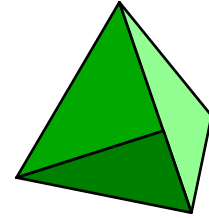


# INFOrum Scientium



## *Study Visit Stockholm*

No.3, December 2011

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This newsletter is available for download at: <http://www.liu.se/scientium/inforum>  
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Editor: Charlotte Immerstrand

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As part of the PhD-students career planning Forum Scientium makes study visits to research-intensive companies and to research departments at universities. During the visits, we try to meet newly hired PhDs and postdocs. The network of earlier Forum members, the so called Former Scientium, is valuable when arranging the study visits and contributes to the high quality of the visits. October 27-28, 2011, the Forum Scientium member Sara Helander arranged a visit to Stockholm.

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In the end of October, Forum Scientium arranged a study visit to Stockholm. Around 25 persons participated and took the opportunity to visit both companies, research departments and also the Swedish Museum of Natural History. The first visit during Thursday 27<sup>th</sup> was AstraZeneca in Södertälje, and after a nice lunch at Astra we split up and tried to find our way to the different study visits. It may seem easy to find the way if you have a GPS, but the GPS is not so reliable in all the tunnels....so at least one of the cars had some extra sightseeing before we managed to find the way.

After the parallel study visits we all met up at the Swedish museum of natural history. This was our last study visit this Thursday and after a nice presentation, we stayed at the museum and had dinner in the

restaurant. Some of the former forum members also joined this dinner and I think we all agree that it was nice to meet them again! After the dinner, some of us traveled back to Linköping but many stayed over at Fridhemsplans Hostel and took the chance to visit the bar next door, but also one more company during Friday 28<sup>th</sup>.

Friday 28<sup>th</sup> started with one oversleep (but Stefan, you are excused =)) and carried on with some car problems, but finally we were all heading for the different study visits!

Those parallel study visits were the last visits for this time, but I really hope that we will be able to visit more companies or research groups in the future!

*/ Sara Helander*

## AstraZeneca, Södertälje

*Anders Bresell*

We gathered at the university at 8 o'clock and continued the travel to AstraZeneca. It took around two hours to reach AstraZeneca in Södertälje. AstraZeneca is one of the world's leading and most advanced companies in the pharmaceutical industry.

We arrived at AstraZeneca around 10 o'clock and were welcomed by Anders Bresell, one of Forum Scientium's Formers who is currently working at AstraZeneca. After getting the visitor cards, while waiting for our colleagues who were still on the way to AstraZeneca, we had some coffee or tea and enjoyed the drug collection patented by AstraZeneca and displayed in the visitor hall.

Around 10.15 after welcoming us, Anders started his talk. He shared his experience of his academia and career in the industry. After getting his master degree in Engineering Biology in 2002, he started his PhD work in Bioinformatics under Bengt Persson's supervision. His research was focused on protein family characterisation, sequence pattern recognition, database and software development. He got his PhD in 2008. In the same year he started working at AstraZeneca R&D Mölndal by replacing his friend who was going on maternity leave. He worked for around one year as an Informatics Scientist at AstraZeneca R&D Mölndal. From 2009 until now he works at AstraZeneca R&D Södertälje as Senior Informatics Scientist. He is really enjoying the open work environment in Södertälje. He is collaborating with medical disease experts and the fellow colleagues in the Biomedical Informatics and Statistics groups. He also enjoys meeting many people in the company during the coffee break.

Anders shared with us the difference between working in industry and academia. The decision to either work in industry or academia really depends on personal

interest, talent and potential. Anders himself prefers to work in industry rather than academia. According to him, research in industry is not publication oriented in the sense that whatever you have invented, whether or not it can be published, it is all valuable for further development. In industry, you will also be expected to drive yourself, but with a view toward a common goal. You also need an understanding of what is expected of you as a member of a research team, based on objectives set at the beginning of your employment. Working environments in the industry are more dynamic and challenging due to the competition and team work.

Several questions were raised to Anders by the forum members; the reasons to work in industry, the possibility doing a postdoc at AstraZeneca, working in specific aspects and seniority in the company. Anders did a good job answering all our questions.

Around 12 o'clock we finished the discussion and had a great lunch time at a nearby canteen.

*/ Wetra Yandi & Mattias Tengdelius*

More information at:

<http://www.astrazeneca.com/Home>

## Bergenstråhle & Lindvall *Anna Hermansson*

After the common visit at AstraZeneca we split up into smaller groups and continued to Stockholm. The group which had chosen to visit Anna Hermansson at Bergenstråhle & Lindvall received a warm welcome with good coffee and cinnamon rolls, perfect after the lunch. Bergenstråhle & Lindvall is a full service intellectual property firm and one of Scandinavia's specialists in the area of intellectual property management. The company's vision is identifying, protecting and maximizing the value of their clients intellectual assets. To achieve this, the employees work in teams with consultants with business, legal and engineering degrees and experience.



*Anna Hermansson at Bergenstråhle & Lindvall.*

Anna gave a very nice introduction to her work at Bergenstråhle & Lindvall and her development from being a microbiologist in Linköping to becoming an European Patent Attorney at Bergenstråhle & Lindvall. She showed us an alternative way to work with science without actually doing the science in the lab. After the presentation of the company and the process from idea to patent, we had a very interesting discussion and Anna answered our questions very well and patiently.

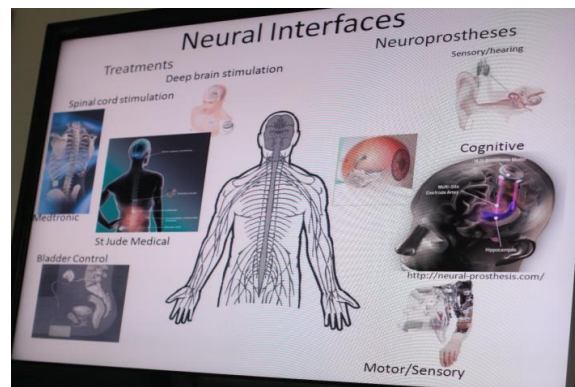
We left satisfied with more knowledge about patents, the job market outside academia and many students were motivated to take the Forum Scientium course "Intellectual Property as a Business Tool" next year.

*/ Alexandra Ahlner and Jutta Speda*

More information at:  
<http://www.bergenstrahle.se/>

## Neuronic Engineering, KTH Tobias Nyberg

At the School of Technology and Health, KTH, we visited former Forum Scientium member Tobias Nyberg and his co-workers. The word Neuronic is a combination of the medical term "Neurotrauma" and the technical words "mechanics/electronics". Tobias has a background in Olle Inganäs group here at LiU, and after his PhD he worked in Finland and Japan before he got his position at KTH in December 2007. Today he is the group leader of the implant group which focuses their research on developing suitable materials and methods



*Schematic figure of neural interfaces in the human body.*

for neural prosthetics substituting lost motor and sensory modalities.

The group is using polymers and hydrogels instead of regular electrodes since they are softer and can be mechanically and chemically modified in order to enhance the biocompatibility, vital to the successful implementation, of the neural interface.

We also got to listen to people from other groups at the school. Professor Hans Hebert is using CryoEM to look at, for example, the *E. Coli* ribosome and trans-translation in bacteria. This process is specific for bacteria and by understanding this we can, among other things, interfere with multidrug-resistant bacteria.

Mattias Mårtensson from the division of medical engineering spoke about their ultrasound based and nuclear based research and about using multi-modality contrast agents.

Svein Kleiven, also from Neuronics, is working with injury prevention by the use of numerical analyses for neuro-mechanics. They have developed a simulation model of the head, and showed that the strain and not the pressure to the brain is responsible for head injury seen in, for example, motor-cross accidents.

Last but not least, Daniel Lanner, a PhD in the group, showed us a few different helmets with a modified design due to their research. These helmets have an inner rotational part to reduce the impact on the head at an accident.



*Tobias Nyberg and Stefan Klintström*

Many interesting talks made us run out of time, so unfortunately we did not have time for a lab-tour, but we were all very happy with the visit anyway!

*/ Maria Jonson*

More information at:

[http://www.kth.se/sth/forskning/neuronik?l=en\\_UK](http://www.kth.se/sth/forskning/neuronik?l=en_UK)

## Episurf Medical

*Karin Wermelin*

Karin presented the small company Episurf Medical in general and the product  $\mu$ Fidelity in particular. The product enables repair of damaged tendons, especially in knee and toe joints. In short the patient is scanned using MRI and CT. The resulting 3D image is used to visualize the damaged area and to create a custom made “drill rig” that will fit perfectly onto the joint. During surgery the drill rig is placed onto the opened joint which allows mm precise positioning of the implant. The implant is also custom made and consists of cobalt-alloy with titanium and hydroxy apatite coating. The coating facilitates wound healing and incorporation of the implant with the existing bone.

At Episurf Medical there are currently four people employed. The company was previously an affiliate of Diamorph (and the name was Diamorph Medical until recently).

Karin’s main task at the company is to handle quality issues such as CE markings



*Pictures from <http://www.episurf.com>*

and pre-clinical trials. Karin continued to tell us about how she eventually ended up at the company after finishing her PhD. At the time the financial crisis had hit the market and job opportunities were few.

She struggled with arbetsförmedlingen (Unemployment service) but eventually got good help (apparently you will get more help if you are unemployed longer) and obtained a praktikplats (i.e. the unemployment service pays part or most of the salary) at Episurf Medical after which she got full employment there.

One take-home message was to ensure that you pay a-kassan (the unemployment insurance). If you do not, no money will be obtained during a period of unemployment.

*/ Anders Elfving & Fredrik Bäcklund*

More information at: [www.episurf.com](http://www.episurf.com)

## The Swedish Museum of Natural History

*Martin Testorf*

The last study visit of the day was at the Swedish Museum of Natural History. Our host was former Forum Scientium member Martin Testorf who defended his thesis in 2001 and now works as a scientific editor/communicator at the museum. He creates news from the museum research division and spreads it to a broader audience, and also works with exhibitions

and marketing for the activities for visitors including excursions, lectures and their science café.

The research division at the museum has participated in over 200 scientific publications annually the past few years, and has also discovered over 100 (!) new species. The research activities are focused on four themes: “diversity of life”, “ecosystems and species history”, “man and the environment” and “the changing earth”, and Martin presented some recent findings in a nice slide show. For example he told us about a team of scientists that found a 100 million year old fossil, in which a mite eating pollen off a flower can be identified. This finding is the first of its kind and provides a unique glimpse of a cretaceous food chain. The presentation also included several short films from different exiting research expeditions around the world. The museum is also the Swedish central for bird ringing, giving important knowledge about reproduction, migration and survival rates in many bird species. Moreover, the museum is appointed by the Swedish Environmental Protection Agency to monitor environmental contaminants and to study their effects on the fauna. The study visit ended with a pleasant dinner at the museum restaurant.

*/ Stina Axelsson & Mikael Pihl*

More information at:

[http://www.nrm.se/en/frontpage.16\\_en.html](http://www.nrm.se/en/frontpage.16_en.html)



*A nice dinner at the Swedish Museum of Natural History.*

## Perimed AB

*Kristian Svensson*

Five persons went to visit Perimed AB and it started with a drama. When we stepped into their office, the first mishap was that our host, Jimmy Bakker, wasn't there. He had just become a father and was of course home with his newborn child. Second, we were supposed to be there one hour later according to their notation. Ooops! That was definitely an embarrassing moment. Fortunately, the nice lady who welcomed us came up with a good idea. She placed us in their dining room, suggesting us to start with a cup of coffee while waiting for Dr Kristian Svensson who had taken over the responsibility for our visit.

Perimed AB produces and sells instruments, software and expertise within microvascular diagnosis. Kristian works as an international sales and application specialist at Perimed. He shared his career experiences with us. He has been working in different fields throughout the years but always related to his competence as well as interest, microscopy and imaging.

Mr. Björn Bakken, vice president, dropped in after a while. He is in charge of market and product development at Perimed. He told us that the company was established in 1981 and that his father was one of the co-founders. Perimed has been running lots of projects with other research groups and companies in order to improve the knowledge and understanding of diseases related to blood perfusion and microvascular functions.

Later, Dr Kristian Svensson showed us how to measure blood perfusion and transcutaneous oxygen using their PeriFlux System 5000. They have also developed a system where they can perform blood perfusion in imaging mode, this was done by scanning tissue with a low-power laser beam.

Time flew since our hosts were so hospitable, answered our random questions and shared their work experiences in the “real” world. We were supposed to leave at

11:00 but the visit took almost 2h longer. Björn guided us through their facilities and showed us the entire process from ordering, testing, assembling and packaging. We ended the tour with a lunch together with Kristian and Björn at a nearby restaurant. We were all very satisfied with the visit when we left them and headed back towards Linköping.

/ *Hung-Hsun Lee & Erik Martinsson*

More information at:

<http://www.perimed-instruments.com/>

### Acreo *Per Björk*

Acreo is a Swedish independent research institute with applied research in the fields of Broadband Technology, Fiber Optics, Nanoelectronics and Printed Electronics. The head office is located in Kista, while Printed Electronics is located in Norrköping. Acreo provides contract R&D and production resources to companies, from basic research to development and production. Per Björk, Former Scientium, described his work in the Bio Analysis group in the Nanoelectronics research field. The group combines microfluidics, chip manufacturing, biosensors and cell culturing. In one project, they directed the growth of inner ear neural cells in elongated cell culture chambers; in another they use super sensitive silicon nanoribbon field-effect transistors as biosensors. In the Bio Analysis field, there is more time for non-contract research, and they collaborate with academia, for example Karolinska Institutet (KI). We finished the study visit with a lab tour.

/ *Linnéa Axelsson*

More information at: <http://www.acreo.se/>

### Attana *Annica Myrskog*

After sleeping (some of us a little longer than others) at Fridhemsplans Hostel, a nice breakfast and some car trouble we drove to Attana AB and met Annica Myrskog.

Annica did her licenciate work in Bo Liedbergs group at IFM, together with

Attana. The title of her thesis was ‘Self Assembled Monolayers for Quartz Crystal Microbalance based Biosensing’. Currently, Annica is an Application Specialist at Attana AB where she is mostly responsible for the US market. Attana AB is a small company of 12 employees. The company was founded in 2002 and launched their first product in 2003 and Annica joined (as Ph.D. student) the following year.

Attana AB develops biosensors for the pharmaceutical, diagnostic and academic society worldwide. With a strong focus on characterising molecular interactions exactly as they occur in the human body, Attana is committed to increasing success during clinical trials by providing the life science community with biologically relevant information. Attana’s biosensors can be used to determine specificity, kinetics and affinity, amongst other binding characteristics of biomolecules and macrostructures of varying species such as cells, antibodies, proteins, viruses and bacteria. The major benefit with Attana’s products is their ability to process so called “crude samples”, e.g. real solutions, in contrast to measuring on purified well-defined solutions which often bias results.

/ *Leif Johansson & Fredrik Lysholm*

More information at:

<http://www.attana.com/>



*Annica Myrskog and Stefan Klinström at Attana*