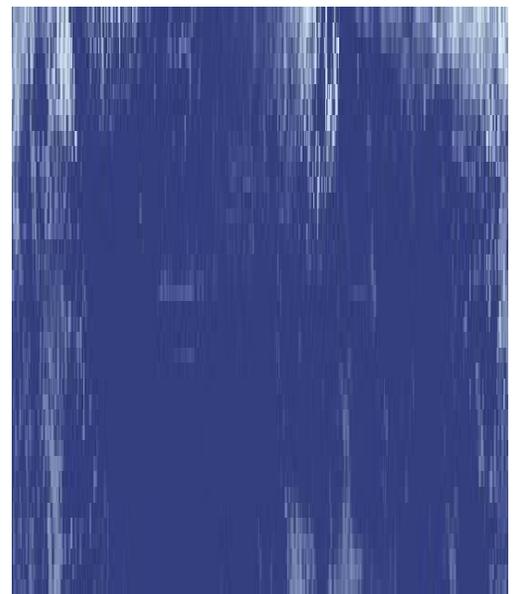
areas of interest: the first is doing research on

forests and how they interact with the

atmosphere; taking up CO₂ and various

pollutants, but also producing organic compounds

and aerosols that may have climatic and health



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Jenny Rock explores her research through printmaking - what might you do?

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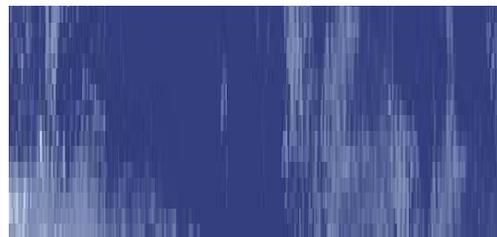
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impacts. The second is research in the Arctic. He admits that ever since his first 4-month stint in the north in 1992 to measure aerosol particle properties, he has been addicted to this amazing



part of the world. Currently he is working with colleagues from Canada, the USA and Germany to better understand the fate of ozone near the ice during ozone depletion episodes in the spring, when ozone frequently disappears completely from the lower atmosphere. He is involved in various activities to measure the uptake of ozone by different types of snow and ice surfaces as well as to investigate processes in the boundary layer (up to about 1000m above ground) that affect these ozone depletions.

Dr José Xavier, marine ecologist

José Xavier is a young Marine Ecologist, doctorate of the University of Cambridge (United Kingdom), with numerous publications in ecology and conservation of marine organisms in the Antarctic Ocean. His studies focus on understanding food web dynamics in relation to climate change, particularly using albatrosses and penguins. José already has an extensive experience in interdisciplinary studies and international collaborations, coordinating



research and education and outreach projects within IPY and being member of the Portuguese Committee for the International Polar Year and of the Association of Polar Early Career Scientists (APECS). José will be onboard of the RRS James Clark Ross and at Bird Island Research Station (British Antarctic Survey) between March and November 2009, on his next fieldwork season adventures on the Antarctic. These can be followed at cientistapolarjxavier.blogspot.com.

Email: JCCX@cantab.net

Centre of Marine Sciences, Univ. Algarve, Portugal

Centre Etudes Biologique de Chizé, France

British Antarctic Survey, UK

Dr Rebecca Batchelor, atmospheric scientist

Rebecca (Bec) is post-doctoral scientist at the University of Toronto. Her research is focused on studying the Arctic atmosphere by looking at trace gases involved in ozone depletion, air pollution and climate change. She spends several months a year at the Polar Environment Atmospheric Research Laboratory (PEARL) at



Eureka (80°N), in the Canadian High Arctic, and will be there during the IPY Polar Oceans Days.

Growing up in New Zealand, she was always fascinated by the “Ice”. Her childhood dream of visiting Antarctica came true when she spent a year making measurements at New Zealand’s Scott Base in 2003, as part of her doctoral research. She then went on to spend another year in Antarctica, this time at the United States’ McMurdo station, before switching hemispheres to do research in the Arctic. She enjoys the international and collaborative nature of Polar research, and loves sharing her research and her experiences.

Email: rbatchelor@atmosph.physics.utoronto.ca

Department of Physics and Astronomy, University of Toronto, Toronto, ON M5S 1A7, Canada

For more details about PEARL, visit www.canadac.ca.

For daily journals and photographs from her 2009 Arctic field campaign (Feb 19 – April 2) visit the [Canadian Arctic ACE Validation Campaign](#) website.

Dr Falk Huettmann

Falk started to study sub-Arctic seabirds in Canada in the mid-90s. He is now located at the University of Alaska, and is involved in several global online data and web portal initiatives dealing with Biodiversity, Economy, Climate, Diseases, Marine and Terrestrial Ecosystems, and Predictive Modeling. His original background is in Forestry (Universities of Germany, Norway,

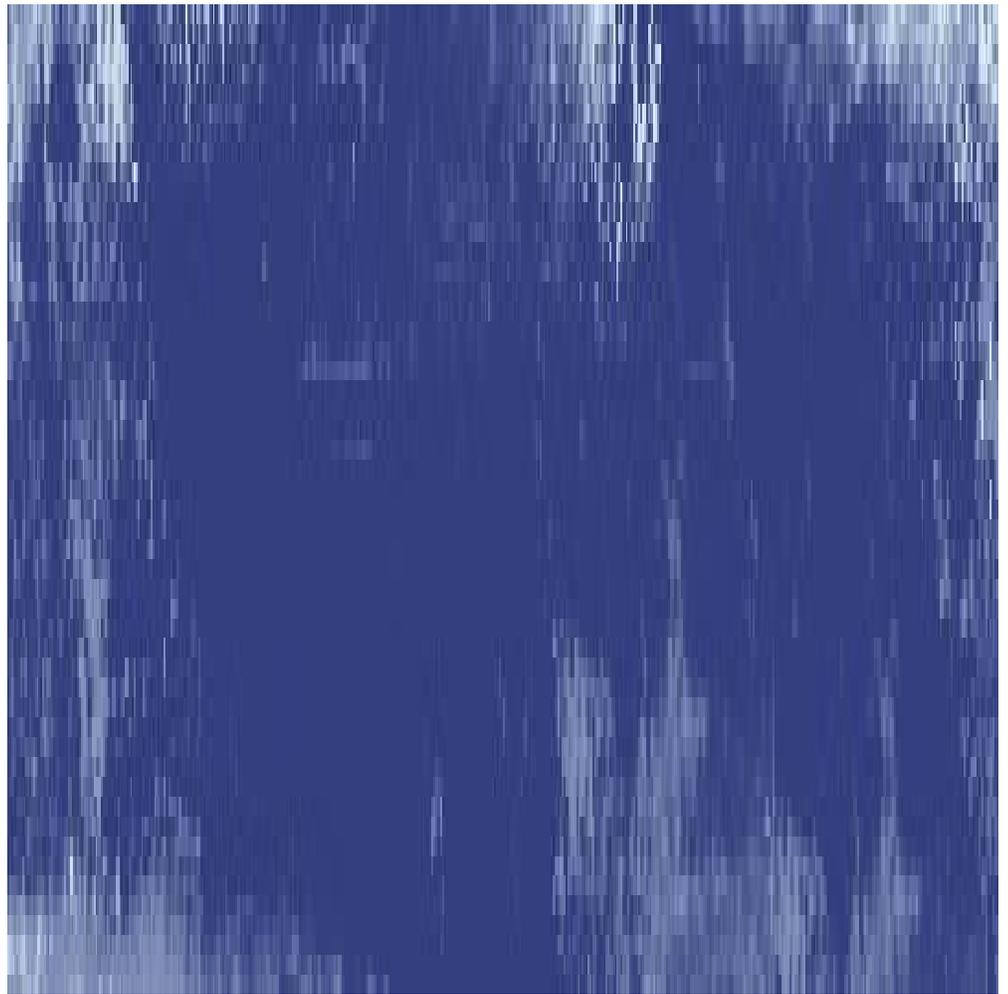


Canada and with the EU), but for a wider and more complete focus his projects also deal with Russia, Alaska, Asia, tropical, mountain and



conservation subjects. Falk employs interdisciplinary and progressive research approaches that involve EcolInformatics, Landscape Ecology, GIS, Databases, Machine Learning and Metadata for instance.

Some of the Arctic datasets he helped compile can be found at the [ARCOD \(Arctic Ocean Diversity\) webpage](#). A current project of his tries to find an optimal spatial set-up for a circumpolar nature protection system (see a first draft map, below).



Brent Else

Brent is a PhD student at the University of Manitoba, studying how carbon dioxide (CO₂) is transferred between the atmosphere and the Arctic Ocean. In particular, he is interested in



what role sea ice plays in that transfer, and how changes in sea ice conditions might affect the transfer in the future. Brent has taken part in 6 scientific cruises in the Arctic (all aboard the



Canadian Coast Guard icebreaker Amundsen) and has also been involved in a number of land-based sea ice studies.

Dr Loïc Jullion, physical oceanographer

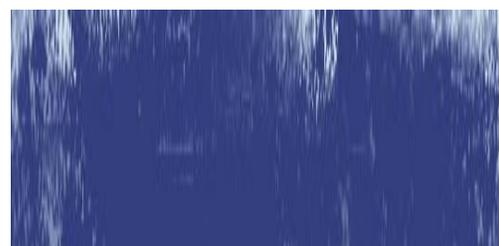
Loïc is a post-doc at the National Oceanography Centre in Southampton, working on bottom water formation and export in the Weddell Sea. He and his colleagues are trying to understand how much bottom water is formed near Antarctica and how much leaves the Weddell Sea and spreads at the bottom of all the other oceans. The bottom water formation near Antarctica is an important



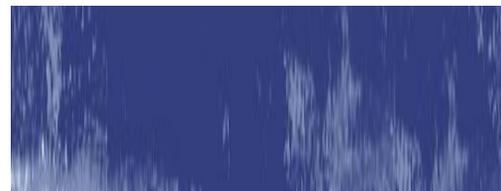
component of the global oceanic circulation, which regulates our climate. Loïc did his PhD on the connection between the Southern Ocean and the subtropical Atlantic. He has a particular interest in the water mass properties in the Southern Ocean and how variability in these properties can tell us about our climate and its variability. Because the water masses found in the deep ocean are formed at the ocean surface before sinking, their properties (temperature, salinity...) can tell us about the climatic conditions in their region of formation at the time when they were in contact with the atmosphere. During the last three years, Loïc participated in 3 research cruises in the Weddell Sea, and he considers this to be the best part of the job. It is very hard work but the scenery and the wildlife make it up for it a million times over, he claims.

Rachael Mueller, physical oceanographer

Rachael Mueller is a NASA Earth and Space Science Fellow and PhD candidate in physical oceanography at Oregon State University. She



began her PhD studies in 2007 on ocean/ice-shelf interactions along the Antarctic Peninsula, but the Polar Oceans captivated her interest

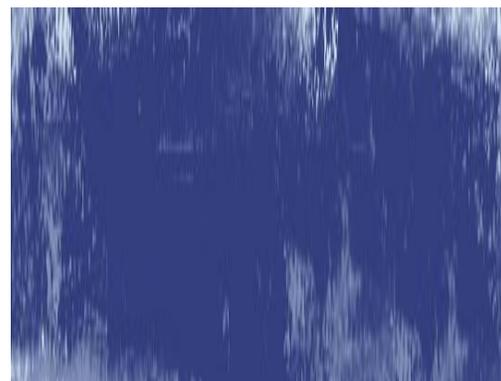


years before, during undergraduate studies. Her research is inspired by diverse scientific interests and a multi-disciplinary background. She is currently working on a project that combines satellite remote sensing and numerical models towards understanding the interactions between the continental ice and oceans in regions that are deep below sea level and difficult to access, namely, under ice shelves.

Rachael's focus is on the Larsen-C Ice Shelf. Located on the eastern side of the Antarctic Peninsula, Larsen-C is the last remaining section of the Larsen Ice Shelf, since -A and -B collapsed in 1995 and 2002. Her goal is to understand the ocean's role in melting and thinning the Larsen-C Ice Shelf in order to better assess the conditions that lead to ice shelf collapse. While her work only requires a computer, she was able to participate on an Antarctic research cruise in 2007 and hopes to return, as she found the experience quite inspirational for research. This field of study is so abundant in unanswered questions that she encourages interested and motivate youth to join her in the many years ahead of fulfilling work.

Dr Jenny Rock

Jenny Rock's current work focuses on Antarctic fish, in a project integrating life history variation, oceanographic variability and gene flow. In collaborative work with the British Antarctic Survey, she is merging predictions of population connectivity based on physical ocean models



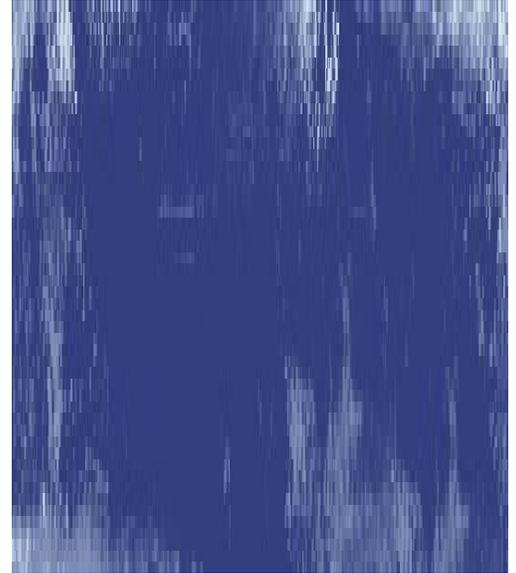
with genetic data, to assess the effects of variation in climatic events and developmental biology.

Previously she studied aspects of latitudinal adaptation in Arctic amphipod crustaceans, and has also been involved in work on population ecology of humpback whales in the Southern Ocean. Her research generally integrates molecular, physiological and ecological approaches to study the mechanisms of evolutionary adaptation to environmental variation. Jenny's study animals have also included NZ gecko lizards and Australian lungfish, but she is happiest when her work relates to temperature adaptation in polar/high-latitude marine life, Jenny's first degree was a BA in Human Ecology, a largely research-led

experience exploring the interface between organisms, environments and societies. This continues to fuel her interests in scientific paradigm shifts, and how a sci-art approach effectively communicates and propagates such shifting paradigms. [Website](#).

Dr Jill P. Zamzow, marine ecologist

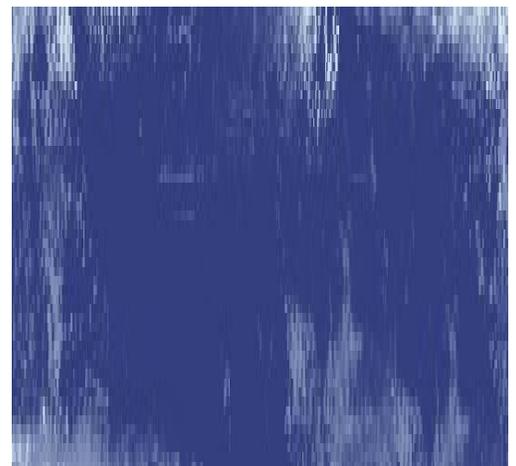
Jill Zamzow is a postdoctoral fellow, funded by the National Science Foundation Office of Polar Programs, and is affiliated with the University of Alabama Birmingham. Her research project is a study of top-down and bottom-up forces affecting amphipod distributions in Antarctic near-shore waters. She studies fish predation (top-down) and the chemical and structural characteristics of algae (bottom-up), and how these two forces



interact to affect amphipod host-alga choice and survivorship in the laboratory, and resultant amphipod distributions in the field. She spent February to June of 2008 at Palmer Station, Antarctica, SCUBA diving to collect animals and algae, and performing a series of laboratory experiments in aquaria. She enjoys field work in any ocean, and has published numerous papers on the effects of ultraviolet radiation on coral reef fish physiology. She is a member of the Association of Polar Early Career Scientists, active in the Career Development and Ethics and Social Responsibilities committees.

Dr Rolf Gradinger, polar ecologist

Rolf Gradinger studied biology at two universities in Mainz and Kiel, Germany, earning a Masters and Doctorate degrees in marine biology at Kiel University. Since completing his PhD, his main interest has been in Arctic sea ice ecology, which he explored as a post-doc and assistant professor at two institutions in Germany. In 2001



he moved to Alaska to work as a polar ecologist at the School of Fisheries and Ocean Sciences at the

University of Alaska in Fairbanks. Recently he explored the activity and diversity of life in Arctic sea ice in various locations, including three Arctic expeditions with ice breakers for three projects funded by the National Science Foundation and more than 10 trips to Barrow, Alaska. Besides his research, Rolf is among the leaders of the Census of Marine Life Arctic Ocean Diversity project and a member of national research committees (e.g. NSF BEST Scientific Steering Group). In his spare time he also enjoys listening to classical music, birding, fishing, kayaking, and spending time with his family.

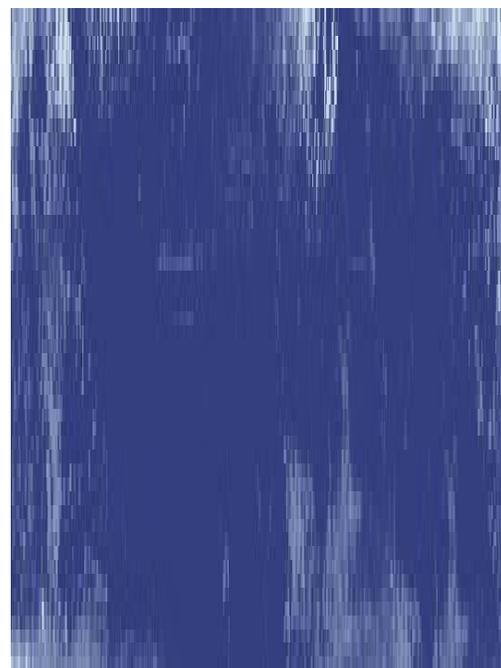
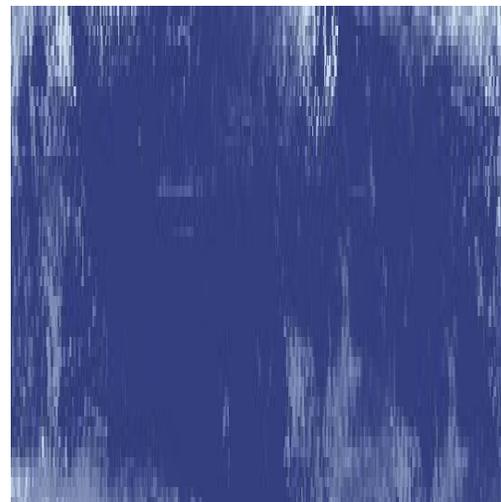
Rosemary Willatt, geophysicist

Rosemary Willatt is a PhD student at the Centre for Polar Observation and Modelling at University College London. She studies sea ice thickness using satellite radar altimetry, a technique which allows large areas of sea ice to be studied from space. Sea ice is an important component of the Earth's climate system and polar ecosystems, so it is essential to monitor changes in sea ice over

large areas and over long timescales in order to determine trends, which satellites allow us to do. She has been to Antarctica on an icebreaker to do experiments studying how a radar like the ones used for satellite radar altimetry interacts with the sea ice.

Dr Russ Hopcroft, marine biologist

Russ Hopcroft is an Associate Professor at the University of Alaska's Institute of Marine Science in Fairbanks. He grew up fascinated by aquatic life (and Jacques Cousteau specials), pursuing the sciences during his education. Russ received his PhD in 1997 from the University of Guelph, Ontario, Canada. The focus of his graduate research was on marine plankton ecology in the tropical waters surrounding Jamaica, West



Indies. From 1997 to 1999, he was a Post-doctoral Fellow at the Monterey Bay Aquarium

Research Institute (MBARI). Russ pursues a broad array of research interests, concentrating on the composition, production and energy flow of the planktonic trophic levels that ultimately shape the structure of all marine communities. Since joining UAF in 2000, most of his research focuses on copepod and euphausiid crustaceans in polar and sub-polar waters surrounding Alaskan waters. He serves on the steering committee of several Census of Marine Life projects.

Dr Irene Schloss, marine biologist

Irene Schloss holds a PhD in biological oceanography and a licence in biology (University Buenos Aires, Argentina). During the last 20 years she has developed an expertise in polar and sub-polar phytoplankton dynamics, the spatial and temporal variations on planktonic communities and physico-chemical variables in

relation with global climate change. Currently, she is developing studies on modelling marine plankton biological processes. She is an Associate Professor at UQAR since 2009, and research assistant since 2008. She is also a researcher at the Dirección Nacional del Antártico and CONICET in Argentina. She has worked in various international research projects on the role of marine plankton under different climate change scenarios, including studies on the effects of UVB radiation.

Kim Jochum, wildlife biologist

Kim is a wildlife biologist from Germany and got involved with polar research in 2006 when she started to work with polar bears in Churchill, Canada. Kim's research focuses on the usability and evaluation of short-term behaviour data ('behaviour modeling') from free-ranging mammals carried out in collaboration with the University of Alaska Fairbanks and the Institute

for Wildlife Research in Hannover, Germany. Her

background ranges from mammalian research in the tropics, coastal zones and temperate zones to the subarctic. Kim is further involved with APECS (Association of Polar Early Career Scientists) in the Research Activities Committee as Coordinator for Terrestrial Biology and highly interested in interdisciplinary research as such. Currently Kim is analysing her 3-year polar bear behaviour data and keen on finding the right PhD position in the field of her major interest in the near future.

Dr Stephen Hudson, atmospheric scientist

Stephen Hudson is a postdoctoral researcher at the Norwegian Polar Institute. His research focuses mostly on the ways in which ice and snow interact with sunlight to affect earth's climate. Because they are so bright, snow-covered surfaces reflect much of the energy that reaches them from the sun back into space; this is energy that is kept from heating the earth. Since moving to Norway from the USA he has worked mainly on sea ice in Arctic as part of the

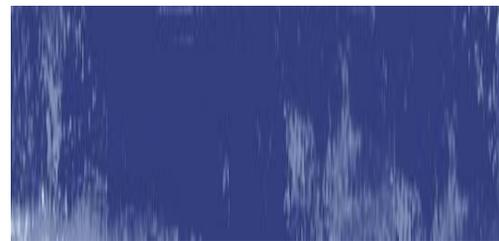
IPY project iAOOS-Norway. He became intrigued by the polar regions before high school, and by the time he was in university he had the goal of spending a winter at the South Pole. Just after starting graduate school, he was fortunate enough to get to live this dream, spending most of 2001 at the Pole; after this experience, he was hooked on the field work and has had many trips since then to both the Arctic and Antarctic. He particularly enjoys the opportunities that field work provides to meet people from all over the world with many different backgrounds in an environment that encourages interesting conversations.

Photos from some of his field work are at www.stephenhudson.net. Email: hudson@npolar.no

Dr Jan Bottenheim, atmospheric scientist

Born in the Netherlands, Jan Bottenheim received his training as a chemist at the

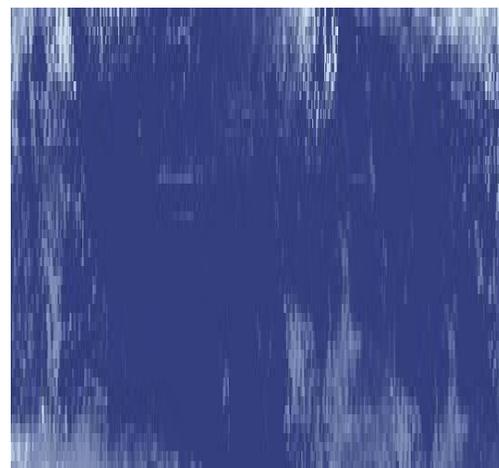
University of Amsterdam. In 1980 he joined the Air Quality Research Division of Environment Canada where he is currently a senior research scientist. In the late 1980s, Jan and his colleague



Leonard Barrie made a dramatic discovery. In the spring, ozone was disappearing from the lower atmosphere in Polar regions and there was a connection to bromine originating from sea salt. To better understand the science behind this discovery, Jan has led several field campaigns in the Arctic involving international teams of scientists. This led to more unexpected discoveries such as the surprisingly efficient removal of mercury from the air. Currently he leads the IPY program "OASIS-CANADA" (Ocean-Atmosphere-Sea Ice- Snowpack interactions) which is focusing on ways to study the air over the ocean itself. For this purpose he developed the "Out On The Ice" or OOTI sled. The OOTI sled is equipped with sophisticated instruments measuring the air composition right over the ocean ice. Jan is also collaborating with colleagues from the US and Germany to develop a fully autonomous buoy to make chemical measurements for up to one year over the Arctic ocean. The O-buoy (O = ozone) will be a first of its kind in the world. Besides spending a lot of time in the field where the air chemistry actually takes place, he has been active in developing mathematical models to make sense out of his (and others) measurements.

Alexandra Steffen, atmospheric scientist

Alexandra Steffen is a research chemist originally from Montreal, Canada. She now lives in Toronto, Canada where she has been working with Environment Canada's Air Quality Research Division for almost 14 years, spending most of her time on Arctic research. Her work is focusing on the transport and transformation of mercury in



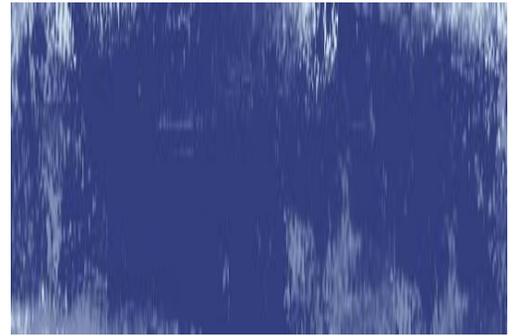
and into the Arctic environment. She has been to many different Arctic locations but spends most of her research time in Alert, Canada. She is presently working in northern Alaska with the OASIS-Canada team to investigate the role that air plays in how mercury gets into the Arctic snow pack.

Dr Andy Mahoney

Andy is currently at Scott Base, Antarctica where he is one of two scientists wintering-over to study the growth of sea ice in McMurdo Sound. Up until recently all his research has been in the Arctic.

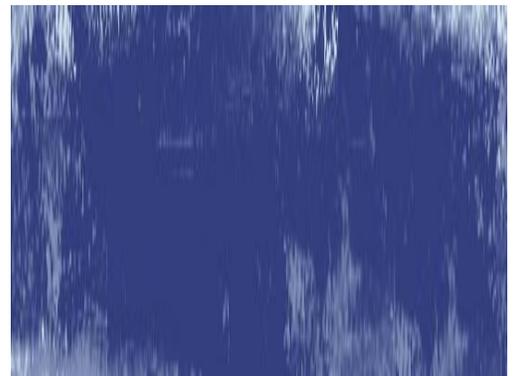
For his PhD at the University of Alaska, Andy

studied landfast sea ice along the Alaska Arctic coast. As a postdoc at the University of Colorado, he studied long term sea ice variability in the Russian Arctic and visited communities in Alaska, Nunavut and Greenland as part of the interdisciplinary Siku-Inuit-Hila (Sea Ice-People-Weather) project studying the dynamic relationship between people and sea ice. He is now a postdoctoral fellow at the University of Otago, New Zealand and has been surprised just how different the Antarctic sea ice environment can be from the Arctic. At Scott Base, Andy is studying both the sea ice and the ocean underneath it to better understand what happens in the ocean underneath ice shelves and how this affects sea ice growth. It is known that at the end of winter, the sea ice contains crystals that can only have formed by seawater coming into contact with the Ross Ice Shelf deep below the ocean surface, but few scientists have studied both the sea ice and ocean during the winter. [Read more at the blog.](#)

**Michael Feldman**

Michael Feldman manages the U.S. Census of Marine Life (CoML) program based out of Washington, D.C. CoML is a broad global scientific initiative that supports research at the frontiers of the ocean - from the deepest and darkest depths to the sandy beaches, from the

hottest undersea vents to the coldest arctic waters - to increase our understanding of all marine life from microbe to blue whale. The program consists of 17 different field projects based all over the world including Census of Antarctic Marine Life and Arctic Ocean Diversity, which are two International Polar Year projects focused on the life that lives and flourishes around the poles. Currently based in Chicago, Michael splits his time between the Shedd Aquarium and CoML headquarters in Washington, D.C. though wishes he could spend some time out in the field.

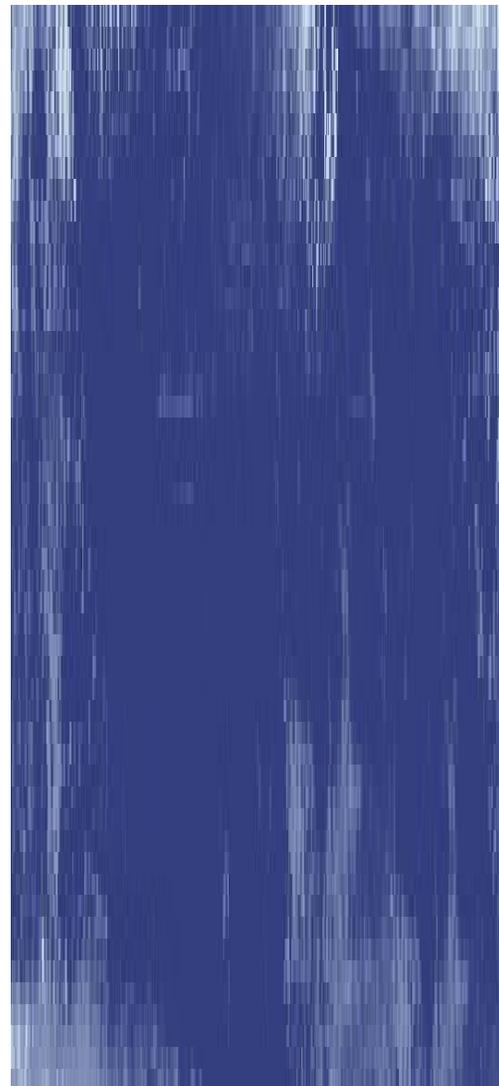


The world's first comprehensive Census of Marine Life - past, present, and future - will be released in 2010. For more information about the global and U.S. CoML efforts, please visit www.CoML.org and www.CoML.US.

Dr Lee Cooper

Lee Cooper is a Research Professor at the Chesapeake Biological Laboratory of the University of Maryland Center for Environmental Science. He received his Ph.D. in Oceanography from the University of Alaska Fairbanks in 1987 following undergraduate and graduate work at the University of California, Santa Cruz and the University of Washington. His research interests include biogeochemical cycling in high-latitude ecosystem through the use of isotopic and elemental tracers. He has extensive polar shipboard research experience on all three current U.S. Coast Guard icebreakers, including service as chief scientist coordinating several multidisciplinary research programs. He was also lead principal investigator for the Bering Strait Environmental Observatory, which involved local

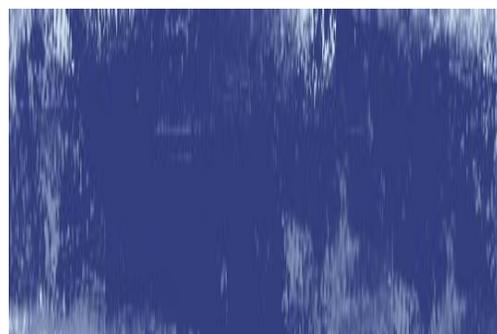
subsistence hunters in collection of samples and pilot-scale continuous seawater pumping operations in Bering Strait from Little Diomedede Island. Dr. Cooper has also been active in working to improve collaborative bi-national research in the Russian Arctic and he also participates as the U.S. representative in an International Arctic Science Committee working group that exchanges information with other arctic countries on multinational research activities in the Russian Arctic. He has been an author of more than 80 peer-reviewed publications, many based upon collaborative fieldwork in the Arctic. He served as a member of a National Academy of Sciences study committee on designing an Arctic Observing Network that will improve capabilities for detecting climate change in the Arctic. Other



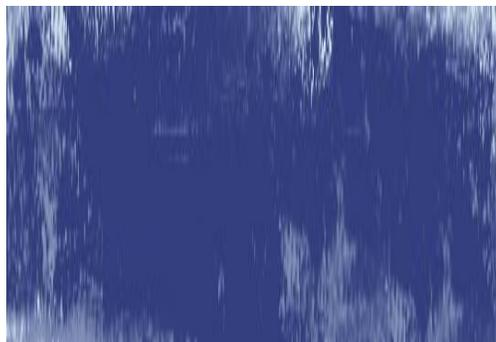
efforts in the Arctic also included studies of radionuclide contamination supported by the Office of Naval Research during the 1990's, including sediments, water samples, and tissue samples of animals harvested during subsistence hunting. His public outreach efforts to explain climate change, particularly in high latitude regions have included interviews for mass media outlets such as the CBS Evening News, the News Hour with Jim Lehrer, the Los Angeles Times, The Nome Nugget, USA Today, National Public Radio and the BBC.

Dr Martin Nweeia, Marine Mammal Biologist

Dr. Nweeia teaches at Harvard University and is a research associate in the Marine Mammal Program at the Smithsonian Institution. He holds doctorate degrees in dental surgery and medicine and devotes his studies to the narwhal tusk, the



fabled tooth that inspired the unicorn horn. Martin spends his summers with narwhal in the Canadian High Arctic collaborating with the Arctic Research Division of Fisheries And Oceans Canada. His goal is to discover the function of the tusk. He can usually be found donning a dry suit in frigid Arctic waters observing responses of male narwhal tusks to various solutions by collecting information on their brain activity and heart rate.



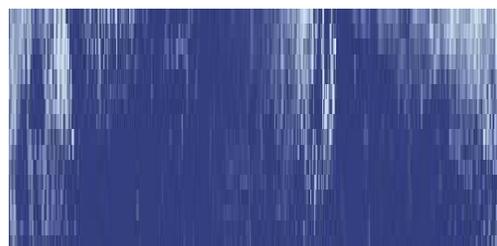
"I'm a curious kid with a driving passion to solve this mystery of nature's most extraordinary tooth," comments Nweeia. With over 500 years of speculation and interest, the science community continues to question this unique tooth organ

system. Now, a dentist motivated by curiosity is

submerged in a ten-year investigation that is beginning to unravel the answer to this biologic question.

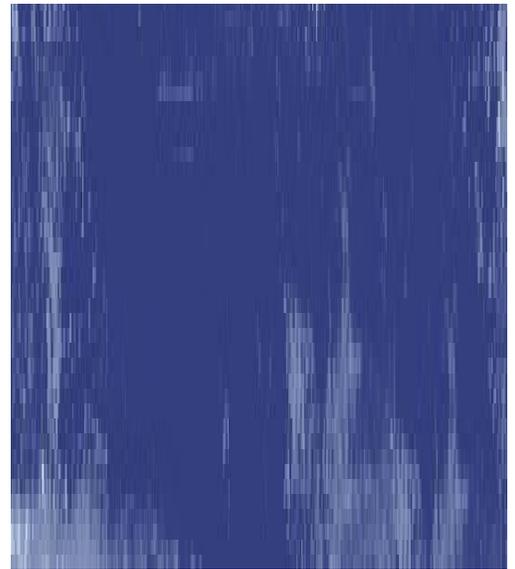
Mike Frömel

Born in 1977 in Berlin, Germany, Graduated at the University of Potsdam in the field of German literature, medieval history and psychology; Since



summer 2008 PHD student at the University of
Potsdam with the dissertation topic "Travel
literature, colonial discourse and German
accounts of journeys to the polar regions 1770-
1818"

- Topic of the Polar Oceans-Event, 19 March
2009: „Polar explorers visiting the Inuits - focused
on old travel literature“



About IPY

The International Polar Year 2007-8 is a huge, exciting scientific campaign focussing on the polar regions. It is also an unprecedented opportunity to demonstrate, follow, and get involved with, cutting edge science in real-time.

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