



**MASTER PROGRAM**  
for applied polar and marine sciences



Bundesministerium  
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**[POMOR-NEWSLETTER]**

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# POMOR-Newsletter

Master Program for Applied Polar and Marine Sciences  
at Saint Petersburg State University

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## Editorial

After a long summer break we are back again. Our students have finished their second semester at POMOR and afterwards the summer practice where they tried themselves in being real scientists. The area on the map covered by them this summer is large: Spitsbergen, Laptev sea, Bremerhaven, Kiel, Rostock, St. Petersburg, Moscow and so on. They have got unique experience seeing with their own eyes things and places they knew only from their teachers and from the books; they also visited leading institutions and companies for polar and marine research. Full of impressions some of them had to jump out of the frying pan into the fire: as soon as their practice had finished they had to go to POMOR partner universities in Germany to continue their education there. To spend one or more semesters abroad is a great thing and at the same time a challenge (like actually many moments in the life of a future polar researcher): you get acquainted with a new education system, absolutely different from one you know, you have to adapt to a new university environment, to a new life style in another country, to learn a new language and of course – the most important thing – a new culture or many new cultures. When I had my first long internship in Germany, in a small conservative and old-fashioned town in North Rhine-Westphalia at a young university, I was really surprised how many international students from all over the world there were. I met young people from Australia, USA, Canada, Ireland, England, France, Spain, Finland, Sweden, Poland, Denmark, Zimbabwe and other countries. It was such great fun to learn things from them, to learn more about their cultures and traditions. I made so many internatio-



nal friends as never before.

We explored Germany sharing the Schönes-Wochenend-Ticket, cooked together eatable and not very eatable dishes, celebrated all possible occasions, sang Christmas songs in all known languages on the Christmas market with the help of lots of Glühwein, got reminders from the dormitory administration about not sorting of recyclable waste and complaints about being noisy; we learned together for exams, cried saying good-bye to friends, missed our friends and families at home. We still keep in touch with some of them. OK, maybe it's a bit exaggerated, but I still have my diaries and their wishes for me. Sometimes I meet someone somewhere by chance. It was a great time. Learning so many new things I became a different person. I wish our POMORs to enjoy this chance, not to lose precious time for nothing and to make the best out of this internship. In this issue we present their first impressions of being researcher and a kind of German student.

Nadezda Kakhro

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## FACES

Professor Karin Lochte – Director of the Alfred Wegener Institute for Polar and Marine Research, biologist, Member of the Academy of Sciences in Hamburg, member of many national and international committees.

NK: In your career you have achieved staggering heights by being the first woman in Germany leading a big research institute. What was your encouragement for the start and further development of your career?

KL: The most important encouragement was my interest in the ocean and in science. There are so many exciting questions in the marine sciences, and I was always eager to carry on finding answers. The second encouragement was that I wanted to show that it is possible for a woman to lead an institution. It was quite a challenge to start doing something in a purely male dominated field. And it worked out for me. So I carried on.

NK: You studied both natural sciences and the humanities. Why did you finally choose biology?

KL: The humanities – philosophy – were just a subsidiary subject for me. I was very interested in biology because I wanted to do marine sciences. I started off to study with the intent to become a teacher and later decided to turn to science. Within science marine biology interested me most. I was really fascinated by the marvelous view of planktonic organisms under a microscope. It really was a rather esthetical or emotional feeling. I wondered how much microscopic life exists in the ocean and how essential its role is for its function.

NK: They say natural scientists are sometimes cynical: they explain the world by established theories and proved assumptions. Are you thinking along this path or do you believe in wonders?

KL: (Laughing). I don't believe in wonders, I believe, that we still have not understood everything and there are a lot of things which will surprise us. We still don't have theories about

everything, we still can't explain everything, in this respect I believe in the human boundedness. We think indeed, that we know everything, but we really don't.

NK: What do you think of area-wide popularization of science?

KL: I think highly of the fact that people widen their comprehension of the world generally, of the ocean, of our activities on land. Because of farming we have changed the land completely. These are crucial and thrilling questions for society and I think it is very important to carry science into society. There were times when science was seen in a critical way. People said that scientists invented new things which could be dangerous for us. I hope it has changed a bit.



*„A modern scientist has to be broad-minded and to come up with a particularly strong scientific performance. He or she also has to know how to convey to society what he or she is doing - this means to be aware of his social responsibility”*

It means that on the one hand people understand what is going on in science and how science works, and on the other hand science has to make clear the point that not everything possible is useful. For instance, genetically manipulated organisms, plants and animals. What makes sense, what doesn't? What can we do? What shouldn't we do even if science has shown that it is possible? These discussions are very important.

NK: Professors often say that they stock up on positive energy being with students. Where do you charge up your energy? Do you still have time to lecture?

KL: That's right, working with students is always fun. You get inspired; you enjoy

creating something new with students. It's a very positive aspect of life. Where do I charge up my energy? I'm still lecturing, but not so much. I'd like to keep giving lectures. Whenever I can I try to talk to young people, students, young scientist or pupils. It's much more positive than the other work I have to do.

NK: You have got a very busy timetable. How do you manage your timing? Do you still have time to see friends or to pursue your hobbies?

KL: It has become less. But you never should give it up completely. If you stop having hobbies or seeing your family and friends because of your work, your life becomes very one-sided, and you lose fun in life. I try to pursue my hobbies and to meet my friends whenever it's possible, sometimes really at short notice. There are also hobbies you can do in between, at the weekend. I do it this way. I have a very beautiful garden, and I enjoy working there.

NK: During your studies at the university you had long internships abroad. Why do you think the international student exchange and the internalization of educational and research institutions gain more and more in importance?

KL: Science is international. Especially marine and polar sciences are an international area. This means you have to know your partners abroad, you have to speak at least English fluently, but better one more foreign language, and you have to be informed about what's going on in other countries. This is easier if you have worked with partners abroad. Being abroad you learn that science is organized in a different way in other countries, that is also very important. There are many ways to do research, and you'd better learn this; not to be cramped in your own perception. Everybody who has spent a while ►

abroad (and a while means longer than a month), benefits from this experience and has learned many things for their own research. That's why I only can recommend it to students.

**NK:** The AWI supports young scientist very actively. What do you expect from young academics?

**KL:** I hope that the young scientists educated by us are no nerds, that they can see the world beyond their own nose and that they know how their research correlates with other fields of science. That a biologist can speak with a physical oceanographer and that they are aware of the fact that their research is relevant to our society. We are working not only to find out how many legs a copepod

has. We are working to find out what the ocean means to mankind, how we can use and protect it. This second point of view is really significant. Another thing is that the young scientists need very good scientific skills and tools to survive in the hard competition. We try to teach this our young scientists. This means we would like to get scientists who are good in science and who are aware of their social responsibility.

**NK:** What is the formula for success for a scientist nowadays?

**KL:** A modern scientist has to consider the points I mentioned concerning young academics. He or she has to be broad-minded. He also has to be a good manager; I mean he has to know how to convey to society what he is doing. Society has to understand why his research work is important. Without doubt he has also to come up with a particularly strong

scientific performance appreciated nationally and on the international level. By accomplishing these three factors you'll have a very good foundation to be a successful scientist.

**NK:** The POMOR-students have started their studies in Germany in October. What piece of advice would you give them for life?

**KL:** I wish them to learn at the new university as much as possible, to keep eyes and ears open, to speak to many different people and to ask questions. Have fun, make friends who will accompany you in the future and build a real network in Germany!

**NK:** Thank you very much!

## POMORS AT THE AWI by Alexandra Filippova

In September three POMOR students (Nastasya Ledneva, Mikhail Mednik and me) began their practice at the AWI in Bremerhaven. Investigations of the fundamentals of paleoclimatic analyses were the main goal of our practice.

Detailed study of the cores, collected in the different parts of the Earth during the expeditions, allows modern scientists to get new information about the past climate. Working in the laboratory under our mentoring Professor Dr. Rainer Gersonde, we had a chance to go through all kinds of sample preparation: from freezing, drying and weighting till the smear slide preparation for further microscopic investigation. Our participation in the process of laboratory analyses showed us how time-consuming, accurate and laborious this work can be, demanding grit and attention. But the most exciting part of our practice was the direct work with the sediment cores, which were taken during the ANT-XXVI/2 expedition by the Polarstern in the Southern Pacific Ocean in the area of the Eltanin asteroid impact.



*The cores*



*Paleomagnetic samples*

Our main responsibility was the sampling of the cores for further paleomagnetic and water content analyses. Moreover we had a chance to see how the cores were opened and checked out the methodology of the core color description. One day we also had to visit one of the AWI storehouses in the harbour, where all the samples and cores were kept.

In the breaks between work we enjoyed the gorgeous view of the whole city from the roof of the Alfred Wegener Institute. We filled our weekends with activities. Visits to Bremerhaven museums didn't leave us insensible. The Klimahaus on its own, simulating a travel adventure along the 8th line of longitude, is worth a visit. The Deutsches Schifffahrtsmuseum with numerous ships and yachts, from different times and places, breathtaking stories about sea battles and shipwrecks, all of these you could find out there. For the wild life devotee there is a Zoo in the center of the city near the sea side. Multilevel cages give you an opportunity to survey the wild life from different levels and angles. No one will be left uninterested, no matter if you are an adult or a child. Whether you are a tourist or a scientist in Bremerhaven everyone can find something, what will make his stay in this city unforgettable.

We would like to thank the AWI and Professor Gersonde and his team for this unique opportunity. And a special thank to Evgenia Bazhenova from POMOR III for her overall support.

## A TRIP TO SVALBARD by Ekaterina Ivanova and Nadya Rumyantseva

When we went out from the Svalbard airport it was midnight and the sun was shining. The first thing we saw in front of the airport was a tent camp and beautiful cold deserts. On the right was a road to Longyearbyen, a small Norwegian town, the administrative centre of Svalbard. The leaders of our expedition from the Russian Geographical Society met us near the tent camp, and then we boarded the boat to Barentsburg. The sea was rough, but our inflatable light boat skimmed the water surface very easily. 2 hours later we reached our destination. Barentsburg is the second largest settlement in Svalbard with about 500 inhabitants, who are mainly working for the Russian-owned company Arcticugol and Russian scientists. We stayed in the single hotel in Barentsburg and started to prepare for the field work.

The Russian Geographical Society gave us the following task: To lay new routes at the Isfiord region, West Svalbard for further developing of «scientific tourism» in this region. Scientific tourism is a kind of tourism when people not only do sightseeing, but also get scientific information. In Barentsburg we collected data about abandoned coast-dwellers villages in the Isfiord region. The main part of the data was found in Barentsburg library. The director and historians of Barentsburg Polar Museum also provided us with very useful data.

The Barentsburg Polar Museum is the most northern museum. It is really wonderful. We didn't expect to find something like this here. There are collections of geological samples and a big collection of wild life, in particularly all main Svalbard birds.

Furthermore, there is very interesting archeological collection in Barentsburg. We saw different traces of ancient pomors in the region, their items of household use, and also unique items: a wooden calendar and famous Pomor chess.

After two productive days in Barentsburg we left civilization and started our fascinating research of East and West coasted of the Isfiord.

The main part of our scientific work was connected with meteorological measurements. We made a series of measurements to continue the current weather sequence. We also took part in research work done by the meteorological group of the Arctic and Antarctic Research Institute. We studied the microclimate of Aldegonda glacier, Green Fjord by measuring the intensity of the solar radiation, the total solar radiation, reflected solar radiation and spectral albedo of the underlying surface. It was a very useful experience.

Svalbard nature is something really fantastic. I haven't breathed such clean air before. There is an absolute silence in tundra. At home we get used to hear such sounds as palpitation of leaves, noises of insects. There are no such sounds in Svalbard, only the roaring of the wind. It is interesting that there are no harmful mushrooms in Svalbard. All kinds of mushrooms could be eaten. The first day when scientists offered us something that looked like a toadstool, we said: « No, thanks!». But another day we risked and

tasted it. It was really delicious.

Svalbard is one of the few places where we can meet areas with virgin nature. It is really an incomparable feeling when you sit down in a small wooden house in the tundra far from civilization and stand in awe of an ice bear.

It was also very interesting to talk with scientists, who work there. Svalbard offers wide opportunities for research work in many different spheres of science.

Svalbard is a place where all things are not the same as in everyday life. It is a place where nature is more important than man and nature determines all life there. It is the place where if you have been once, you dream to come back again and we have a strong intension to do it.



*The camp*



*Barentsburg*



*Pomor chess*



*Wild life*

## HELLO FROM KLEINER KIEL! by Ekaterina Kaparulina and Anastasia Zhuravleva

"Kiel is the capital city of the German state of Schleswig-Holstein and has a population of roughly 240,000. It is located at the Baltic Sea at the end of the "Kieler Förde". Kiel is approximately 90 kilometers (56 mi) north of Hamburg. Due to its geographic location in the north of Germany, the southeast of the Jutland peninsula, and the southwestern shore of the Baltic Sea, Kiel has become one of the main maritime centers of Germany. For instance, the city is known for a variety of international sailing events, including the annual Kiel Week, which is the biggest sailing event in the world,"- the Wikipedia says about this city, but we'll tell you about our Kiel, about the city, which we've known for three weeks.

After the first year of our studying at POMOR for a long time we could not determine the place for our summer practice, but one fine day we received the offer from the IFM-GEOMAR for two students to pass their practice there. We immediately agreed to this proposal, and we are now working under the supervision of Dr. Henning Bauch. We really like our job and we never regretted our decision. Mainly our work at IFM-GEOMAR is related to the preparation of core samples for further analysis. Dr. Bauch teaches us all stages of sampling, from a sampling of cores and ending with the interpretation of graphs and charts, obtained after the analysis of samples. Recently, most of the work is connected with the picking of foraminifera from the samples for oxygen isotope analysis (Evgeniya Kandiano helped us to deal with it) and counting of ice rafted debris in the samples from the North Atlantic. We are very pleased to work with Dr. Bauch, he is a very kind and cheerful man, who is always ready to support us. Also, a friendly atmosphere at the IFM-GEOMAR facilitates the successful passing of our practice; we want to thank all members of this institute for the warm attitude towards us.

We've been living and working in Kiel since the 5th of September, which is a very quiet town where almost every inhabitant more or less is connected with the sea, he either has waterfowl resources, be it yacht or simple canoe, or he just prefers a ferryboat instead of buses and cars. Perhaps, Kiel is impossible to compare with any famous cities known to us, it has its charm, but at the same time Kiel has a capricious character. Take, for example, weather. Unpredictable rain and wind can change to sun in the sky in an instant. It can be said about local people that they can take a shower twice a day – in the morning on the way to work and in the evening, not spending their time on it at home. Moreover, we noticed that the good weather on Fridays also has a "shorter working day", so you should not stay on the job, because the rain this day does not start at 7 pm, as usual, but it starts earlier at 5 pm. However, if you are lucky with the sun and wind, an amazing sight will be in the evening before your eyes - a lot of yachts with white sails, gliding through the fjord. The city is divided by the Kiel fjord and Schwentine river into 2 parts: the western part and eastern. We take the ferryboat to get to the IFM-GEOMAR,

feeling ourselves closer to the sea. In addition, on Fridays at the shore of Schwentine river near the IFM-GEOMAR the fish market is held, where you can buy fresh seafood, as well as soak up their smell. It can be possible to try the gifts of the Baltic Sea and other dishes in many cafes nestled on the shores of the bay.

Walking around the city, you can often meet people from different nationalities, including Russian - tourists or already local residents who like this place. To our delight, the indigenous inhabitants of Kiel are very sympathetic people who are always ready to offer help, and we practically do not have difficulties with the ignorance of the German language, since many of them speak English. In the nearest future we're planning to engage seriously in the study of German, our new German friends from campus play a considerable role in this. In the evenings, gathering international company, we prepare Russian national food (German friends relished Russian pancakes and dumplings), play games and we talk on various topics, including breaking down existing stereotypes about Russia.



*At the Schwentine river in front of the IFM-GEOMAR, East shore*



*Preparation of samples*



*Sieving of samples*

## MY LIFE AND ADVENTURES IN GERMANY by Dmitri Tsvetkov

It's been almost two months since my internship in the working group of Rostock University began. One of the oldest universities in Europe, by the way. Every day, 8 to 18 I put all my efforts in grasping what is called coastal engineering. Particularly, my task here is to develop an approach to calculate probabilities of failure of dunes. Sounds discouraging, huh? In fact, it is really interesting! Just imagine, there are dunes on many coastal areas of the world. These are naturally built (and in many cases artificially maintained) sand bodies along beaches serving as a natural protection against flooding. Surely, you have seen them if you ever visited sand beaches. It's a pity, but they are not everlasting, sometimes they collapse after severe storms expose the area beneath them to be inundated, that causes danger to people and their property. In order to be prepared and to prevent unwanted events one needs to be aware of the rate of possible failure of any structure, including dunes. The main mechanism causing dune failure is erosion by waves. Recognizing all physical aspects of the phenomena and using numerical models, it is possible to estimate probability of failure of a dune. Dutch engineers are experts in this topic because large part of their country lies below sea level and they really rely on their flood defences. Well, that is briefly in what I am involved here. I work in a group of ten nice people of different age. I share the room with Doerte, she deals with extreme value analysis, and Norman, his duty is programming. Both young, both enthusiastic. You know, watching them working hard every day I think I understand the reasons beyond wealth of Germany and other European countries. Doerte has helped me a lot to adapt myself in Germany. Steffi sits in the opposite room. She is also very young. She always looks happy like a child. The room just next to her is occupied by Frank. Frank is one of those whom people call an old mate, you can rely on him. In his thirties he has a doctor degree. In the room adjacent with mine sit Angelika and Christian. Angelika looks like a serious woman, but you can easily make her laugh. Christian is a walking encyclopedia and just a nice guy whom you can see always smiling. Then there is Ulrich, he is doing his PhD. If you only saw the device he invented to count sediment transport! The good thing is that he also doesn't consume flesh like me. At the end of the corridor sits Joerg. He was the first person I met in Rostock. He looks wistful, but he is a very kind man who is always ready to help you. Then there's Christina's room. She is a secretary. Christina is a careful and good-natured woman. The second adjacent room to mine is occupied by Peter. Well, we all know Peter! He is full of duties and loves his work a lot. I am sure they all enjoy their work. It's almost 2 months since a ferry from Helsinki carried me to Rostock. As I told you before Joerg was the first whom I met here – he was waiting for me at the harbor holding a board with my name written on it. Shortly after I've landed he took me to a dormitory where a room was booked for me. It was almost midnight when we reached the place and I could hardly see any of my neighbors though it was Friday night.

Later I met them, and all of them came from India to study programming here. By the way, one day when two Indian guys and I were cooking in the kitchen, they had a conversation and suddenly a question came into my head. I asked them "Why do you speak on English with each other?". Guess what was the answer? In India they speak more than a dozen different languages depending on the state where one lives, and all of them are official languages of India along with English. A person from one state cannot understand a person from another if they speak their native languages. I didn't know that! Did you? Oh, India, I hope I'll see you soon... And yeah, going back to Rostock. As I told you it was Friday, that means that Saturday follows, nevertheless we meet with Joerg at the small building in the city center where he and his colleagues work in order to give me a bike, which they keep for their guests. Lucky me! For me it was a real grief to leave my bike in St Petersburg and now I am happy to ride another one!

A bike is a common transport in Western Europe – everyone rides a bike here, even retired persons. Along every road there are bicycle lanes, usually it's a half of pedestrian area. You can see parking slots for bikes everywhere – at houses, at shops and offices, at hospitals and restaurants. Everywhere! Could I go without a bike in such circumstances? I would rather not go at all :) Moreover, the dormitory is situated 10 kilometers from the office. Surely, it's easy to go by local train



*A dune foot covered with vegetation*



*"Dunes serve for coastal protection"*

(U-Bahn) or tram or bus or wherever you wish to go, but I prefer using the strength of my legs.

Now you see how lucky I am to have a bike here. The whole day I was riding my bike across Rostock. Rostock is not big; you can walk through it within a couple of hours. Nearly 200.000 people live here. How pleased am I to have a rest from the multimillion city. If you prefer a calm life that's what you can live here: nice small houses, old mysterious churches, quiet streets, a lot of trees and parks, a wide variety of birds and animals (bats!), a turquoise sea and the main thing – friendly people. Actually, even here you can hear loud shouting, usually on weekends. Don't be confused, it's just a local football team, Hansa, plays at a stadium. When I was walking... ehm... riding along the streets of the old town – if you could only see them! – I noticed one thing: there were windows with curtains, windowsills with flowerpots on them, satellite dishes – all that evidence that people live in this building. And that building was a big-big church. There was even a solar panel on its roof! I've never seen churches being inhabited before. My new German friend told me that some churches allow people to live in them or hold performances inside of them (of course not for Satan worshipping bands like Kiss :)). Rostock as probably any German town is full of vegetation – trees, bushes and lawns you can see on almost every street. Some species you can rarely find in North-Western Russia or can't find at all. Hazel, for example. Old hazel trees grow all along the street on which I'm currently living, sharing an apartment with Doerte, my colleague, and Kai. It is fruiting time for hazels now, so the street is full of hazelnuts. Kai complains he can't sleep when they fall down on car roofs at the nighttime. There was a day, a Sunday, my first Sunday in Rostock, when I discovered that no shops open on Sunday, and blackberries made a huge part of my diet. They grow all around Rostock and you can easily pick them whenever you wish to. And that's what I was doing every day on my way back home until the season ended. Plum trees and apple trees are also widely spread here and surely, I do not miss a chance to eat their fruits. Wish it was the same in St Petersburg! Together with my colleagues we went on an excursion to the port of Hamburg at the beginning of September. They have some deals with the local port authorities, which invited us to tell us about their recent development and plans for the future. After an interesting presentation in the office, all of us took a boat trip on the Elbe river through the harbour. As they told us, the port is one of the largest in the world and the second largest in Europe after Rotterdam's. No doubts: it is really huge, I would say immense! We were riding for three hours on a boat and still haven't seen it completely. However, we have visited the most noticeable spots and witnessed such big ships as I had never seen in my life before. They were loaded with thousands of containers of different colours with thousands tons of goods from all around the world. We have seen massive cranes and other facilities to service ships. Also there are many sail-boats and yachts parked around the docks. The port and everything inside of it impresses, but Hamburg itself impressed me much more, regardless to its size. Hamburg is one the most beautiful cities I've visited. It



*My colleagues and Hans*



*A view from my dormitory room*



*My bike at the dune slope*



*A typical street in Rostock*



*The inhabited church*



*Blackberries*



*Moored container ship*



*Modern architecture of Hamburg*

is a city of vintage brick houses, old warehouses and gothic cathedrals and superb modern architecture; it is the city of hundreds canals (just like Venice or Amsterdam) and a countless amount of bridges across them; the city where old traditions and culture meet contemporary art and progressive technologies. The multinational city of contrasts you can't stand to fall in love with! I regret so much I was limited in my time to see it, so I could only observe a part of it. Nevertheless, it was just a first time for me. Looking forward to meeting my friends in Hamburg who will study there. I could have spent much more time in Hamburg if I hadn't made an appointment for that day. I had to visit Bremen where I will study in the next term to have a look at a room which I've found at [www.wg-gesucht.de](http://www.wg-gesucht.de) among many other ads and to meet my new roommates (actually there are roommates who want to meet you before you start sharing a flat with them). Can't tell you a lot about Bremen as I've been there for only one hour or a bit more, the thing I want to tell you is an extremely useful site [www.mitfahrgelegenheit.de](http://www.mitfahrgelegenheit.de) Drivers from all over Germany put up their offerings to lift on this site saying about routes they plan, dates, a number of free places in their cars and a price for the trip. Travelling this way is far less expensive than travelling by trains or buses and can be far more interesting if you are lucky with your fellow-traveller. One can find offerings to share train tickets as well: you can share a ticket for group of 5 people valid for unlimited railroad travelling within a certain land (Bavaria, for example) for nearly 25 Euros; there is another possibility to travel within the whole of Germany for some higher price but only during weekends. And that was the way I reached Bremen – by train with four nice girls - and went back to Rostock by car with a handsome man whose name was Christoph. He didn't speak English at all and thank to his girlfriend, Heike, who directed me by phone I could find him in Bremen. In spite of the language barrier, we had an interesting conversation on our way to Rostock where he was going to visit Heike. On the next day I discovered my camera was missing, promptly I remembered that I left it on the backseat of Christoph's car when I showed him pictures I had made. I gave a call to Heike to find out when we could meet so that I take my camera back. What a surprise it was for me to know that she is a friend of Joerg (remember him?) and she will pass my camera to him. It's almost two months since I've been living live in Germany, and it doesn't stop surprising me! Today, when I was going back home after my working day and doing some sports in local gym I saw something rapidly moving in the air just a few meters in front of me. No sounds, only "something" fast moving in different directions. Due to twilight it was not easy to distinguish the matter, but one second was enough, less than one second after it flew in the light of street lamp I realized, it was... a bird?... no... a moth?... no... A BAT! It was a bat! I though they only exist in animal documentaries. Well, OK, I did not, but I never expected to see it in my life, and then it was there, a few steps in front of me. And I was not even in the country side, but in the city of Rostock. Woa!

## ARCTIC ADVENTURES by Sofya Antonova, Igor Ivanoshchuk, Irina Kryukova, Alexandra Loginova, Valeria Selyuzhenok, Julia Tropina and Oleg Zhaden

Do you know what the most attractive part of studying at the faculty for geography is? The main point is that everything you learn in the lectures during the semester can become reality during the field practice. Terms from books materialize and maps enlarge to natural scale. Your experience cannot be compared with what you imagine sitting in the lecture hall. During the first year at POMOR we have heard about the Laptev Sea, other Arctic seas and different polar expeditions so many times that the possibility of find ourselves there, taking part in such an expedition, became a dream for all of us. Luckily, dreams have the property to come true sometimes. Here we are: neither the exhausting flight from Saint-Petersburg via Yakutsk to Tiksi – some of us started even from Hamburg – nor the prolonged stay in Tiksi broke our fighting mood. As soon as the port vanished from the horizon, scientific work started with furious speed. Having seen the tireless activity of chemists nervously moving around the rosette; crew called it “sorcery”. If you ever have watched films about witches or alchemists you can easily picture the day and night ceremonies carried out by our chemical group. For sure, you can't image chemists without the laboratory and a bouquet of amazing fragrances. The lab was set up quickly: a scratched table, an old chair and a couple of plump bottles. But the “unforgettable” chemical atmosphere was concentrated in just one box which was hidden far away from the nosy non-enlighten. Then, the picture was completed with an infinite amount of different shaped and sized bottles and pots. Our “magic” began by carefully arranging the bottles in special drawers. The larger containers dedicated to SPM (suspended particular matter), Chlorophyll  $\alpha$  and CDOM (chromatic dissolved organic matter) were comfortably sitting in a bigger box. The tiny ones for dissolved oxygen,  $\Delta^{18}\text{O}$  and biogenic elements' samples were tightened up in another cozy box. After arriving at each station, we balanced our box with sample bottles over deck to the rosette. The procession was lead by the daughters of Eve; occasionally they were disturbed by Yellow-XXXL-Trouser-Man, also known as “Carlson from the roof”.



As soon as the oceanographers gave the green light the rosette was attacked. The plan was always the same: while the bigger bottles were waiting peacefully aside, the army of smaller bottles assaulted. For a distant observer the most spectacular moment might have been the dissolved oxygen sampling. By using some reagents, chemists turned pure seawater into something like orange juice with slowly sinking flakes. From time to time the well coordinated work was disturbed by some upsetting things such as leaking bathometers, unpleasant weather conditions or the crane having its own will about working hours. As soon as the last bottle was closed, the procession retreated and hurried to the laboratory one deck upstairs. While the chlorophyll samples were filtrated accompanied by the noising vacuum pump and while the dissolved oxygen samples were titrated the other samples were frozen and packed for the further analyses on land. After everything was accomplished, the bottles were safely sorted in their boxes; life in the lab came to a standstill, waiting for the next station. In this way station followed station and days passed. Nightfall told us about the end of the first act.

After a short-term dinner the second part started which was no less exciting: That was what they called the night shift. 8 p.m. - the beginning of the night shift. The night shift's work process was absolutely identical to the day one beside some amazing peculiarities: You could muse on the stars flashing in a water samples or grab benthos from admiring darkness of the ocean. You could catch the rising sun in a plankton net. The night was so dark and you could recognize your mates only by bright yellow overalls. The long waiting time for the next station was smoothed by a snack or some movie. Time went very fast and only the cheerful “Good morning” from day shift made you realize one more night has passed!►



While the chemical work went on round the clock, the mooring team had a very spontaneous schedule. Every mooring was a long-awaited event for us! Approximately a day before deployment, we met to look through mooring design and to discuss the upcoming work. And at once we slipped into measured life from station to station. Instruments from the load, ropes, batteries and shackles – all this stuff was moved around the ship and eventually collected in the lab. Then came a short slackening period – the programming part. And again transporting all the instruments to the deck, where they were fastened together and converted into a seafloor observatory. The crucial moment of deployment most often happened to be late at night. Despite of this fact, almost everyone went out to the deck to watch how the observatory is going deep into the ocean to dwell there for a year.

Recoveries of the moorings were not less spectacular. Triangulation to find the exact position of the observatory, release from the anchor and immediately everyone turned their eyes to the sea to find a small yellow spot – the buoy. According to experienced members of the team, recovery of the mooring you deployed is a very impressive and cheerful moment. I hope, that I will experience it :). After recovery the actions started to run in reverse direction. The instruments were unfixed, cleaned and carried inside. Once more the common laboratory-life was disturbed: sharp smell of periphyton Bryozoas, settled on the instruments during the year penetrated into the lab. Eventually, after uploading the measured data instruments were put in their places where they were waited for a new deployment.

Ira Semeryuk's comment: I do not see the end of expedition yet but I am already full of positive emotions. It was my first field practice and I can say for sure it is an experience of a lifetime. By all means you can find some negative moments everywhere but do not do so. I think this expedition was a good possibility to collect data for our master theses, to meet interesting people, to make new friends, to get to know something new about your mates and to discover amazing and beautiful places of Russian North.



# EL'GYGYTGYN- MORE THAN AN UNPRONOUNCEABLE NAME

by Julia Gottschalk (Master Student of Marine Geosciences at the University of Bremen, Germany)

"7 am - get up, put on polar clothes; 7.15 am - several quick spoons of *каша-малаша* (something like porridge; typical breakfast dish in Russia); 7.30 am - shaking bus ride over snowdrifts across El'gygytyn to the drilling platform; 8 am - shift change, start of work on drilling platform; 12.30 pm - lunchtime; 8 pm - shift change, end of work, bus ride back to camp; 8.30 pm - dinner (*капуста с мясом и рисом или макароны* - cabbage with meat and rice or noodles); 9 pm - *баня* (banya - steam bath, Russian kind of sauna), get together in the office, phone my family, check emails; 11 pm - go to bed; and again 7 am - ...

That describes my daily routine during 6 weeks in the spring of 2009, which has been rather monotonous but the greatest experience of my life. I had a unique opportunity to take part in an expedition of the International Continental Drilling Program (ICDP) at the far northeastern Siberian lake El'gygytyn on the Chukchi Peninsula (Fig. 1) thanks to Heidi Kassens who established the contact between her colleagues from the University of Cologne and me. The expedition took me to the very remote northeastern part of Siberia, near the city Pevek. I have never been so far from home as this time.

The lake depression of El'gygytyn was formed by a meteorite impact 3.6 million years before present. Scientists believe that it never became glaciated or desiccated. This makes it the most valuable sediment archive of Arctic climate. The main goal of the mentioned ICDP expedition was to drill the 350 m thick sediment body underneath Lake El'gygytyn and to penetrate into the impact breccia rock to obtain a sediment record that documents Pliocene and Pleistocene Arctic climate (Fig. 2).



Fig. 1: Helicopter view on Lake El'gygytyn showing expedition camp on the western shore and surrounding hills that formed during the meteorite impact (vertically exaggerated, lake location in the small panel)

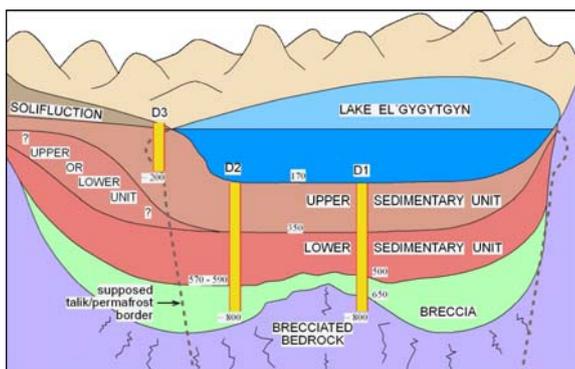


Fig. 2: Structure of Lake El'gygytyn's subsurface as reconstructed from seismic investigations (D1 marks the drilling site.)

As part of the day shift I was mainly dealing with handling, sampling and description as well as preparation for transportation of the core. After the total expedition duration of 5 months, 315 m of sediment core had been obtained. The drilling had penetrated 157 m into the brecciated bedrock. The deepest drilled hole reached a depth of 517 m.

The drilling operations were run from the frozen lake surface and it was a bit terrifying to be aware that you were sitting and working only on 1-2 meter thick ice right in the middle of a 170 m deep crater lake (Fig. 3). Work with people from USA, Russia and Canada was exciting and funny, and the Siberian cold and beauty fascinated me from the very beginning. I saw for the first time distinct sun dogs and polar lights, which almost took my breath away.

I learned how extremely hard it is to drill and recover a sediment core, since no day on the drilling platform passed without problems. Quite dramatic was the complete loss of the drilling equipment some hundred meters below the lake floor due to the shearing-off of the drilling pipes (a so-called twist off). We were forced to wait for a while for replacements to resume drilling operations but we used that time to build an igloo (Fig.4). I slept one night in the igloo wrapped in two -40 °C sleeping bags. I dispelled my last doubts about surviving that night, after my dear Russian colleague threw a bottle of *коньяк* (cognac) into the igloo and left saying: „If you feel cold, just take some sips of that“.



Fig. 3: Me on the drilling platform with first core section of breccia that documents the transition from the sediment body to the brecciated bedrock and that brought 15 Euros, 20 Dollars and 400 Rubles into my purse

The work was always filled with fun and joy. Drilling was performed continuously (when possible) in 12 hour day and night shifts. I received the title of Miss Dayshift from my day shift colleagues, which was not very difficult since I was the only woman during the day shift. We launched a breccia lottery, which comprises everybody's guess at what time and depth the brecciated bedrock gets penetrated first (stake of 5 Euro, 5 Dollars or 200 Rubles). By the way, the day and ►

night shifts have been highly competitive, especially in drilling the most cores during one shift and in being the first to recover brecciated bedrock. That happened, of course, during the day shift which pointed out who the winner in this funny rivalry is. Furthermore, it turned out that my guess missed the right time of breccia penetration by 5 minutes which made me richer by proud 20 Euros, 15 Dollars and 400 Rubles. Anyhow, this expedition also forced me to go

without some comforts of normal life like running water, diverse food and vegetables, a normal toilet etc. But all these inconveniences were by far balanced out by the funny work with nice people and the beauty of Siberia. I am endlessly happy and thankful for that opportunity.

For more information please check also: <http://www.elgygytgyn.uni-koeln.de/> and [http://www.icdp-online.org/contenido/icdp/front\\_content.php?idcat=512](http://www.icdp-online.org/contenido/icdp/front_content.php?idcat=512)



Fig. 4: Impressions from the expedition, from left to right: Recovery of a new core on the drilling platform, igloo, outside view of the drilling platform on frozen Lake El'gygytgyn

## SAMOYLOV ISLAND – A DREAM COMES TRUE

by Julia Antsibor (POMOR-III)

It was the middle of January 2010 when I knew from my supervisor Prof. D. Bolshiyarov that I could get a real chance to participate in the expedition "Lana 2010". I was so happy to hear about it! Samoylov Island was the object of my scientific interests when I was a student of the Russian-German master program "POMOR". Since that time I have wished to see the Island with my own eyes.

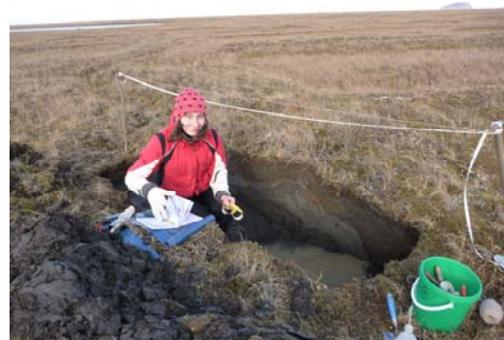
Day by day, month by month and finally the time was ripe for the expedition. On the 7<sup>th</sup> of September I took the night train to Moscow where I had to meet a German colleague (Prof. Lars Kutzbach from Hamburg University) thereafter we had to continue our trip together. In spite of quite a long journey we were glad to reach Tiksi (the settlement in the Arctic circle) without any troubles. Landing there I had a feeling that we were in another world. The sky and air were different. In Tiksi we have met Russian and German colleagues from the previous part of the expedition. Seemed the part of their expedition was successful. So apart from scientific work the grandiose event happened on Samoylov. In the end of August the prime minister of Russia visited the Island. Meeting German and Russian colleagues of the expedition "Lena 2010" and he was so interested in their microbiological experiments, permafrost, and gas emissions studies. He said that it is very important research work to predict the future of the climate changes on our planet.

However, our part of the expedition was not less successful then the previous one. In Tiksi we visited the office and the museum of the "Lena Delta Reserve". The vice director of the reserve was a wonderful guide. I never thought before that it was possible to give a touch to age in the proper and in a figurative sense of the word. Have you ever touched wool or bones of a mammoth?

For more than three weeks staying on Samoylov Island Prof. Lars Kutzbach and me managed to do and study a lot of things. I was shown the work of the meteorological station and how to work with obtained data. We measured the active layer depth of permafrost soils; observing that it becomes less and less due to coming winter. We were lucky (thanks to Lars) to do some soil profiles and collect samples for different kinds of analyses before frost. Curious to relate but during all the period of our "adventures" we have never been in a hurry. We used a gold formula "step by step" and "vse normal'no (everything is ok)" and seemed it helped us to survive.

The weather on Samoylov Island was variable but this fact made it more attractive. It was so nice to eye the changes of autumn reddish and yellowish colors into winter cold white. Every evening we were waiting for the thin band of polar lights appearance. Staying there you feel yourself like a part of nature, it makes you forget about problems from "the big land"...

However time spins away... One month, the expedition had to come to end and we had to come back to routine work. But I hope that I get a chance to visit this little part of miracle of the Arctic once again.



## IMPRESSUM

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