Globetrotting scientists

Norway: Poisonous algae and water columns

The "cast off" call for the research vessel "Heincke" came in July, when we set off from Bremerhaven port for the Norwegian coast and the Trondheimsfjord and Sognefjord. In addition to the ship's crew the "we" here refers to scientists of the Institute for Chemistry and Biology of the Marine Environment (ICBM), the Alfred Wegener Institute (AWI), the Helmholtz-Zentrum Geesthacht Centre for Materials and Coastal Research (HZG) and the Norwegian Norsk Institutt for Vannforskning (NIVA). Our goal was to learn more about the formation and distribution of toxic algae blooms. The scientists on board had a full agenda to complete within the three weeks it would take to reach our port of destination, Trondheim.

Coastal areas and fjords are highly complex marine environments. Toxic or highly concentrated algal blooms form here, a process that has been observed with increasing frequency in recent decades. We studied the distribution patterns of the poisonous algae and the underlying mechanisms, in connection with light availability and nutrients as well as general topography and hydrodynamics. Building on the success of previous expeditions, we combined biological, chemical, physics and bio-optical methods to gain an interdisciplinary perspective of the system as a whole. We sampled and characterised the water column using a "rosette water sampling system" with a built-in CTD probe (conductivity, temperature, depth). On board, the composition of algae and dissolved substances in the water were analysed. In addition we measured the local underwater light fields in order to characterise the light regime available to the algae.

Thanks to good weather and calm seas we were able to perform all stations of the study according to plan. In addition to the dominant algae Ceratium we also found cells of the toxic Dinophysis norvegica. After three weeks at sea, additional laboratory tests and the combination of all the results were next on the agenda.

Daniela Voß

South Africa: Spare parts in Port Elizabeth

As a PhD candidate in the junior research group "Cascade Use" I'm fortunate because we maintain many international contacts in countries like China, Canada and Chile. And in July I travelled to South Africa, where I met old and new contacts.

The researchers of the "Cascade Use" group are studying decisions made at the end of a vehicle's life cycle in order to prolong the use of the materials it is made of as much as possible. The goal is to reduce the consumption of primary raw materials and the environmental damage this entails. Within the group I am examining the acquisition problems in "remanufacturing", or in other words how components can be repaired for reuse for example as spare parts. My trip confirmed the fact that this is an issue of interest across the globe.

In beautiful Port Elizabeth I took advantage of the opportunity to exchange views and information with carmakers at the Information Technologies in Environmental Engineering (ITEE) conference. In addition to visiting Volkswagen Group South Africa I met experts from Lumotech Ltd. Lumotech manufactures headlights for vehicles as well as other things and is able to reduce the use of primary raw materials by using recycled plastic in the production of street lamps. In this way leftover materials from the production of car parts are used to make new street lamps – a simple but resource-saving idea.

In addition to my contacts in industry I also met up with PhD student Cainos Mukandatsama of the Nelson Mandela Metropolitan University (NMMU) again (see photo). We first met in Germany at the Summer School "How Efficient is Electromobility?" at the Hanse-Wissenschaftskolleg Institute for Advanced Study (HWK) in Delmenhorst, which organised the Cascade Use group together with the PhD programme Renewable Energy at Oldenburg University last June. I am now looking forward to long-term collaborations with colleagues and partners from South Africa through my research activities.

Matthias Kalverkamp

South Africa: Big challenge for the partner uni

We had already visited South Africa before we left on sabbatical, but to travel to Port Elizabeth with the family and a project at the Nelson Mandela Metropolitan University (NMMU) was something very special. For us the long-term partnership between Oldenburg University and the NMMU was an opportunity to spend time abroad.

Both the guest university NMMU and the University of Johannesburg (UJ) were created by merging once white-dominated research universities with the more vocational Technikons and institutions of the once all-black Vista University. This type of university differs from the "formerly advantaged universities" of Stellenbosch, Witwatersrand and the University of Cape Town (UCT) not only as a result of integrating different institutions but because the students there mostly have poor school educations. All South African universities are called upon to play an active role in society and to act as motors of regional development – a task which presents an exceptional challenge for the NMMU, located in one of South Africa's poorest provinces with 36 percent unemployment (2011). This made the professionalism of the research institutes at the University – in particular those in the natural sciences – which took me on as visiting professor all the more impressive. And the strategy development and implementation throughout the university in areas of social engagement in townships, sustainability and diversity management is also remarkable.

During our stay the final workshops of the Clim-A-Net project (www.clima-net.uni-oldenburg.de) and the DASIK project (www.dasik.org) took place, as did the opening event of the East and South African-German Centre of Excellence in Educational Research Methodologies and Management (CERM-ESA; www.mu.ac.ke/cermesa). What is interesting about these projects for the South Africans is above all the development and implementation of interdisciplinary structures and working methods in Oldenburg and the wide-ranging experience in teacher training, business informatics, renewable energies and sustainability research.

Prof. Dr. Bernd Siebenhüner

Saudi Arabia: Fitting in prayers

After giving a keynote at a conference in Brazil the director of the Department of Educational Computing and Online Learning at the King Saud University asked me whether I would like to come to his university in Riyadh as a visiting scholar.

Aside from the difficult situation for women in Saudi Arabia, the story of blogger Raif Badawi was all over the news at that time, after he was condemned to 1000 lashes for his blog posts criticising strict interpretations of Islam. But I decided to take up the invitation in spite of all this in order to experience Saudi Arabia first hand. It's not so easy to travel around the country as it does not issue tourist visas.

So I spent two weeks in Riyadh during which I gave a workshop for fellow scientists (men only at Kind Saud University!) who want to integrate digital media into their teaching. The path to becoming a professor is obviously highly selective and heavily influenced by the American system. All colleagues in the department attained their PhDs in the US on full scholarships from the Saudi state. Scheduling the workshop proved tricky because the participants needed to fit in their prayer times.

I also gave a keynote at the International Conference on E-Learning and Distance Education organised by the Saudi Ministry for Higher Education. It is incredible how much money is being invested in digitising university teaching. By our standards, utterly unthinkable. The conference took place in a luxury hotel the likes of which I will probably never set foot in ever again.

The segregation of men and women can become quite ludicrous at times. Questions about my talk from women scientists were relayed from the "female section" of the conference hall. One colleague from Canada told me that he had given a workshop for female professors, but he was not allowed to be in the same room with them and had to sit in front of a video camera next door. He might as well have stayed in Canada doing a video-conference.

All in all, my trip to Saudi Arabia was definitely a unique experience. Even if we do spend a lot of time complaining about the university system here we should consider ourselves very lucky that we are allowed to work freely as scientists in Germany.

Prof. Dr. Olaf Zawacki-Richter

Iceland: Absolutely fascinating

Several hundred kilometres in a car on streets whose names no German could pronounce, many pleasant encounters and incredible landscapes everywhere you look. I travelled to Iceland for research; I returned captivated by its landscape and the openness of its people.

What I was actually doing was collecting marine sediments for my DFG-financed research on globally distributed microbial populations. The aim of the project is to collect data on the molecular diversity of cyanobacteria in the North Sea tidal flats and to compare these with their distribution in ecologically similar but geographically distant locations. "Is everything everywhere and nature selects?" This question was posed by Martinus Willem Beijerinck (1851-1931), a Dutch microbiologist in the 19th century. Until now marine benthic cyanobacteria had not been found in arctic regions.

Iceland has a strong influence on its inhabitants. Appearances are not overrated and yet everyone has their own style. Icelanders attach great importance to being able to make their own decisions. This is particularly noticeable even when it comes to tourist attractions. Natural wonders are not, as they are in Germany, plastered with warning signs. For example, at the entrance to hot springs there is a sign simply stating: Water temperatures may reach 100°C. And it is left to the individual to decide whether to dip in a finger to see if the water really is that hot.

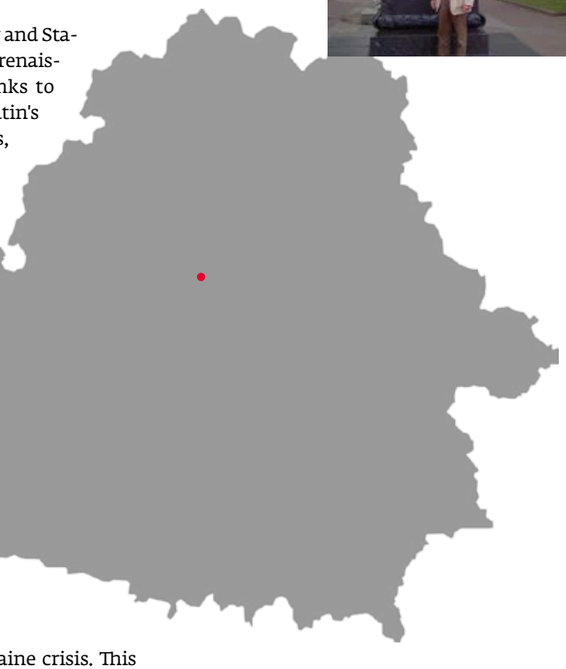
And cyanobacteria? In my samples, analysed by PhD student Janina Vogt, there were Cyanobacteria clearly present! So my trip was not only an amazing experience but also a big success.

PD Dr. Katarzyna Palinska

Quo Vadis, Belarus?

It is due to be re-erected in front of the infamous Lubyanka, the KGB headquarters in Moscow; in Minsk it is still standing today. I refer to the monument to Felix Dzerzhinsky, the founder of the Cheka, or Soviet secret police, who was born in Belarus to aristocratic Polish parentage. "Iron Felix", who organised the Red Terror in the early Soviet times, and myself are looking at the KGB headquarters in the centre of Minsk - Belarus retained the Soviet abbreviation KGB (in Russia it is now called the FSB). The photo was taken on my last research trip to study the linguistic situation in Belarus and Ukraine.

While Dzerzhinsky and Stalin are undergoing a renaissance in Russia thanks to former KGB officer Putin's traditionalist politics, the West hopes that the 'Minsk Protocol' will prevent any further escalation of the Ukraine crisis. This is an opportunity for the Belarusian President Lukashenko to present himself as a mediator between Russia and Ukraine, and the West.



Lukashenko, whose country is economically dependent on Russia, has famously refused to adopt a clearly pro-Russian stance in the Ukraine conflict, stating instead: "... Everyone must respect our sovereignty and our independence. This must be remembered. And we will not cede our territory to anyone."

The Kremlin justified its actions in both the annexation of Crimea and the Donbass conflict saying that it was acting in the interests of the Russians, or Russian-speakers, who were supposedly either under threat or being persecuted in Ukraine. Although the Russian minority constitutes just 8 percent of the Belarusian population (considerably less than in Crimea or Donbass), three-quarters of that population speaks Russian! Is Lukashenko worried that veteran "Chekists" might also "find" reasons to invade his country as well?

Prof. Dr. Gerd Hentschel