No reason to rush home
LiU alumna Klara Tiitso enjoys her life in London | page 30

Hearing is about communication
Excellence centre focus on cognitive aspects | page 19

Biofuel or food?
Competition over desirable land | page 24

Instant brain-watching
page 4
Getting the competitive edge

As I write, the international elite of the computer graphics and visualisation world are gathered together on our campus here in Norrköping, which is hosting the Eurographics 2010 conference. In a little over ten years, professor Anders Ynnerman and his colleagues have managed to establish an absolutely top-class international operation. Even the big digital studios from the American west coast have discovered the talent that our master’s students have. At the end of May, Sweden’s king will inaugurate our new Visualisation Centre C, providing Norrköping with yet another exciting public attraction and thereby giving us the opportunity to show off some of our exciting research to a wider audience.

Our efforts to develop the links between research and industry, and to support entrepreneurship, have also been noticed more and more internationally. Please have a look at what an enthusiastic Dylan Jones-Evans from Wales writes at www.walesonline.co.uk: “Sweden shows the way.”

Research at Linköping University has always had a significant international profile, as expressed by the level of cooperation shown as well as the choice of research topics. But we are now seeing the growth of even more institutionalized collaborations.

This past spring, for example, I had the pleasure of signing two very exciting agreements with universities in Singapore. One of these involves an absolutely international top-class lab for biomimetic sensing – a joint initiative with the Nanyang Technological University (NTU) and the Austrian Institute of Technology (AIT). You can read more about it in this issue of LiU Magazine.

The other agreement in Singapore is with the Institute of Manufacturing Technology, and involves industry-related applications, in particular, the advantages of a “greener” production.

An increasing internationalisation is also evident on our campus. We have seen a rapid increase in the number of international master’s students, and we have received a lot of praise for our efforts to develop the exchange programme. It is a natural next step to now establish an international alumni programme. Contact with former students is extremely valuable for receiving feedback on our work, and we hope, of course, that they can also act as ambassadors, providing potential students with a full and honest picture of what it is like to be a student at Linköping University.

The other activity that has received a lot of praise for our efforts to develop the links between research and industry is the incubator, or “greener” production.
INSTANT BRAINWATCHING

It is all about having things under control – cars, unmanned aircraft and minds. The MOVIII Strategic Research Centre at Linköping University is now coming to its end, but the exciting research carried out there will continue.

text ÅKE HJELM
photo GÖRAN BILLISON

In her book Hon älskade (“She Loved”), Swedish author Helena Henschen writes about a German scientist who smuggled out a third of Lenin’s brain after his death. He wanted to know if there was anything special about a brain that could think great things.

These days he could have just put Lenin into a magnetic scanner, preferably whilst still alive so that there would be some thoughts to study.

In other words, it is sufficient to think of something new in order for that thought to be registered by the scanner and displayed on a computer screen. The active areas of the brain are coloured in blue, green, yellow and red.

But that is already old news. Development of that technology took a great leap forward when it was successfully used to show a brain’s activity in real time; whilst its owner is still lying in the scanner, he can receive direct feedback. This opens up fascinating possibilities – for the first time in history, it is possible to see your own brain.

“A person lying in the scanner can observe their own brain activity and control things by thought alone”, says Hans Knutsson.

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The technology with the abbreviation fMRI (functional Magnetic Resonance Imaging) took its first steps in the early 1990s. A problem that needed to be overcome was how to develop usable images from the extremely weak signals picked up from nerve cell activity.

Matt Andersson, himself a principal research engineer, is an experienced test subject. He calculates that he has spent at least 20 hours inside the machine, where he is exposed to a very powerful magnetic field – 1.5 tesla, or 50,000 times stronger than that of the earth.

“If I’m fine!” he says. “Magnetic fields are completely safe, as long as you don’t have any metal in there with you.”

As he lies in the tube that will lead him into the scanner, he puts on a head coil – an antenna that catches signals from the cerebral cortex – and a pair of 3D goggles. He is now connected to a loop, where his brain can work together with a computer to solve a problem.

A reply to the question “favourite food” emerges, letter by letter. P, A, N, C... pancake. A little shaky, but it works.

A possible application of this technique is to give patients who are totally paralysed a chance to communicate with the outside world. But, mainly, the real-time technology provides new opportunities for understanding how the brain works. It can also be used during brain surgery. Thanks largely to LIU researchers developing a new way of visualising information.

“We first scan the brain for five minutes”, explains Anders Ynnerman, professor of scientific visualisation. “New algorithms help...
...us to get better pictures with a greater depth than before. We then use the fMRI signal as a kind of lamp that lights up areas of activity. The light spreads out and casts shadows. We can also peel the brain apart, layer by layer, to see what is happening deeper inside."

"Everyone gets excited over the new images, from radiologists to neuroscientists," Ynnerman says. "All we need to do now is package the technology into user-friendly software."

Volume visualisation is valuable in many areas apart from medical applications. It can be used for simulating airflow around aerospace wings, for finding defects in industrial materials, in archaeology and so on. It is basically the same method used in creating special effects in films, such as smoke and fire.

To manage complex information and systems – that is the common denominator for MOVIII, the strategic research centre at Linköping University.

Lennart Ljung is a professor in automatic control engineering and the leader of no less than four large research centres at the university. He explains: “There are two big challenges involved in any kind of signal processing. Being able to separate relevant information from the background noise and to be able to present the results in an effective way – where methods such as visualisation, virtual reality and haptics are becoming ever more important.”

MOVIII spans a broad scientific field. Lennart Ljung’s goal is to break down the barriers between departments and create a joint research platform where ideas are exchanged instead of everyone jealously guarding their territory.

“Let’s imagine they want to build an aircraft at SAAB. Specialists form collaborative project groups to solve problems. That is not how we normally work in academia.”

He is trying to create something of that spirit within the centre, but he is careful not to go in issuing commands. “I try to work intuitively, as an inspirer”, explains Lennart Ljung.

MOVIII is now entering its final phase. The centre was established in 2005 with funding from the Swedish Foundation for Strategic Research, and, in October, it is time for the closing party at the new Visualisation Centre C in Norrköping. But none of the researchers plan on closing down.

“Our plan is to make ourselves so attractive that no investor can resist us. We are currently building up an infrastructure as a basis for seeking new project funding.”

That strategy has worked well so far. The research team behind MOVIII received a Linnaeus Centre – CADICS – with funding until 2017. A developed visualisation laboratory, new unmanned aircraft and a hybrid engine lab are now on the agenda. These projects represent expanded research in the areas focused on at MOVIII:

- Mapping brain activity
- Navigation for unmanned aircraft
- Vehicle warning systems
- Control of drive systems

Lennart Ljung has been successful in bringing strategic research centres home to Linköping University. But, actually, he is a little sceptical about that kind of research funding. He applauds academic freedom and asserts that research is fundamentally an individual operation.

“There has been a trend towards concentrating on large centres with clear objectives. But the pendulum will likely swing back.”

Footnote: MOVIII stands for Modelling, Visualisation and Information Integration. Researchers at the centre work on automatic control engineering, sensor informatics, vehicle systems, artificial intelligence and scientific visualisation.

Hjärnkoll i labbet

Sådan är det möjligt för en person som ligger i en magnetkamera att iaktta sin egen hjärnaktivitet och styra saker och ting omhot med sina tankar. Det berättar Hans Knutsson, professor i medicinsk informatik vid Linköpings universitet. Han ingår i excellenscentret MOVIII, där den gemensamma nämneren är att hantera komplex informацион och komplexa system.

Det handlar om att ha saker under kontroll – bilar, obeväpnade flygplan och hjärror.

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Breaking down barriers and changing ideas

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You leave with a competitive edge

- Top class education
- An international environment
- Choosing a PhD or master’s education at Linköping University makes you well prepared to meet the challenges of a globalised labour market

Linköping University offers more than 30 master’s programmes taught in English and each year around 200 new PhD students are enrolled. Learn more at www.liu.se/education.

LIU has a strong position as a renewer of higher education. We have received two out of eight national awards as Centres of Excellence within education by the National Higher Education Agency.
Fika is great!

We asked three international students about life in Sweden. Fika is their favourite tradition!

text & photo Theresse Winder

1. What is your favourite memory of Sweden?
2. What if any tradition will you continue in your home country?
3. Is there anything you would love to be able to take home with you?

SUSANA GÓMEZ MUNOS, EXCHANGE STUDENT FROM MADRID, SPAIN

1. It’s impossible for me to just choose one! I will always remember the friendliness of Swedish people. They helped us out a lot in the beginning and it was always with a smile. The frequent smiles are definitely something I noticed. Also I love the stress-free life here. In Madrid it’s impossible to cycle, here I cycle to university and arrive calm and smiling.

Another thing I think is great is the way your days are valued. Your grades are based on participation in the cycle, here I cycle to university and arrive free life here. In Madrid it’s impossible to start work early but you leave on time. Fast how in Sweden free time is respected, you have personal time. Even teachers here take the time as an exchange student has been so inclusive, there have been so many natural meetings and you meet so many new people all the time. You mostly meet new people in the student-corridors, where many people from very different cultures live together and then they bring their friends, from other nationalities too. This means you can meet new people even in your own home; it’s awesome and has never happened to me before.

And finally, I have to say something about the candle obsession! I love it. When I arrived in Linköping, I went to IKEA and bought a big pack of candles, copying the Swedish style. In every restaurant, in every home there is candle light and this makes the atmosphere so nice and relaxed.

2. Fika! Everybody respects fika. I really like how in Sweden free time is respected, you have personal time. Even teachers here take the time as an exchange student has been so inclusive, there have been so many natural meetings and you meet so many new people all the time. You mostly meet new people in the student-corridors, where many people from very different cultures live together and then they bring their friends, from other nationalities too. This means you can meet new people even in your own home; it’s awesome and has never happened to me before.

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3. I’m going to take my LiU store merchandi-se home with me! No seriously, I’d like to be able to take the Swedish lifestyle home with me. It feels freer and more relaxed. And my time as an exchange student has been so inclusive, there have been so many natural meetings and you meet so many new people all the time. You mostly meet new people in the student-corridors, where many people from very different cultures live together and then they bring their friends, from other nationalities too. This means you can meet new people even in your own home; it’s awesome and has never happened to me before.

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4. I am taking my studentanted. I enjoyed both the actual session and the party afterwards. The session where my friend defended his thesis was great, I liked they way it was run, with questions posed in an organised way. It was not just about challenging the student to try and catch him out but about the opponent wanting to see how well you know your research.

2. Fika! It is an opportunity to see and talk to your colleagues, a moment of socialisation. It also gives you extra energy to go back to work. I think it is really good for your work.


Ah, yes, there are many things I would like to be able to take home with me. I would like to take the practice of riding a bicycle everywhere, no matter what the weather or time of day. I would also like to take home all of the wonderful people I have met here, not only from Sweden, but from all over the world. It will be terribly difficult to leave my corridor-mates, classmates, and friends. I wish all of them could come home with me so we can continue to learn about and from each other, sharing our cultures and enjoying each other’s company.

I have learned so much in my program, but I have learned the most from the people I have gotten to know while living here, and I will miss them all.

VICTORIA WRIGHT, MASTER’S STUDENT FROM KENTUCKY, USA

1. My favourite memory of my time in Sweden took place on our class field trip to Åre. We had been cross-country skiing one morning and stopped to have lunch around a snow-covered fire ring. As we began clearing places to sit, a snow fight began among some classmates. As people arrived on their skis, it turned into a war. Snow was flying everywhere and we were throwing each other into the snow.

When we finally settled down to eat, still smiling and laughing, I looked around and realised that I was sharing such friendship and warmth with people from all over the world. I will never forget how it felt to sit in that group and feel so comfortable with people I had never met before the beginning of the school year.

2. I have enjoyed learning many Swedish traditions, so this is a tough question. I suppose the tradition that has been such a big part of my life here has been taking fika. This regular pause for coffee, tea, and a snack is such a relaxing tradition. I have come to realise that I depend on having this break every day. It is especially nice to take fika during class because many of us end up sharing something that we have brought.

So, I think this is the tradition that I hope to continue when I get back home. But again, there are so many to choose from!

EYLER NGOH NDUMEYA, MASTER’S STUDENT FROM DOUALA, CAMEROON

1. The first PhD thesis defence I went to, it was my friend’s dissertation. It was so different to what happens in Cameroon, it seemed like such a serious event. There were traditional songs and the professors attended. I enjoyed both the actual session and the party afterwards. The session where my friend defended his thesis was great, I liked they way it was run, with questions posed in an organised way. It was not just about challenging the student to try and catch him out but about the opponent wanting to see how well you know your research.

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I have learned so much in my program, but I have learned the most from the people I have gotten to know while living here, and I will miss them all.
Sivaram Pandian had never heard of Linköping when he was looking for a course in environmental engineering. Once here, he became inspired by the Swedish experiences in using biogas as automotive fuel. His project today: To convert all of the thousands of buses in the huge city of Chennai (formerly Madras) to run on biogas.

It is a classic win-win situation. The city of Chennai, with its population of over ten million, produces several thousand tonnes of solid waste every day, which, for the time being, is mostly just dumped. The city’s more than 3,000 buses run on diesel, a fossil fuel that causes serious air pollution.

If the waste could be used in the production of biogas, both of these problems would be reduced. In addition, carbon-dioxide emissions would be cut drastically and fuel costs would go down by 25 percent. It works in Linköping, where the city’s buses have been running on locally produced biogas for more than ten years, so why not Chennai?

A couple of years ago, Sivaram Pandian – or Siva, as he is known – came to Linköping University. He is a qualified electrical engineer and wanted to expand his training to include the environmental field. He did an online search and found the master’s course in Energy and Environmental Engineering, which was then relatively new at Linköping University.

“I had never heard of Linköping”, he laughs, “but I thought it was worth a try.” Education in energy and environmental engineering at Linköping University is characterised by a systems and holistic approach, whereby the waste from one process can become a beneficial raw material in another. Environmental problems are turned into business opportunities. Öster- götland, the province in which the city of Linköping is situated, is also at the forefront of the production of alternative fuels – bio-diesel and ethanol in addition to biogas.

“If Linköping can run its 68 buses on biogas, imagine the potential in a place like Chennai, with its more than 3000 buses”, says Siva. He chose Chennai because there is a good foundation to build upon there. Biogas is already produced at the city’s five treatment plants, but, instead of being used for automotive fuel, it is used only in generating electricity for the treatment plants themselves. There is a lot of potential here, says Siva. “The quality of the biogas needs to be improved so that it meets the requirements for vehicle fuel.”

It is precisely this process that he has learned and would now like to introduce in Chennai. He has chosen one of the five treatment plants – Koyembedu – that is situated near the largest bus station in Asia. This station is frequented by 2,000 buses and 200,000 passengers daily. His choice minimises the problem of transporting the biogas.

Siva has been devoting a lot of time in establishing contacts in India. And he has been successful. January of this year saw the signing of a Memorandum of Understanding between TEDA (Tamil Nadu Energy Development Agency) and Svenska Gasföreningen (The Swedish Gas Association) for a pilot project to be done. Siva is now looking for funding. He has contacts with several Swedish companies in the industry and has also started his own business, Ren Gas Private Limited. “It doesn’t all stop with Chennai”, he says. “India is a huge market; there is so much to do.”

Back at Linköping University, Professor Mats Eklund, Siva’s instructor, is clearly happy about how things are developing. The two-year Energy and Environmental Engineering Master’s programme is now being offered for the third year running. The course is highly sought after and students come from all over the world, outside the EU.

“We have applicants from Iran, China, India, Pakistan and Latin America but none from Europe. We would like to have more from there”, says Mats Eklund. For students coming from outside the EU to study at a university in Sweden, a fire will be introduced from the autumn of 2011. That is obviously a concern, but Mats Eklund hopes to be able to get sponsor money from businesses to help those students who are not able to finance their studies themselves. As he points out, this course is also a perfect way of exporting Swedish know-how and technology and create business opportunities for Swedish companies.

Sivaram Pandian
LiU news

Four honorary doctors at LiU

The Belgian Professor Michel Gevers is an internationally renowned researcher in the field of automatic control and systems engineering and has, for example, led high-profile projects to develop models for the regulation of industrial processes. Professor Richard P Ellen, University of Toronto, Canada, is doing research in dentistry and has over the years had many contacts with the Faculty of Health Sciences. Professor Uno Svedin has actively participated in many interdisciplinary research collaborations and has for over three decades had close contacts with the Faculty of Arts and Sciences.

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Tuition fees from next autumn

Sweden will introduce tuition fees for students coming from outside Europe from autumn 2011. Efforts are now underway to increase LiU’s international profile.

Earlier this year the government published its bill “Competing on the basis of quality – tuition fees for foreign students”. According to the proposal, fees for foreign students will be introduced from the autumn semester 2011. Charges will apply to students outside the EU/EEA, who are not a “linking part in an exchange. Individual universities will themselves set the level of the fee, based on a principle of full cost recovery. In connection with the new charges the government proposes to introduce two new scholarship schemes. One is aimed at students in the 12 countries with which Sweden has established long-term development cooperation and the other is aimed at particularly qualified students. These will be administered by the Swedish Institute for the former and the universities for the latter.

SWEDISH UNIVERSITIES now have little time prepare for the new system. “With close ties to strong research environments and with Linköping University’s reputation of providing high quality to education we are confident that LiU will continue to attract talented students”, says LiU’s Director of Communication Lars Holberg. LiU will in this respect always be more of a talent destination than a volume recruiter. “We are not in this for the money, international recruitment

for us is a question of enhancing the quality for all students. The international students are a very valuable asset for us.”

There are a lot of new administrative processes that will have to be put in place regarding admission process, scholarships, reception and service. Many people are working hard for an extended marketing effort to be released in the autumn.

When Denmark introduced tuition fees for foreign students in 2006 it led to a significant reduction of its overseas students. There will now, at a national level, be a joint marketing effort to attract talented students.

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Research and education grew significantly in 2009, shows Linköping University’s annual report. The number of students increased by 100 to now stand at 26,100. The number of graduates from undergraduate programmes was at a record high of 3,609, while 776 new doctoral graduates put this number slightly lower than last year’s peak.

The number of employees increased by nearly 100 and in December 2009 LiU had 1,594 employees. Virtually the entire increase is found in the university’s core business, i.e. teachers and researchers.

The sharp increase in research funding, totalling 74 million Euros (46.5 million Euros), in combination with increased funding for both research and education, resulted in a total revenue of 500 million Euros and a financial surplus of 14 million Euros.

Linköping University grows

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World University

WHEN I FIRST ARRIVED at the University of East London,UEL, I wondered if I had accidentally wound up in another part of the world. Could this really be Europe? Or had I taken the wrong flight from Sweden and landed in Africa or Asia? The reason for my confusion was that I, as a white person, was no longer in the majority. That is not something that I am used to – at least, not when I visit universities in Sweden.

But, at UEL, things are different. 75 percent of the students are non-white, and the people working there also display a great range of ethnic variety. The university is situated, as its name suggests, in East London and next to some of the city’s – and England’s – most vulnerable areas, with a large variety of ethnic minorities living there.

The UNIVERSITY HAS BEEN WORKING to diversify its student body in terms of its recruitment strategies. UEL’s mission is to help absolutely everyone – regardless of background, to be able to complete their studies.

The education is similar to that taught at any other university, with the same exam requirements as anywhere else. What makes this university so different from many others is the enormous efforts that it gets in order to help absolutely everyone – regardless of ethnicity, financial situation, disabilities or social status – to be able to complete their studies.

Many universities today are trying to make it easier for students with varied backgrounds to study, but it is said that there are few academic institutions that are a match for UEL when it comes to well thought out ideas that are not just written down neatly in a document but actually realised.

One of the many examples, the university has a modern library that is open 24 hours a day during term. This means that everyone can access the library, with all its computers and literature, at any time – including those who, for example, are not able to sit at home and study, or those who work at certain hours.

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A growing number of international students have utilized the campus environment during the last decade. Linköping University hopes to attract even more students after the introduction of tuition fees for students coming from outside Europe from autumn 2011.

Swedish universities have little time prepare for the new system. “With close ties to strong research environments and with Linköping University’s reputation of providing high quality to education we are confident that LiU will continue to attract talented students”, says LiU’s Director of Communication Lars Holberg. LiU will in this respect always be more of a talent destination than a volume recruiter. “We are not in this for the money, international recruitment

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There are a lot of new administrative processes that will have to be put in place regarding admission process, scholarships, reception and service. Many people are working hard for an extended marketing effort to be released in the autumn.

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The sharp increase in research funding, totalling 74 million Euros (46.5 million Euros), in combination with increased funding for both research and education, resulted in a total revenue of 500 million Euros and a financial surplus of 14 million Euros.

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Come home, dad ...

Gender researcher Roger Klinth has studied campaigns in Sweden trying to encourage fathers to take their parental leave entitlement as provided by law.

Even the manliest photo campaigns and some 20 regional ones from a government offices, national authorities, trade unions and others since the 1970s – trying to encourage fathers to take their parental leave entitlement as provided by law.

There have been many campaigns through the years. Gender and equality researcher Roger Klinth has studied 13 national campaigns in the spotlight. The posters of the time are impressive-looking sport prams, or the creative engineering solutions of a stay-at-home dad in the kitchen.

Another angle taken by the campaigns can be referred to as “project dad” – being home with the child became a kind of personal training.

“Parental leave for men is seen as an asset in their working life – it is justified from a management point of view, whilst the same time off for women is more of a burden.”

In our society, it is possible to combine a successful career with having children. Roger Klinth has conducted a number of interviews with men who have chosen to stay at home with their children for an extended period of time.

The message is positive and doesn’t impose any expectations on fathers. Words like “force” are virtually unthinkable when it comes to men’s parental leave.

“There is a difference in how people view gender and parenthood. Increasing the quota is still controversial, so it is much simpler for the politicians to just display that they have the power to act by investing a few more million in new campaigns.”

Most men take their first two months of parental leave, but the majority leave it at that. So, today, a particularly clear educational aim is evident in the campaigns.

“It is all to do with enlightenment, to tell people that men are entitled to more than two months. Efforts are taken to ensure that the message is positive and doesn’t impose guilt upon men who choose to work instead.”

And what results are there to show from all these campaigns?

“I believe that they are quite ineffective. The campaigns constitute a tiny voice that is being drowned out amongst the cultural bedlam that shapes ideas about gender and parenthood. Parenting is also a question of age – and generations”, says Roger Klinth.

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SHE KNOWS THE IMPORTANCE OF STATISTICS

When Monir Dastserri grew up in Iran, she wanted to be an architect. But things changed, and today she has a top position as a statistician. And she is very proud of her profession.

“I CANNOT UNDERSTAND why more people don’t become statisticians”, says Monir Dastserri. She quotes Google’s chief economist Hal Varian, who predicts that, within a decade, the job of statistician will become the sexiest around. People usually think he is joking: “... but who would’ve guessed that computer engineers would’ve been the sexy job of the 1990s? The ability to take data – to be able to understand it, to process it, to extract value from it, to visualize it, to communicate it – that’s going to be a hugely important skill in the next decades.”

“In addition to that,” adds Monir Dastserri, “it is absolutely fundamental for a working democracy. Without any answers to the right questions, politicians do not have anything accurate to base their decisions on.”

But politicians intervened and the university in Iran was shut down. Monir Dastserri wound up in Katrineholm, Sweden and a long way from her childhood dream. At 31 years of age and with a 7 year-old daughter, she chose the statistics programme at Linköping University.

“Job prospects as an architect were just too poor, it wasn’t worth trying for. But I’ve always been good at maths and interested in social issues, so statistics suited me well.”

“There are a lot of people who think that statistics is just about counting. I think that is a shame. It has mainly to do with methods and planning how to do surveys properly so as to provide information about what you really want to know.”

Nothing annoys her more than being put on a project too late, and having to solve problems because the project has already advanced far enough for incorrect methods to be used or wrong questions to be asked.
Today, Monir Dastserri works in methodological statistics at the Swedish Association of Local Authorities and Regions (Sveriges Kommuner och Landssting – SKL) in Stockholm. Her place of work commands a spectacular view over the city. She is a kind of consultant, working as coordinator and with internal methodological support and project management.

**What was it like to start studying after thirty – and with a young child?**

“It was tough,” she replies. “I didn’t have any trouble with the maths, but it was mostly a fun challenge. You don’t just calculate, but you prove formulas, and I get a kick out of that every time I manage it. But I couldn’t speak Swedish well enough, and – for me – the most difficult thing was to just keep up with the lectures and understand the assignments. I often had to sit there with a dictionary.”

But she had made her mind up. She was determined to manage her studies. “In a way, the studies also saved me. I didn’t have so much time to think and feel.”

Each day, she was at university at eight o’clock in the morning. By four o’clock in the afternoon, it was time to collect her daughter, and, at eight o’clock in the evening, she sat down to study.

Not one missed exam. Monir Dastserri remembers how she used to come up with some kind of reward for herself after every successful test. “You know – consumer society!” she says with a laugh.

“There was no possibility of having a normal student’s life, but I did have wonderful classmates – we had a lot of fun together and studied together. It is our 15th class reunion this year, but, unfortunately, I’ll be in southern France by then and won’t be able to attend.”

Completing her bachelor’s degree after three years, she decided to continue her studies. “I specialised in biostatistics and took a master’s degree in Health and Society.”

**Before Monir Dastserri?**

Monir Dastserri had even completed her degree, she got her first job at the Women’s Clinic in the Linköping University Hospital. “That’s another thing people don’t think about – that research is also completely dependent on statistics. I worked with studies carried out for medical research and there was a lot of work to do with various research articles.”

Two years later, she went on to her next job, at The National Centre for Work and Rehabilitation (Rikscentrum för arbetslivs-inriktad rehabilitering) in Linköping. In 2001, she noticed that what was then the Swedish Integration Board (Integrations­avdelningen) in Norrköping was looking for methodological statisticians.

“The job was about using more advanced quantitative methods and touched on social issues that interest me”, Monir Dastserri explains.

**Today, Monir Dastserri works in methodological statistics at the Swedish Association of Local Authorities and Regions (Sveriges Kommuner och Landssting – SKL) in Stockholm. Her place of work commands a spectacular view over the city. She is a kind of consultant, working as coordinator and with internal methodological support and project management.**

In June 2008 the Swedish Research Council approved Linköping University's plan for a ten-year interdisciplinary research programme on hearing impairment and deafness. Linnaeus Centre HEAD is now focusing on the cognitive aspects of communication in various everyday situations. “With this centre, we establish cognitive hearing science as a new science field. We study the physical and cognitive basis of hearing and its interplay with signal processing in hearing aids in listening environments with varying demands and complexity”, says Jerker Rönberg, psychologist professor and head of the centre.

**Hearing is about communication**

Excellence Centre Focus on Cognitive Aspects

At Linnaeus Centre HEAD a new field of research is emerging – cognitive hearing science. Researchers from different areas are working together to gather new knowledge that can help make everyday life easier for persons with hearing impairment.

It is not just a question of hearing – you also have to be able to swiftly interpret and construct meaning from what you hear. For this process, people who are hearing-impaired are more or less dependent on their working memory capacity and ability to mentally complete distorted and incomplete information (see figure on next page).

**Everyday situations** where several people talk at once – such as in a crowd, around a dinner table or at a party – can be very demanding for those with a hearing impairment.

“We have carried out several large studies about speech perception in disturbing everyday situations, such as gathering around a dinner table, can give rise to very complex sound environments for persons with hearing impairment.”

**HEARING PLAYS an important role in our communication with others.** When our hearing falters it affects the quality of life. We become unsure of whether we correctly perceive what people say, find it harder to take part in conversations and can become isolated in social contexts.

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“We have carried out several large studies about speech perception in disturbing everyday situations, such as gathering around a dinner table, can give rise to very complex sound environments for persons with hearing impairment.”
**Background sounds.** They show that there is a clear correlation between working memory capacity and hearing well in these environments”, says Thomas Lunner, adjunct professor in cognitive hearing science at LiU and senior researcher at Oticon in Denmark.

In the middle of the nineties he and other LiU researchers participated in developing the world’s first digital hearing aid. Now he is aiming at hearing aids adapted to a person’s cognitive abilities.

Thomas Lunner tells about studies which have examined the ability to listen in the short gaps which arise in our conversations, i.e. catching another conversation while speaking to somebody. “That ability is substantially worse with a hearing impairment. Generally, you become worse at distinguishing between different sound sources.” Thus is a challenge when developing new hearing aids.

“We need to find new kinds of signal processing which can compensate for the consequences of the hearing impairment in noisy sound environments.”

**Cognitive model show how we hear**

Jörgen Rönning, director of Linnaeus Centre HEAD, has developed a cognitive model for how we hear. He calls it the Working memory model for Ease of Language Understanding (the ELU model).

Hearing is something you do with light-speed – as you hear normally. It takes ten milliseconds for the sound to enter the ear, another maybe 100 milliseconds for the brain to interpret it as a linguistic sound and 100-200 milliseconds later the words are brought forth from our semantic lexicon into long-term memory.

“But if you have a poor input, e.g. in difficult hearing environments or when you have a hearing impairment, you tend to get stuck. A mismatch arises when the incoming signal is checked against the long-term memory”, says Jörgen Rönning.

“The study shows that hearing stimulation strengthens the development of the child’s cognitive abilities. They get a better working memory, quicker lexical access and better phonological skills which affect their reading and calculation ability positively and better phonological skills which affect their working memory, quicker lexical access and better phonological skills which affect their reading and calculation ability positively and better phonological skills which affect their reading and calculation ability positively and better phonological skills which affect their reading and calculation ability positively and better phonological skills which affect their reading and calculation ability positively. It is like talking on the telephone using Skype”, says Björn Lyxell.

A current study has examined cognitive development among children with cochlear implants.

“The sound is much more muffled than normal. It is like talking on the telephone using Skype”, says Björn Lyxell.

A cochlear implant only has 12 electrodes with different frequency sensitivities. A cochlear implant is a kind of hearing aid. The outer parts of the implant, a microphone, a signal-emitting speech processor and a radio transmitter, are fastened behind the ear. The radio transmitter signal is fed to a receiver inside the cranium and this sends signals to an electrode inside the cochlea. The electrode impulses are in turn caught by auditory nerves and fed to the hearing centre in the brain.

“At the international forefront**

Linnaeus Centre HEAD strives to be a truly international research environment. Researchers and postgraduate students from all over the world demonstrate that cognitive hearing science at LiU stays at the forefront.

Ingrid Johnsrude from Canada is one of the professors in the research team. Her encounter with Linnaeus Centre HEAD was a pleasant and unexpected discovery. “When I first heard of the HEAD initiative in cognitive hearing science, in November 2008, I was tremendously excited. I had never before had a name for my research area – that was it!”

Her research focus is on exploring how different sources of knowledge contribute to speech perception. “As people get older and the sense of hearing becomes less acute, they must rely more and more on what they can piece together to make sense of spoken language, especially in the busy and noisy listening conditions of everyday life.”

Many sources of knowledge can assist perception of speech. If a particular talker is well known to you it is easier to guess what that person might be likely to say and how they might say it. Important cues are knowledge of the topic of discussion, knowledge of the structure of the language being used and knowledge of the world. “All of this can help a listener to restrict the pool of possible identities that a particular degraded word can take. For example, if I hear ‘the witness spoke a solemn …’ I can probably guess that the final word will be oath, even if it is not spoken very distinctly”, explains Ingrid Johnsrude.

Ingrid Johnsrude is really satisfied with her new research environment. “When I first contacted the group, they were very welcoming. People in the HEAD team come from many different backgrounds and bring different skill sets and expertise to the table. This results in a multidisciplinary approach to the problem of communication in hearing impairment which is enriching and productive. I also appreciate the double focus on both basic and applied research.”

**Hörsel­forskning vid fronten**

Hörseln är en av de mest omständliga fältområdena. Vara medverkan av hörselimpair­ment blir ofta uppenbar när vi märker att en person inte lyssnar på vad vi säger. Det kan vara till skillnad mot övriga somar, eller taform av störningar som tinnitus respektive dyc­xia faller in i kategorin av hörstör­ningar.


En ny utbildningscentrum för hörselimpair­ment och dess första studenter börjar nu sin gradvidning. Det är ett stort omslag och ett projekt som kan ha en betydande utgångs­punkt för att påverka framtiden.

**Footnote:** Read more about the research at www.headcentre.se.

**Hörstudier vid fronten**

Hörstudier är en av de mest omständliga fältområdena. Vara medverkan av hörstillstånd blir ofta uppenbar när vi märker att en person inte lyssnar på vad vi säger. Det kan vara till skillnad mot övriga somar, eller taform av störningar som tinnitus respektive dyc­xia faller in i kategorin av hörstör­ningar.


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The EU has granted nearly 5 million Euros to establish novel molecular tools and technologies for diagnosis and treatment of neurodegenerative diseases, such as Alzheimer’s disease. The project is coordinated by Linköping University.

It is called the LUPAS project and seeks to bridge the gap between diagnosis and treatment of both Alzheimer’s disease and prion diseases. By developing novel agents and methods for diagnostic imaging of accumulations of misfolded proteins, so-called amyloid plaques, it is possible to improve quality of diagnosis as well as facilitate monitoring and understanding of the disease progression.

The novel molecular imaging tools are based on luminescent conjugated polymers, LCPS, a material normally used for electronic applications, such as light-emitting diodes (LEDs). It was discovered by the researchers forming the LUPAS consortium that these molecules could effectively bind to amyloid plaques. Through the specific luminous signature that these molecules bind effectively, researchers forming the LUPAS consortium believe that novel molecular tools and methods for diagnostic imaging of neurodegenerative diseases, such as light emission, could be used to visualise and monitor these plaques.

The LUPAS partners are Linköping University (Sweden), Université Claude Bernard Lyon 1 (France), University of Tübingen (Germany), Norwegian University of Science and Technology (Norway), Charité – Universitätsmedizin Berlin (Germany), Norwegian University of Science and Technology (Norway), Université Claude Bernard Lyon 1 (France), University of Oslo (Norway), University of Bristol, England, and many others, including the University of Science and Technology (Norway), Tübingen (Germany), Norwegian University (Sweden), Université Claude Bernard Lyon 1 (France), University of Oslo (Norway), University (Sweden), and many others.

Within a few years, it will be possible to apply this technology in the clinic, he adds.

The LUPAS partners are Linköping University (Sweden), Université Claude Bernard Lyon 1 (France), University of Tübingen (Germany), Norwegian University of Science and Technology (Norway), Charité – Universitätsmedizin Berlin (Germany), Applied Spectral Imaging (Israel), Tübingen (Germany), Norwegian University (Sweden), Université Claude Bernard Lyon 1 (France), and many others. The key objectives are to use these tools for understanding the pathological hallmarks of Alzheimer’s disease and prion diseases in the future.

“The skills within the LUPAS consortium will undoubtedly bring forward novel tools for understanding the pathological hallmarks of Alzheimer’s disease and prion diseases in the future,” says Professor Per Hammarström, the LUPAS coordinator. “Within the 3 year time frame of LUPAS we will develop these tools for use in disease models systems in vivo and on histological ex vivo samples from humans. If successful it will take a few more years to apply this technology in the clinic”, he adds.

When the French had just started building the Suez canal, a seed ripened on an acacia tree in the Egyptian desert. 151 years later, it came to life in a laboratory at Linköping University.

In 1856, Oskar Théodor Sandahl, a physician in Stockholm, travelled to Egypt to cure a problem with his trachea – it may have been tuberculosis. Just like Carl von Linné and other physicians of the time, he was also interested in biology – especially botany. Whilst travelling in the country, he collected plants, seeds, insects and other creatures. His collection was shipped home – each item carefully packed and labelled in glass jars – and deposited in the drug museum at Kamlinska Institutet. For over a hundred years, the seeds were moved back and forth until finally ending up at their final home at Karolinska Institutet. For over a hundred years, the seeds were moved back and forth until finally ending up at their final home at Karolinska Institutet.

It was not until 2007 that someone took an interest in examining them more closely – would it be possible to get such old seeds to grow? “We can see that the genetic variation is much more limited today than it is in the old kinds of grain. Technology can also provide an explanation as to what it is that creates the properties we try to achieve”, says Matti Leino.

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“In April 2008, 155 years and five months after being collected in Egypt, the first seeds were sown in bowls of sterile sand. They were placed in a special climate-controlled room in Linköping University’s biology department at 20 degrees Celsius, with 16 hours of daylight each day, a little water and no extra nutrition.

After just two weeks, the first sprout emerged from the sand – a seed from an acacia aroma (A. Senegal). Within a few weeks, two more little seedlings were reaching out towards the light.

There were no more seeds that germinated during the 100-day experiment, and today, a single robust specimen remains and can be seen at the orangery in Julita, Nordiska Museet’s garden in Stockholm. It is a world-record class result: only a few of old seeds can produce information about how plant species evolve over time. Through plant breeding, mankind has changed the properties of his crops, with inevitable consequences for diversity.

STUDYING THE DNA of old seeds can provide information about how plant species evolve over time. Through plant breeding, mankind has changed the properties of his crops, with inevitable consequences for diversity.

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STUDYING THE DNA of old seeds can provide information about how plant species evolve over time. Through plant breeding, mankind has changed the properties of his crops, with inevitable consequences for diversity.
The rich countries of the world need enormous quantities of biofuel. It will mainly be produced – cheaply and efficiently – in the poor countries. Old colonial core-periphery patterns persist and are tightly locked into the visions outlined by the heavyweight international agencies.

The rich countries of the world need enormous quantities of biofuel. Magdalena Kuchler studies the arguments put forward by some important international organisations on energy, food and climate change. She has studied documents from the Food and Agriculture Organization of the United Nations (FAO), the United Nations Framework Convention on Climate Change (UNFCCC), the Intergovernmental Panel on Climate Change (IPCC) and the International Energy Agency (IEA), which was created by a small number of high-income countries in connection with the oil crisis in the 1970s. According to Magdalena Kuchler, these organisations and their view of the future have a big part to play in influencing political decisions, which is why she decided to critically examine how they reason on the future.

She finds that it is the needs of richer nations that take control in the debate. Their top priority is the energy issue. After that comes climate, followed by availability of food in last place.

“The debate revolves around how we can produce sustainable energy,” she says. “On the other hand, nobody talks about how much energy we can sustainably produce, and the idea that we would have to save energy does not seem to cross their minds – despite the fact that we know that large quantities of biofuel can hardly be produced sustainably.”

The case is quite the opposite: it appears that the international organisations see a future where we can continue increasing our energy consumption thanks to cheap biofuels from poor countries. With their vast tracts of arable land, good climate and cheap labour, they are supposed to save us from the energy crisis and solve the climate issue in one fell swoop.

But even the poor countries are portrayed as winners. They can produce a commodity that is attractive on the global market, which provides both an income and plenty of work opportunities.

The FAO even says that investing in biofuels could bring about a renaissance for rural development and agriculture in Africa, which, today, is poorly productive and neglected.

Brazil is often highlighted as a good example in their commitment to biofuel. The country is currently the world’s biggest exporter of ethanol. The raw material used is sugar cane, which is grown in large monocultures. A sizeable and growing proportion of Brazil’s arable land is, according to the country’s own plans, going to be used for ethanol production. What this means is that other crops are pushed aside and that, in the long term, those same rain forests that we want to save are threatened. Brazil’s president, Lula da Silva, is also travelling around countries in Africa, encouraging them to follow their example and offering technical assistance.

“The problem”, explains Magdalena Kuchler, “is that, in the face of the enormous quantities of biofuel that are needed, small-scale, long-term sustainable farming is never going to be profitable. A peasant farmer in Africa cannot deliver the solution to first world’s energy problems. These require large-scale plantations.”

Brazil’s success story does have a dark side, which the international organisations do not mention, she says. The environmental damage is huge. There are not even many job opportunities, since efficient production requires a high degree of mechanisation – even in countries where labour is inexpensive.

The issue of how long-term sustainable food production is affected by large-scale efforts to manufacture biofuel is not discussed very much by the international organisations. This is in spite of the fact that every sixth inhabitant of our planet – over a billion people – are still lacking daily food. The number of the world’s hungry has even increased in recent years: from 840 million by almost 200 million to arrive at the number we have today.  

The rich countries of the world need enormous quantities of biofuel. Magdalena Kuchler studies the arguments put forward by some important international organisations on energy, food and climate change.
“This should worry at least the FAO more than it does,” says Magdalena Kuchler. “The peasant farmers in the poorest countries are expected to have greater purchasing power when they can sell biofuel to us,” she continues, “but, at the same time, we expect cheap products.”

Even now, because the rich countries of the world are greatly subsidising their own agriculture, farmers in the poorer countries are finding it difficult to compete. Food prices are kept artificially low because of the subsidies, and farmers in poor countries—who do not receive any subsidies—are poorly paid for what they manage to grow. In the future scenarios presented by the international organisations, they are to instead concentrate on growing crops suitable for biofuel production and buy food from the rich countries.

“Becoming reliant on food imports is hardly going to improve the food security situation”, Magdalena Kuchler points out, “as proved by the recent food crisis.”

HER CONCLUSION is that the international agencies concentrate on problems faced by the rich countries. “We do not face any food crisis here. The issue of food security lacks importance for us, and that is reflected in their documents.”

She then poses a question that may seem completely obvious but is rarely, if ever, asked. “If we are so interested in stimulating agriculture in Africa, how come we are putting so much emphasis on biofuel instead of directly on food production? It is food they need.”

She also says that the future as seen by these international agencies would have the poor countries permanently confined to their role as producers of agricultural raw materials in constant dependence upon the rich. The colonial legacy lives on. And not only does it live on, it is growing stronger. Magdalena Kuchler explains that, already, countries and multi-national companies (often those in the oil business) are buying up massive tracts of land in Africa—or renting them for 90 years—so as to ensure biofuel production. Short-sightedness and a lack of realism pervade visions of the future right up to the highest international level, she concludes. “However we try to wriggle out of it, the problem needs a serious global reduction in energy usage. That is never discussed, though.”

Biosensors will detect tropical diseases

Liu molecular physicist sets up new laboratory in Singapore

Singapore has a high tempo and the economic conditions for research are generous. Within seven months, Bo Liedberg managed to set up a laboratory for the manufacturing and characterisation of new sensor materials that can detect contagia and toxins.

Bo Liedberg is a professor in molecular physics at Linköping University and, since the autumn of 2009, has been spending a third of his time at Nanyang Technological University (NTU) with the task of launching the Center for Biomimetic Sensor Science (CBSS). The management also includes professors Wolfgang Knoll from the Austrian Institute of Technology and Freddy Boey from the School of Materials Science and Engineering, NTU. The main force behind the project is Bertil Andersson, director of Linköping University.

For three years now, he has been the provost responsible for research and education at NTU.

Biomimetics is the science of imitating nature’s solutions to various problems—one of the cornerstones of the Liedberg group’s research back at home. One example of biomimetics is studying the Arctic flounder’s antifreeze mechanism; another is trying to create surfaces that repel barnacle larvae from ships’ hulls.

A medical application is to detect disease markers by taking advantage of the ability that biomolecules have to hook on to each other. The main focus at the Singapore-based lab is to develop simple field sensors for detecting tropical infectious diseases, such as dengue fever and malaria, and poisonous substances in connection with accidents and acts of terror or war. An important collaborator is DSO National Laboratories, which has good opportunities to field test and evaluate the sensors.

“The second focus at the lab is basic research about new concepts for optical and electrical sensors, using materials such as gold, carbon nanotubes and graphene. The ultimate goal is to develop new ways of detecting toxins and other pollutants in water, foodstuffs etc.”

BERTIL ANDERSSON CALLS the new laboratory a unique effort, a world-class network for the next-generation biosensors.

“Singapore is investing a great deal in strategic research that can lead to applications. Dengue fever is a serious disease that occurs in the country, and malaria is common in the neighbouring lands”, he says. The city-state of Singapore is in a special position as a rich and research-intensive land surrounded by relatively poor, developing countries. Very large investments mean that they are now in the middle of a “quantum leap”.

“It is fantastic to be able to work in a system where there are plenty of resources. The new funds have made things very dynamic. This has, for example, made it possible for us at NTU to set up a new medical facility in cooperation with the Imperial College in London”, says Bertil Andersson, who is scheduled to return as a professor at Linköping University in 2011.

LIU partner
Singapore’s 649 square kilometres hold 4.5 million inhabitants and three large universities. NTU is the technical one, with 24,000 students in undergraduate education, over 8,000 postgraduates and 5,500 employees. Half of the students and many employees live on campus.

There are ten postgraduates and post-doctoral researchers working at the bio-sensor laboratory today. Five researchers at NTU are engaged as tutors. If all goes according to plan, staffing will be doubled within a year.

The initiative, funded by NTU together with partners Linköping University and AIT, also includes an exchange programme for all academic levels, from undergraduate students to professors. There are also well先进的 plans for cooperation between NTU and Linköping University within electronics, materials science and interactive media.

Biosensorer ska vara

LIU-professorn Bo Liedberg är med och bygger upp ett helt nytt biosensorlab i Singapore. I ett samarbetsprojekt ska enkla och fältmässiga sensorer utvecklas för att upptäcka tropiska infektionssjuk­­kom­­mar, som denguefeber och malaria, och giftiga ämnen i samband med olkyr, terrordåd eller krigshand­­lingar.

Biobränsle eller mat?

Världens rimla lader behöva "morma mängder med bio­­bränsle. Det ska huvudsakligen produ­­ceras, billigt och effektivt, i de fattiga länderna. Magdalena Kuchler studerar argumenten i de framtidsbilder som föres- fram av tagna internationella orga­­nisationer.

But even the poor countries are portrayed as winners. They can produce a commodity that is attractive on the global market, which provides both an income and plenty of work opportunities."
LiU Alumni broadens international work

SOCIAL MEDIA WILL PLAY IMPORTANT ROLE

It will soon be easier for international alumni to keep in contact with one another and with Linköping University when they return home. Facebook groups are just one way.

“Alumni can teach us what we need to develop,” says Karin Gibson, who is heading a project aiming to strengthen the ties between Linköping University and former students from the four corners of the world.

“They are also our best ambassadors. They can tell others what it is like to study at Linköping University, and demonstrate what a person can become.”

The project is aiming at both exchange and master’s students. Some are here for perhaps three months, others for two years. Whichever group they belong to, they are all equally welcome to be a part of the new network.

In the middle of June, a new website will be launched (see www.liu.se/alumni), where international alumni will be able to register for a new network.

“It will soon be easier for international alumni to find alumni portraits, see information about other programmes and master’s students. Some are only here for perhaps three months, others for two years. Whichever group they belong to, they are all equally welcome to be a part of the new network. In the middle of June, a new website will be launched (see www.liu.se/alumni), where international alumni will be able to register for a new network.

The annual alumni day was held in the style of the 80s and the C-building was especially decorated with furniture and accessories from the 80s. On exhibition displays were everything from ice creams to music charts and movie posters representing the era.

The idea is that the pilot scheme will generate ideas that can later be extended to other programmes. Early on in their course, international students will receive information about the opportunity they have for keeping in contact after leaving the university. Hopes are that many will jump at the opportunity.

“We aim to get at least 20 percent of this year’s alumni in on the network,” says Karin Gibson.

Popular Alumni Day with environmental theme

150 new and old alumni from different programmes – and different decades – gathered in mid-March to meet, remember and learn something about the environment.

The day’s theme was the environment. There were lectures about climate change and man’s ability to influence developments. In parallel workshops, participants learned about what a sustainable daily life might look like, what industrial ecology is, organisational changes impact on the work environment and how to design a sustainable logistics system. A number of exhibitors in the C-building showed examples of practical environmental work that is being done on campus and in various businesses and organisations in the region.

In the evening there was an 80s style celebration with plenty of laughs. Camilla Smedberg, responsible for LiU’s alumni activities, was very happy at the end of a long day.

“We received many positive comments from the participants. The programme turned out really well, the lectures were interesting and I really want to thank everyone who helped make this a successful alumni day,” says Camilla Smedberg.
Klara Tiitso is a technical biologist at the European Medicines Agency in London.

The work is carried out in close cooperation with the various national medical product agencies within the EU. EMA works as secretariat for a number of scientific committees that are made up of experts from every European member state. These expert committees have a central role in the work and issue recommendations about whether or not a new medicinal product should be approved. It is, however, the European commission that makes the final decision.

As scientific administrator, Klara’s assignment is to act as coordinator for this approval process. When a company develops a new medicine, an application for approval is sent to EMA, whereby it is the responsibility of Klara and her colleagues to make sure that all necessary information is included, that the application is legally correct, to liaise with the company and provide support to the experts evaluating the product.

“IT IS ADMINISTRATIVE WORK, but I have to understand what the applications involve”, says Klara. “A suitable scientific education is needed in order to work as scientific administrator.”

An degree from Linköping University, together with a supplementary education in medicine and biotechnology, stands her in good stead at work. “It is true that I have acquired a broad scientific knowledge, plus I have learned a certain way of doing things and to be able to take in and analyse information. Then again, of course, wherever you end up, you have to learn the finer details on the job. But I have my educational background behind me.”

HOW DID SHE END up working here?

As Klara explains, it was probably a combination of her determination to seek out new challenges, to work internationally, and her interest in biotechnology. During her education and in the years that followed, she spent some time in Vienna, where she did her thesis, and also Germany, where she trained at a biotechnology company and studied German.

She has also spent seven months in New Zealand, although her main focus there was altogether different: growing cut flowers. That and the adventure of being on the other side of the world, of course.

During her supplementary education, she found out about her current place of employment and decided to apply as a trainee there. She was accepted, along with ten other young students from Europe.

“I was quite simply very interested in these issues. That the office is in London was an added bonus.”

THE FIVE MONTHS OF WORK experience whetted her appetite. She applied for a job at the agency and was accepted after a tough application process. She now instructs trainees herself.

For the first few tentative months in London, she lived in cramped communal accommodation. She now lives in a rented two-room flat in Greenwich, South London. The job is challenging as well as very pleasant from a social aspect, with colleagues from all over Europe. She also finds London itself very stimulating, with its abundance of absolutely everything.

There is no reason for Klara Tiitso to rush back home.

“I never imagined that I would be away for so long, never saw myself as a city person. I love the outdoors, but I can get that on holiday instead!” she says with a laugh.

“London is also great if you want to travel – from here, you can easily get to anywhere in the world.”

A great interest in biotechnology and a strong desire to challenge herself lured Klara Tiitso away from the small town of Eskilstuna, via Linköping University, to the great metropolis of London.

Teknisk biolog i London


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