Tracking the biochemistry of pain

They explore life
Secret writing decoded by language scholars
Among active students
Fellow in New York
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LIFE IS FASCINATING. Uppsala has a long tradition of research in the life sciences. And the capabilities to explore the secrets of life have never been greater. The new SciLifeLab in Uppsala has the technological resources to map the human and animal genomes and to search for the origins of diseases. There, in the tiniest molecules, we see the difference between health and sickness, between life and death.

Questions vital to life are being answered. Whether it’s exploring the smallest constituents of life in the lab or studying how to give newborns a good start in life. Recent research from Uppsala shows the importance of the umbilical cord also after birth. A discovery that attracted worldwide attention.

These rapid advances also raise questions about right and wrong. Here, too, Uppsala has robust resources, with the ongoing expansion of medical law. The topical debate about biobanks is being closely monitored by the Centre for Research Ethics and Bioethics.

New Horizons wishes to reflect not only the front lines of research but also the University’s encounters with the wider community. This spring a much-anticipated course on values in senior care will train more than 700 leaders—the goal is to reach a total of 2,000 participants. Another forum is the Uppsala Berzelii Centre, where hospitals, universities, and biotech companies jointly focus on pain and Alzheimer’s disease.

Other key meetings take place in mentoring groups, which are proliferating. Mentors are often former students returning to guide students. Alumni activities are not only pursued in Uppsala. We’ve met Carole Ginman, who works in New York to develop an alumni office. Uppsala University’s network is growing worldwide.
They explore life

New technology for analysing the functions of DNA and proteins has created entirely new potential in both biology and medicine. It is now possible to understand, diagnose, and treat diseases at the molecular level. Meet some of the people behind SciLifeLab, a burgeoning, creative research environment in Uppsala.

“Good research is collaborative”

Kerstin Lindblad-Toh is clearly not a “lone wolf” researcher. Of course, she has always liked to sit and ponder problems—but her truly major research efforts have been done in collaboration with others.

AT BROAD INSTITUTE in Boston, which is one of her workplaces, she directs major genetic research projects. Recently the genomes of 30 mammals were mapped—from hedgehogs and armadillos to apes—which she hopes also enhance our knowledge of human genes. Some 300 people did the practical work with data collection. No fewer than 80 scientists were listed as co-authors of the article.

To direct such gigantic projects requires a knack for collaboration, but also a creative setting. Such a setting is now being built in Uppsala and Stockholm under the name of SciLifeLab (Science for Life Laboratory). Gathered here are, among others, clinical researchers and researchers in comparative genomics, which compares the genes of humans and animals. They have access to the latest technology and experts on informatics, who know how to merge huge masses of information.

“We want to build a new ‘hub’—a forum similar to the dynamics found at the Broad Institute, with people talking to others that they normally don’t work with,” says Kerstin Lindblad-Toh.

THEY HAVE ALREADY come a long way. There’s more and more interest in the Uppsala–Stockholm region and all over Sweden. There are 800 people on the mailing list, 300 of whom turned up at the latest get-together at SciLifeLab.

Kerstin Lindblad-Toh is the director at Uppsala, but she still has her post at Broad Institute in Boston. Together with her husband and 11-year-old son, she spends half
of the year in Boston and half in Uppsala.
Two different research environments
that both have advantages.
– In Sweden we’re really good at
hypothesis-driven research. We ask in-
teresting questions, and we have good
patient materials and smart scientists. At
Broad we also have smart scientists, but
are eager to tackle the biggest, quickest
and newest thing.
The mapping of 30 mammals is a
typical example. Another is mapping the
genes of 10 000 schizophrenia patients.
SciLifeLab makes it possible to work
on a large scale in Sweden as well.
– We want to exploit this large-scale
technology to address our really smart
questions. That’s when you get the best
research, not by being the biggest, but by
using the technology on the right ques-
tions.

KERSTIN LINDBLAD-TOH is one of the
leading researchers in her field of com-
parative genomics and has published
prolifically in recent years in journals like
Nature and Science. Her research career
took off when she arrived at MIT in Boston
in 1998, having just completed her PhD.
Two years later she had a chance to lead a
major mapping of the genes of mice, and
since then she has been involved in large
projects, as of 2004 at the Broad Institute.
Her years as a post-doc in Boston made
all the difference for her.
– There’s always an element of chance.
You have to be in the right place at the
right time to get a chance. But it’s also a

SciLifeLab studies diseases at the molecular level. Above, protein analysis with so-called PLA technology.

Kerstin Lindblad-Toh wants to use technology to address really tough questions.
This is what we want to do in many of our pathogenic genes are important there too. Up in human patients and see if the same studied an inflammatory disease in dogs roughly: the dog. For one thing, she has Kerstin Lindblad-Toh has studied thoroughly: the dog. For one thing, she has studied an inflammatory disease in dogs and the cell mechanisms behind it.

Now we’re going to do this follow up in human patients and see if the same pathogenic genes are important there too. This is what we want to do in many of our dog studies, although it takes time. First you have to find samples, then you have to look for genes, then you have to find the mutations, and then follow up in humans to see whether they have the same pathological mechanisms.

Other diseases being researched are skeletal cancer, lymphoma and breast cancer, periodic fever and other autoimmune inflammatory diseases. This requires lots of collaboration, for instance with veterinarians at the Swedish University of Agricultural Sciences or with cancer physicians at the University Hospital. This kind of collaboration is facilitated at SciLifeLab.

Here we have platforms and competence in so many different areas that you can take a research question, maybe starting where you yourself are the expert, then find another expert for the next step, and yet another expert for the next step, she says, and continues:

I know a lot about dogs and genetics, but I’m certainly not an expert on breast cancer, so I need someone who can tell me if this makes sense, does it look good? Is this what it looks like in humans—when do we have to think differently, when can we think along the same lines?

IT’S A MATTER of daring to be open, of sharing with others. Here Kerstin Lindblad-Toh wants to praise the open culture at Broad, where big lab meetings take place with some fifty professors from various institutions around Boston.

The discussions and arguments can be lively, but nobody’s there to filch from someone else. We’re there to move research forward and contribute whatever we can. People are generous and share their ideas. If you feel someone has something to add and wants to help, that’s great.

This summer the ground will be broken for a new building in a courtyard at the Biomedical Centre. The large round building will be a focal point for SciLifeLab. Gathered here will be genetics, comparative genetics, system biology, bioinformatics, and perhaps clinical genetics.

The floor plan will be open, with many conference rooms and common coffee rooms. Guest rooms can be booked for a day, a week, or a month. And some of the walls will be painted white so people can write on them, just like at Broad Institute.

You need to be able to stand there together and solve problems on the walls—not everywhere but in certain places. Our workrooms also have glass walls. If you have guests, you need to see whether they’re there, walk by and grab a cup of coffee together, says Kerstin Lindblad-Toh. ■

AMONG ALL MAMMALS there’s one that Kerstin Lindblad-Toh has studied thoroughly: the dog. For one thing, she has studied an inflammatory disease in dogs and the cell mechanisms behind it.

In 2009 a large group of researchers at Uppsala University joined together to apply for funding for a major centre for life sciences. With strategic research allocations from the government, their dream could be realized, with one node in Stockholm and one in Uppsala.

In 2010, 292 research projects were underway at SciLifeLab. In 2011 there were 529—an increase of 50 per cent on the year. The projects were an average of six times larger than the first year. More than 30 per cent were led by researchers from other universities in Sweden.

In the network surrounding SciLifeLab there are now 800 people.

Nine platforms. Including:

• Genomics (DNA sequencing)
• Proteomics (research on protein functions)
• Comparative genetics (comparisons between genes in different animals)

Two research programmes:

• Biology (evolutionary genomics, evolutionary biology and system biology)
• Medicine (cancer, cardiovascular disease, neurodegenerative diseases and infections)
Carolina’s eye for images

TEXT: SUSANNA ERIKSSON  PHOTO: MIKAEL WALLERSTEDT

After 2 1/2 years at Broad Institute in the US, researcher Carolina Wählby is back in Uppsala. Right now she’s busy hiring staff and setting up her own new research team as part of SciLifeLab.

HER RESEARCH FIELD is advanced digital image analysis.

– Images fascinate me. Microscopic images represent an entirely new world in terms of patterns and shapes, and images are easy to communicate. The goal of digital image analysis is to have the computer interpret pictures objectively and quantitatively—to glean information that the human eye and brain can’t always measure in a quantitative way, says Carolina.

In her research she is developing methods to analyse microscope images of cells and tissues, among other things.

– It’s about everything from measuring how cells react to various kinds of stimuli to determining the sequence of RNA molecules in cancer tissue.

In one of her projects she uses a worm as a model system for infectious diseases in humans. The worm is only one millimetre long and has many organ systems similar to those of humans.

– We infect the worm with the same bacteria that makes humans sick, treat them with thousands of different possible drugs, and then use automated image analysis to determine which substances enable the worms to recover from the infection.

She says that the technology they use has great potential, for example in looking for new pharmaceuticals for bacteria that have developed resistance to antibiotics. In one screening of 37,000 potential drugs, they found six entirely new substances.

Sven wants to crack cancer codes

TEXT: SUSANNA ERIKSSON  PHOTO: MIKAEL WALLERSTEDT

Cancer researcher Sven Nelander was recently recruited to SciLifeLab. He comes from Gothenburg University.

– This is really great, and I have high hopes.

– MUCH HAS BEEN done here to bring together clinical and basic cancer research, and we see great potential in gaining access to the infrastructure that’s in place at SciLifeLab, says Sven Nelander.

With a background as a mathematician and medical researcher, today he is developing mathematical models of cancer cells. The models are used as a new interpretive tool that will make it easier to understand how mutations conspire to cause cancer.

– A single tumour can contain hundreds of genetic and other molecular changes. This means that it can be hard in general to understand the measurements we extract from tumour biobanks today. Interpreting such measurements are a bit like cracking a code. This is where I believe mathematical and statistical models can be useful. In the long term we hope this can lead to new therapies and targeted cancer treatments, says Sven.

Sven Nelander’s team is focusing on tumours in the nervous system, including the brain tumour glioblastoma, which afflicts more than 10,000 people in Europe each year.

– Median survival for a glioblastoma patient is just one year, and there is no effective treatment. So this is an important clinical problem where new approaches may be useful. Today there are more and more powerful experimental tools and huge volumes of measurements to study.
How do get something to grow out of nothing? This is what the polymer chemistry team at the Department of Chemistry at Ångström Laboratory is discovering at great speed. Their findings mean that we soon will not have to be operated on to heal severe bone fractures or burn injuries. All we will need is an injection.

“EXPLORE EVERYTHING—stop at nothing”. This quote, which introduces Sonya Piskounova’s dissertation on smart biomaterial, is taken from Lara Croft, the heroine of the game Tomb Raider. The motto reflects the attitude of the research team in materials chemistry at Ångström Laboratory. An attitude largely based on interdisciplinary collaboration. Besides chemists, the team includes biologists, medical researchers, surgeons, and materials scientists. Sonya herself holds a master’s degree in biotechnology. The research specialty is called regenerative medicine and is about developing new biomaterials and methods to get human bone, cartilage, nerves, and skin to heal itself.

Sonya Piskounova is concentrating on the creation of new bone tissue with the aid of a biomolecule called BMP-2, which is a protein that makes bones grow. The problem with BMP-2 is that it breaks down in the body in just a few minutes.

“What’s new, and what I show in my dissertation, is that by having a gel-like substance carry the protein, a so-called hydrogel, you can control both how and where the new bone is to grow, explains Sonya Piskounova.

THIS HYDROGEL CAN be injected and is moreover made from a type of sugar (hyaluronic acid). It occurs naturally in the body in humans and animals and is otherwise used in cosmetic products for treating wrinkles. This offers major advantages.

On the one hand, you avoid open surgery and the risk of complications and infections that entails, and, on the other hand, there is no risk that the body will reject it, says Sonya Piskounova.

Applications in healthcare include both healing complicated bone fractures and growing bone tissue where there is too little or none at all. This involves defects following bone fractures and cancer or...
Biomedical research is making great leaps forward, but the jump to human application is still large, expensive and slow.
– We need to speed up the process from lab to people. We’re good at that here in Uppsala, says Jöns Hilborn, professor of polymer chemistry and director of an initiative for regenerative medicine within the EU.

THE TIME IT takes for research findings to impact the market is generally 15–20 years. That period can be shortened considerably, according to Jöns Hilborn.
– Today animal experiments normally require a large number of tries before you go back and redesign the test. It requires too many lab animals, takes too long, and is too expensive. Few companies can invest in experiments that might result in a product that can’t be sold for 15 years.

The EU project that Jöns Hilborn is leading is called Biodesign and is about designing experiments and materials in a more efficient way through enhanced planning, follow-up, and control of each step.
– We’ve found tools for better control of what happens in cells and tissue without having to use so many lab animals, explains Jöns Hilborn.

THE RESEARCH TEAM’S “toolbox” is now to be disseminated and elaborated together with leading researchers in the EU. As in Jöns Hilborn’s own research team, it’s a matter of genuine interdisciplinary collaboration.
– We won’t get anywhere unless we get different disciplines to talk to each other. It takes nearly a year before you achieve an understanding across the boundaries, and after two years you begin to get a whole different kind of overview.

Sonya Piskounova

– By having a gel-like substance carry the protein you can control both how and where the new bone is to grow.

Jöns Hilborn

– We’ve found tools for better control of what happens in cells and tissue without having to use so many lab animals.

AND COLLABORATION WITH INDUSTRY?
– We have good relations with industry. I’ve worked there myself and have companies of my own. But you have to be aware that the closer you get to finalise the more aspects you have to address—not least economic aspects, says Jöns Hilborn.

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when the jawbone is too weak to support a tooth implant. Clinical testing is already underway at Karolinska University Hospital.
– The tests show that it’s working well, but the problem we need to solve is how to determine the optimal dosage of the protein. Otherwise inflammations can occur in surrounding tissue.

Despite this hitch, Sonya Piskounova is certain that this type of treatment will soon be a reality in our hospitals.
– Within ten years. I’m absolutely sure, she says, hitting the table with her fist.

Sonya Piskounova

THE HYDROGEL can be injected and is moreover made from a hyaluronic acid that occurs naturally in the body in both humans and animals.

Sonya Piskounova

– We’ve found tools for better control of what happens in cells and tissue without having to use so many lab animals.

Biodesign

The EU project Biodesign in regenerative medicine started on 1 January 2012 and is led by Professor Jöns Hilborn’s research team in polymer chemistry at the Department of Chemistry–Ångström Laboratory.

The aim is to speed up materials development from research to clinic by collaborating with leading research teams in the EU and with small and medium-size companies. The project is also to establish collaboration with interested parties in Asia. Another key aim is to reduce the need for lab animals.

The project has a budget of €11 million over five years.
Rapid advances in life sciences have created fantastic new opportunities to work with life and death. But how do we guarantee that this is being done under the rule of law?
– We can’t always. Legislation lags behind, says Elisabeth Rynning, Sweden’s only professor of medical law.

“Legislation lags behind”

TEXT: ANNBRITT RYMAN PHOTO: JIM ELFSTRÖM

Medical law

A relatively new research field on the borderline between law and medicine. Here legal aspects of various kinds of medical activities are explored, such as biomedical research, forensic medicine, health and medical care, and drugs.

In Uppsala research is addressing the right to health, genetic self-testing, life-sustaining treatment, and use of data about the health of individuals.

The first Nordic professorship was created in 2003 and went to Elisabeth Rynning. She is still Sweden’s only professor of medical law.
Biobanks trigger debate

TEXT: GUNILLA STHYR  ILLUSTRATION: TORBJÖRN GOZZI

By law, every patient must be asked about storing a sample in a biobank.

–You shouldn’t see healthcare as a right, but rather as an opportunity, and then we have to work together to ensure that medical research can benefit all of us, says Joanna Forsberg at the Centre for Research Ethics and Bioethics at Uppsala University. This spring she defends her thesis about biobank ethics.

HOW DO ETHICS and law interact in the case of biobanks? The issue came up recently when the Swedish Data Inspection Board stopped the research project LifeGene because of its “unspecified aim” of storing biological samples for future research. According to the physician and doctoral candidate Joanna Forsberg, who has specialised on biobank ethics, the problems with LifeGene are more legal than ethical.

–But things are happening in this field. The 2003 Biobank Act is under revision.

Under that act each patient must be asked whether a sample may be stored in a biobank for future research, for example. The revision of the law now being proposed assumes, that people want to contribute to research but have the right to say no.

Joanna Forsberg has paid a lot of attention to patient consent.

–The consent of the patient is a precondition for the sample to be stored in a biobank. But after that, when the biological material is to be used for research, an ethical committee has to give its approval. The committee often decides that the person has to be asked again, a process that requires both time and money.

THE RIGHT TO decide about your own body is strong, even if it is a matter of individual cell samples. Some people disapprove of biobanks because they believe that the material will be used in research they don’t want to contribute to. Another reason is the fear that information from the sample analysis will reach the wrong people.

–The security aspect is of course important for people to be able to give their consent, says Joanna Forsberg.

After the assassination of Foreign Minister Anna Lindh the police made use of information in a biobank to find the murderer, something that turned some people against storing material in biobanks.

–But I think we all have an obligation to participate in research that in a longer perspective leads to better medicines and better healthcare. It’s in my own best interest and that of others.

In the U.S. there is talk about economic compensation for those who participate in promoting research, but Joanna Forsberg dismisses such thoughts. Who would get this compensation? Only those who contributed to effective drugs, and not others?

–That would be impossible to determine. They’re all equally important. No, what might work is a symbolic gift when they donate the sample, like what blood donors get.

What is a biobank?

An organised collection of samples that are gathered, stored, and registered for the purpose of being conserved for scientific studies, treatment, and investigations. The individuals are anonymous, as all material is coded. Samples can be everything from blood to tissue. Biobanks are found in many places in Sweden, for example, at all hospitals with a pathology division.

Follow the ethics blog at Uppsala University: etikbloggen.crb.uu.se
Vice-Chancellor Eva Åkesson has nine years of leadership experience at Lund University. Deputy Vice-Chancellor Anders Malmberg, meanwhile, is a pure Uppsala product. The new leadership duo find strength in their different backgrounds.

IN DECEMBER EVA Åkesson resigned as Deputy Vice-Chancellor of Lund University and headed for Uppsala, Lund’s chief rival at the national level.

− My background entails certain obvious advantages. I’m familiar with a large and complex university. And my great experience with leadership work means that I’m well versed in the issues of change that are now affecting higher education in Sweden, says Eva Åkesson, who is also a professor of chemical physics.

Early bird Eva Åkesson starts work around seven, which gives her an hour or two before the day’s meetings get underway. She likes to leave her door ajar.

− Having the door open is a way to see and hear when your colleagues come to work. To see them poke their heads in and say hi. It’s simple—I want to be able to see and talk to people. It’s a way to get closer to the organisation.

YOU CAN’T GET past her office, so there are other ways to follow the new Vice-Chancellor. As of January she’ been writing the University’s first Vice-Chancellor’s blog on the Internet, and she posts short reports daily about what’s up on her Twitter microblog.

− I want to be associated with an open and communicative leadership style that can lead to more doors being left ajar at our University, with its great subject breadth. If I can contribute to meetings between different disciplines, its a role I’m happy to shoulder.

She is also driven by a wish to counteract conflicts, both between research and education and between academic operations and support activities.

− All parts are needed for a university to function. In research and education it’s important to have a merit system that rewards both. I want us to speak just as often about education-based research as research-based education. I want to make Uppsala known as a university where education and research walk hand in hand.

Eva Åkesson starts her new job at a time when the Swedish higher education
landscape is changing. Deregulation of the internal governance of institutions and tuition fees for third-country students, for example, have sparked debates.

**THE NEW VICE-CHANCELLOR** thinks discussions are important and likes it when the window for debate is open. It’s equally important to move on once a decision has been made.

HAVING THE DOOR OPEN IS A WAY TO SEE AND HEAR WHEN YOUR COLLEAGUES COME TO WORK. TO SEE THEM POKE THEIR HEADS IN AND SAY HI.

—I’m not the sort of person who sits and dreams about the good old days. I’m focused on the future.

She is underway with strategic discussions in the Management Council, consisting of herself, the Deputy Vice-Chancellor, the Vice-Rectors, the University Director, and three students.

A key figure at her side is the new Deputy Vice-Chancellor, Anders Malmberg, with extensive experience at Uppsala.

—We complement each other and will enjoy a creative collaboration. I hope we will often disagree! When you exchange perspectives, you achieve the best quality.

Anders Malmberg’s academic career took off in the mid 1990s. He was named professor of economic geography in 1999 and a few years later director of the research centre CIND, which studies innovations and industrial dynamics. He just completed his fourth year as dean of the Faculty of Social Sciences.

What advantages does his background at the University bring? Anders Malmberg believes their strength lies in the differences between the two leaders.

—I have long experience of Uppsala and how we work here. Vice-Chancellor Eva Åkesson comes from Lund and brings a fresh pair of eyes. She’s a natural scientist and I’m a social scientist. That provides more navigational opportunities and represents a strength for the University.

**A MATTER CLOSE** to Anders Malmberg’s heart is governance and decision-making processes in academia. The deregulation of the universities, the greater freedom to make decisions about work forms, brings many key issues to a head.

—What does it entail to be a university? How should such an organisation be governed? The University needs long-term rules of the game. It’ll be fun to work with such issues. Because what we have here is an intricate interplay, with a line organisation with a clear executive power structure functioning together with education and research rooted in governance by colleagues.

The new Deputy Vice-Chancellor is also involved in career and recruitment matters, which he regards as key for the University’s long-term development, as is the question of what makes a research and education environment a world leader in a certain field.

—Why is Hollywood best at film-making and why is Silicon Valley strong in IT? My own research area is what lies behind successful clusters. This is close to the question of how you create and sustain creative and dynamic settings at a university, where new ideas sprout and blossom.

**PREVIOUS LEADERSHIP DUOS** at the University have often split the duties between them and had different areas of responsibility. Eva Åkesson and Anders Malmberg won’t have a strict division but will work closely together initially.

—If the Deputy Vice-Chancellor is involved in major parts of the Vice-Chancellor’s work, then the deputy part will be stronger. What’s more, working together suits Eva and me. We like to discuss and bring in multiple perspectives. We feel that the University benefits in the long run from different perspectives on one and the same matter, says Anders Malmberg.

**Tailwind for Uppsala University**

2011 WAS A good year for Uppsala University, which turned over SEK 5300 million and shows a positive result of SEK 106 million for 2011 at the same time as operations have expanded.

The number of employees has risen by 350 full-time equivalents. At the same time the number of full-year students in 2011 was higher than ever – 23,426. Educational offerings shifted towards an even greater proportion at the advanced level, which is in line with the University’s ambition. The overall increase is three per cent, while the advanced level grew by seven per cent.

—We are in an expansive period, and it looks like it will continue. The year’s outcome is a step in the right direction. A greater share of allocations are going to high-quality research and education, says Vice-Chancellor Eva Åkesson.

![PHOTO: MATTON](image)

**Merger with Gotland discussed**

UPPSALA UNIVERSITY AND Gotland University College have been collaborating since 2008 and have carried out several concrete joint projects. Now the two institutions are exploring the possibility of a merger. The aim is to create a unique profile within Uppsala University and long-term sustainable and competitive operations on Gotland. Three areas are especially urgent to develop further – liberal education, Net-based education, and education and research with regional and international anchoring.
Language scholars Beáta Megyesi and Christiane Schaefer, together with an American colleague, have decoded a manuscript from the 18th century. The cipher turned out to come from the Oculists, a secret society whose purpose was, among other things, to map the secret rituals of the Freemasons.

The manuscript, called “The Copiale Cipher” is 105 pages long and contains some 75,000 characters. Apart from the mark of the former owner (“Philipp 1866”) and a note at the end of the last page (“Copiales3”) the manuscript is all in code.

The code comprises 98 different characters, including everything from Latin and Greek letters to diacritical marks and mystical symbols, so-called logograms.

It was interdisciplinary collaboration and a big dose of curiosity and tenacity that led to the cracking of the code last year.

– This was something we didn’t have time to work on during working hours. We spent many late nights and weekends, explains language technologist Beáta Megyesi at the Department of Linguistics and Philology.

Philologist Christiane Schaefer, at the same department, had received a copy of the manuscript from a good friend in Germany as a farewell present when she moved to Sweden. She had looked at it but hadn’t gotten anywhere. When Kevin Knight at the Information Sciences Institute, University of Southern California, visiting Uppsala University for a workshop, needed a long text to test a new computer program, she came to think of the cipher she had at home.

The method behind Kevin Knight’s program would identify what language lay behind the code and also say something about the content. The manuscript was transcribed. Symbols and characters were rewritten with letters that the computer program could deal with. But the cipher put up considerable resistance.

– After many experiments that showed no preference for any particular language, we guessed it was German, as the owner’s mark in the book, Philipp had German spelling and the manuscript, as far as we know, comes from Germany, says Beáta Megyesi.

The actual cracking of the code involved a technique where the most common combinations of characters in words in the encoded document are compared with the most common character combinations in the underlying language. Since the language used was an older form of German than is used today, special knowledge of the language was required. Kevin Knight set up hypotheses that Christiane Schaefer analysed.

It turned out that the code is homophonic, which means that each character can be encoded by several different characters in the cipher. The scholars’ first assumption that it was the Latin letters that contained the actual message and not the abstract symbols proved to be wrong. The Latin letters in fact represent spaces in the document, probably to mislead decoders.

When the researchers began to get indications that the manuscript was written for a secret society, their curiosity grew. They wanted to read the whole text. One evening Christiane Schaefer came into Beáta Megyesi’s office and said she thought the cipher was produced by a society called the Oculists.

– There was a word ending in the text that didn’t fit in with the word Freemason, and I had heard of the Oculists, who were fascinated with the eye, says Christiane Schaefer.

Indeed, the cipher proved to derive from the Oculists, a secret society whose aim was, among other things, to map the secret rituals of the Freemasons. It became evident that the symbol, the logogram, they had previously thought looked like a mouth and had been transcribed as ‘lip’ was an eye. The researchers were able to use the context to interpret the logograms that stand for whole words. They stand for various roles and concepts in the secret society behind the manuscript.

The manuscript’s contents are now being studied by historians of ideas and...
The Copiale manuscript

More detailed information about how the researchers went about transcribing and decoding the manuscript can be found on the Web page below. There is also a translation of the text from German into English.

stp.lingfil.uu.se/-bea/copiale

Social media snubbed by many

HÅKAN SELG, AT the Department of Informatics and Media and the Swedish IT-User Centre (NITA), shows in a new study how various types of social media are used by those who work with IT and telecom issues. The study confirms visions of social media as publishing tools and discussion platforms. But it is a rather small proportion of all users who are active in these arenas.

—Social media as professional tools are primarily of interest to certain occupational categories and in specific situations, according to Håkan Selg.

Crowbar—historical swearword

PEOPLE INSULTING EACH other is a timeless phenomenon. In his dissertation, Erik Falk at the Department of Scandinavian Languages adds a historical dimension to insults by studying their function in Uppsala in the 1630s. In older times verbal attacks were more often taken to court as slander. A comparison reveals that the magistrate in town viewed language crimes more seriously than did professors at the University.

—The term ‘thief’ topped the list of insults among townsfolk, who perceived terms of abuse as unfounded accusations, says Erik Falk. Students insulted people with the terms ‘thief’ and ‘whore’ without being severely punished. They were perceived as general insults and signs of personal frustration. The University-specific insults ‘pencil-box’ and ‘crowbar’ were used to bully freshmen.
The umbilical cord is of great importance to the health of newborns, even after they’ve left the womb. If it is left in place for a while after birth, the risk of iron deficiency drops radically, which can save thousands of lives.

IN MANY PARTS of the world a newborn’s umbilical cord is cut right after birth, which deprives the infant of a valuable blood supplement. If the cord is left in place for three minutes, blood continues to flow into the child’s circulation.

– For a 3.5-kilo baby that’s a decilitre of extra blood. It doesn’t sound like much but if you scale it up to a 70-kilo adult, it’s the equivalent of two litres of blood, says Ola Andersson, chief physician at Halland Hospital and a doctoral candidate at Uppsala University.

He has worked as a paediatrician in Halmstad for many years. One day his wife, who is a midwife, said her hospital was going to start removing umbilical cords early, which prompted Ola Andersson to react.

– I thought that sounded crazy and felt there was a need for more knowledge about this, so I contacted various researchers in the field.

ONE OF THEM was Lena Hellström-Westas, and with her as his supervisor, he signed up for the doctoral programme at the Department of Women’s and Children’s Health in Uppsala.

Together with Magnus Domelöf, a reader at Umeå University, Ola Andersson performed a clinical study of 400 newborns whose umbilical cords were cut at different times. The results showed that children whose cords were cut three minutes after birth evinced fewer cases of iron deficiency at the age of four months than those whose cord was cut immediately.

These research findings attracted worldwide attention. Ola Andersson was interviewed in both The New York Times and The Economist. Hans Rosling, professor of international health at Karolinska Institutet, estimated that 35,000 lives could be saved each year. The Swedish daily Dagens Nyheter named the study one of the greatest scientific discoveries of 2011.

IN THE THIRD world, early severance is the standard practice in many places, even though iron is key in raising survival rates.

In the Western world it is also most common to cut the cord immediately, e.g. in the U.K., U.S., and France. Here iron deficiency doesn’t have as great an impact on children, but we need to know more about the effects, says Ola Andersson.

– Our hypothesis is that iron deficiency can affect the child’s development, by altering the chemical preconditions in the brain. For instance, a recent study showed a link between iron deficiency and ADHD.

The children in Ola Andersson’s study will all turn four in May, and he will continue to follow them in his research, to see if the iron supplement at the beginning of life also has effects in a longer term.
Scientists on obesity:

TEXT: MAGNUS ALSNE   PHOTO: MIKAEL WALLERSTEDT, STAFFAN CLAESON, FRANZISKA BENEDICT

Even Plato said that physical activity is good for your health. 2 400 years later, we sit more still and weigh more than ever.

—This is an acute challenge to our society, says Claes Held, a research at the Department of Public Health and Caring Sciences.

“The Healthy Life” is back in fashion. On Facebook people report every gym session, on coffee breaks new diets are analysed, and under the heading ‘The Body’ Dagens Nyheter explains that it’s no longer a matter of exercising or not—the ideal life is now trending towards extreme health and elite levels.

But there’s another side to that coin, the side we don’t like to expose in private but is shown all the more clearly in the statistics. The fact that we move less and weigh more than any previous generation.

—Current studies reveal how a pandemic of sitting still is spreading around the world. Some 69 per cent of developing countries’ populations and 37 per cent of industrialized countries’ hardly move at all in their spare time. The effects are evident in more and more cases of obesity, diabetes, and cardiovascular diseases, says the researcher Claes Held.

Obesity is described today as a global epidemic. If there is no intervention, some one billion people will be overweight in 2030. Part of the problem is that this is rapidly spreading to young people. In Sweden the curve is starting to level off, but the situation remains very serious. Every fifth child and adolescent is regarded as overweight today, and since 2009 dedicated care and research is targeting severely overweight young people aged 3–18, many of whom have already begun to develop type-2 diabetes.

—The further down in age the problem reaches, the more serious both the complications and the pressure on society’s health-economic resources. We need more knowledge about early stages of obesity and the mechanisms behind weight-related diseases, and we are seeing that this research is being given higher priority within the EU, says Professor Peter Bergsten.

BETA-JUDO IS A topical example of EU-funded investments in the struggle against obesity among children and adolescents. In February thirty top researchers gathered in Uppsala to establish guidelines for the project.

—We will focus on the role of insulin-producing beta cells in developing overweight and type-2 diabetes. If we can find a method to dampen the insulin boost and thereby the feeling of hunger, not least for many young people in the risk zone, it will be a giant step forward, says Peter Bergsten, who coordinates the project.

Beta-JUDO brings together eleven preclinical and clinical partners, a set-up that requires good communication to harmonise the disparate activities to be carried out across Europe.

—The group comprises researchers with great experience and knowledge. My ambition is for the meeting between basic and clinical research to generate new approaches to treatment of this group of patients, says Peter Bergsten.

SO IT’S NO coincidence that obesity-related findings are inundating our media. A study that recently attracted much international attention shows that lack of sleep also impacts people’s energy consumption and eating habits.

—One sleepless night reduces the body’s energy consumption by five per cent, and we also store 20 per cent more energy than normal. —Even simple activities like yoga or taking walks entail a lower risk of heart attacks. —If we can find a method to dampen the insulin boost and thereby the feeling of hunger, not least for young people in the risk zone, it will be a giant step forward. —Our sleep needs are individual, but we all have to fulfil them.

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normal. Moreover, the blood flow in many parts of the brain that affect how we relate to food in a way that we have previously only seen in obese people. This shows that lack of sleep confounds our metabolic clock, says researcher Christian Benedict.

The demands we face today to work overtime and constantly be online entail that more and more people find it hard to get to bed. Statistics show that the average European sleeps one hour less per night today than twenty years ago.

— Our sleep needs are individual, but we all have to fulfil them. A simple way to figure out your need is to measure how long you sleep for three nights with no alarm clock. The average time corresponds to how much you need to sleep every night, says Christian Benedict.

AND WHAT ABOUT the impact of sedentary life on your waist and health? Well, a couple of days into the new year the world press reported that car and TV ownership increases the risk of heart attacks by a full 27 per cent in low- and medium-income countries. High time to park for good?

— Well, more like not driving more than necessary. The study confirms primarily our need for physical movement. Even simple activities like yoga or taking walks lead to a lower risk of heart attacks, and the effect increases with the amount of physical activity, says Claes Held.

The results, based on data from 29000 participants in 52 countries, deepens the 2004 Interheart study. That study reported how nine risk factors, which can all be influenced by our lifestyle—like smoking, stress, diabetes, and physical activity—explain up to 90 per cent of all heart attacks.

— All the TV watching, car driving, and desk work has made sitting still an acute challenge for our society. If we are to be able to cover healthcare costs, we need to bring back physical activities in our everyday lives. Ride your bike to work or get off the bus one stop early, whatever suits your life situation, you’ll keep your heart in shape, says Claes Held. Add to that the fact that a physically active lifestyle positively impacts most of the other nine risk factors, your investment is worth it. The reward is a longer, slimmer, and healthier life. ■
“Good research is hatched in researcher brains”

Deputy Chairman of the European Research Council, one of the most powerful people in Swedish care, head of the Ludwig Institute—and an enthusiast in the snowboard piste. Join us as New Horizons meets Carl-Henrik Heldin.
WHEN DAGENS MEDICIN launched the 2012 list of the 100 most powerful people in Swedish healthcare, well-known names dominated—Göran Hägglund, Filippa Reinfeldt, and Christina Åkerman. But 24 new faces were profiled here, including the Ludwig Institute’s Carl-Henrik Heldin, an honour he seems to be taking calmly.

25 YEARS HAVE passed since Carl-Henrik Heldin was appointed the first head of the Ludwig Institute’s Uppsala branch. He receives me in a modest room at the BMC. The walls are filled with binders, a cartoon about long company traditions, and, as we’re in Uppsala, his bicycle helmet.

—I really love living in this city. We have an excellent host university, a good geographical location, and not least a fantastic infrastructure. I can ride my bike everywhere and never need to waste valuable research hours in traffic jams.

At the most, operations in Uppsala employed nearly 80 people. In 2005 Carl-Henrik turned down a proposal to merge with the Stockholm branch, which led to cuts in the budget. Today the staff is half as large, but there are no regrets.

—Our branch is a fruitful research environment where specialists from various fields collaborate and contribute to our aggregate strength. We’re making progress and are highly motivated to continue our mapping of how disturbances in cells’ signal system cause cancer.

OTHER UPPSALA ADVANTAGES include its proximity to Arlanda. Especially when you log 90 travel days a year. This week includes three days in northern Norway. What’s more there’ll be an overnight in Brussels, a city Carl-Henrik Heldin has had lots of time to get to know in recent years.

—I was involved in the establishment of the ERC from the outset and as of 2007 I coordinate the Life Science domain. In April 2011 I was appointed deputy chairman, so I do take quite a few trips to Brussels. At the same time I think my ERC work is truly important.

Carl-Henrik Heldin and his colleagues are to allocate the 2007–2013 programme’s nearly SEK 70 billion. Under the bottom-up principle researchers apply and receive grants on the basis of their own ideas and qualities. The path is clear: good research is hatched when ideas are allowed to take shape in the brain of the individual researcher.

—The ERC is to be an efficient financier with no red tape. The potential of each project needs to be evaluated by researchers, and grants are to be made without unnecessary bureaucracy. This has entailed that we have to some extent cut our ties to the EU Commission. At the same time we have established ourselves in a short time and by the 2014–2020 programme period, we will have a larger budget, which has been a key target.

BESIDES HIS DIRECTORSHIP and trustee positions, Carl-Henrik Heldin also has time for an unpaid professorship in molecular cell biology. Any gaps in his schedule are effectively filled with evaluations, conferences, supervision… and that’s just for starters. Is a 40-hour week sufficient?

—I probably work twice that. But I want to stress that this is something I want to do. My work and research a perpetual source of inspiration. If necessary I could reduce the dose starting tomorrow, but I simply don’t want to.

The follow-up question is obvious. When did the next generation of Heldins last see their dad? Carl-Henrik has definitely done his portion of day-care pick-ups and cooking dinner. Over the years he has even had time to take up snowboarding—he wants to run the same pistes as his children—and as recently as last winter the professor got up on a windsurfing board during a trip to Fuerteventura.

—I’m also pretty good at following sports on TV. Preferably football and hockey, although I often only get to see the ends of games. But I’ll say it again— to me, research is a lifestyle. My health permitting, I plan to work until the age of 67 and in this world there’s every chance I’ll live longer than that. If anyone can use my services then, well… ■
Charr smaller in harnessed rivers

TEXT: ANNELI WAARA PHOTO: TOBIAS VREDE, GÖRAN MILBRINK

When a river is regulated and a dam is built to exploit hydroelectric power, the banks are severely damaged and the biological environment is decimated. Uppsala researchers have monitored what happened to the charr in alpine lakes after regulation of several Swedish waterways and proposed compensatory measures.

THE ECOSYSTEM is severely damaged in that waterway regulation leads to nutritional impoverishment, and the impact on the fish population is drastically impaired growth, says Tobias Vrede, reader in limnology at SLU, where he moved to from Uppsala University. Contrary to what is claimed, we are not seeing any recovery in charr growth over time.

The project started at Uppsala University nearly ten years ago, and since then Professor Göran Milbrink at the Evolutionary Biology Centre has worked tirelessly with nutrition experiments, sample fishing, collection of data, and determining the age of fish scales together with his colleagues Tobias Vrede and Emil Rydin.

Now it’s time to publish the important results, comprising some 90 studies in nine regulated and eight unregulated alpine waters. Besides their own studies, they have included data from the 1930s onward.

–We’ve been able to do so thanks to the unique collections of fish scales at the freshwater laboratory at Drottningholm, the product of an inveterate whitefish researcher–Professor Gunnar Svärdson. The method of determining age by counting lines in scales hasn’t been used since the 1950s, but it works, says Göran Milbrink. As of the mid 1960s the age of a fish is mainly determined with the aid of their hearing stones, otoliths.

BY DETERMINING AGE the researchers have been able to compare the length and weight of five-year-old charr in various lakes in northern Sweden over a 70-year period. The findings are dramatic. In regulated lakes the charr were an average of 35 per cent shorter and 72 per cent lighter than in natural waters. Instead of 200–300 g, a four-year-old charr can weigh as little as 50 g.

The research team sees a logical explanation for this development: the growing leaching of nutrition caused by regulation. The first few years following the building of the dam, the effect on fish growth is temporarily positive, since vegetation-covered ground is now underwater, yielding a nutritional boost. But the regulation, with its alternating draining and storing, leads to erosion, and the banks remain bare after having been periodically exposed and freezing and periodically winding up far below the surface. The lake becomes ever poorer in nutrition.

–Attempts have been made to supply supplemental fish but haven’t led to any lasting improvement. In our project we have studied instead whether it’s possible to restore fish production by adding supplemental nourishment to stimulate the growth of plankton, in other words, fish food. This would make it possible to attain sustainable fish production in severely damaged ecosystems, says Göran Milbrink.

THE METHOD IS established in Canada and is supported there by power companies and authorities, and even though the natural conditions are not completely comparable, it could be worth trying, the researchers reasoned. The proposal was initially received with scepticism, if not outright resistance. You can’t fertilize crystal clear alpine lakes, can you? Wouldn’t that lead to algal blooms and choking weeds? But it’s really a matter of adding small,
well-balanced amounts of nutrition at the right time. The research team can now evaluate the results of nine years of trials.

–The lake is still not rich in nutrition, but we can say that we have gone from an extremely nutrition-poor lake to a very nutrition-poor lake. The results are highly positive, and people aren’t shaking their heads any more. The outcome was more plankton, with unaltered species composition, and charr growth has been very noticeable, says Tobias Vrede.

Nor were the fears justified this would increase the supply of nutrition in the Baltic Sea via the estuaries. It’s clearly negligible compared to the impact of agriculture. The nutrition supplements are small, and the effect of dilution downstream is huge.

DOES THIS MEAN that we’ve resolved the problem of damage so that more hydro-power plants can be opened? No, not automatically, says Tobias Vrede emphatically.

–No, regulation has an incredible impact. These are dramatically disrupted ecosystems. This should rather be seen as a measure you could demand as compensation for the ruined environment, he says.

Power companies have shown some interest. The project has received welcome funding from Jämtkraft AB, but without public opinion and political pressure, there wouldn’t be any motive to take extra costs for compensatory measures.

–Water power, with the environmental impact it has had, is important to Sweden, but it seems reasonable to demand compensation, considering that our knowledge has advanced considerably since the permits were granted many years ago.

Popular fishing waters

The lakes studied are primarily in the Ångerman River and Indal River systems in Jämtland, and in Torne River—areas that are popular fishing waters. They all have an eroded shore zone of 10–30 meters.

Attempts to add supplement nutrition have been carried out north of Åre (Offerdal) in the regulated lake Stormjölkvattnet with the neighbouring lake Burvatnet as a reference. Both are about 1 500 hectares in size and were originally very similar.

Follow the Leader in fish schools

IT’S A MATTER of playing Follow the Leader and sticking to the rules. Mathematicians at Uppsala University have used a combination of data analysis and mathematical modelling to show what rules fish actually follow to move in a coordinated way in schools.

–The rules proved to be strikingly simple. Fish try to catch up to the fish in front of them but slow down when they get too close, like car drivers who try to maintain a certain distance to the car in front of them. The fish turned towards their neighbours and primarily reacted to their closest neighbour, says David Sumpter, professor of applied mathematics at Uppsala.

Humans’ earliest history rewritten

MOST NEANDERTHALS in Europe died out more than 50,000 years ago. This is shown by new findings from Uppsala University and the Swedish Museum of Natural History. This changes the picture of a Europe peopled by a stable Neanderthal population for hundreds of thousands of years until modern humans arrived. The analyses presented in the study are based on severely degraded DNA from Neanderthals from northern Spain. Advanced lab methods and analyses were needed, and the researchers involved experts from a number of countries.
A DENSE DIN of voices fills the uppermost floor of Uppsala Konsert och Kongress, where an unusual group of students have gathered to start a course. They comprise several hundred office directors, assistance officers, nurses with medical responsibilities, and medical officers in charge of rehabilitation—all employees with positions of responsibility in elder care. They will be taking Uppsala University’s course in national values in elder care, and even ahead of the first lecture spontaneous group discussions have started. The media storm from last autumn and winter about the care company Carema has had an impact on most.

– It’s good that the debate has started about the situation in elder care. A shadow has fallen over private providers now, but we see the same saving frenzy in publicly run operations, says Hedvig Schriever, an investigator in elder care in the city of Sundbyberg.

Tarana Bagirbayova, deputy director of operations at the private company Äldreliv in Stockholm, agrees.

– There’s a risk that people will think it’s not working simply because it’s private. It’s not that simple. Many people contacted the newspapers to say that their loved one’s care is just fine at our homes, but the media weren’t interested, she says.

THE 7.5-CREDIT COURSE is about teaching participants to lead elder care on the basis of a new national set of values. It is provided under contract with the National Board of Health and Welfare, which has been more clearly stressing the importance of elder care with dignity.

*More than 700 elder-care employees are now studying at Uppsala University. The University’s largest-ever contract education course targets a highly topical issue – values in caring for the elderly.*

TEXT: HELENA EDSTRÖM   PHOTO: MIKAEL WALLERSTEDT
Graduate school attracts PhD candidates from all over Sweden

Sixty PhD candidates from 13 institutions are now taking part in the national graduate school Management and IT, which is run by Uppsala University. The aim is to train PhDs in an emerging research field.

New Horizons called up Lars Engwall, senior professor of business studies and chairman of the graduate school.

What is a national graduate school?

A national graduate school is unique in that it brings together doctoral candidates from several institutions and focuses on a specific subject area. In our case we have 60 PhD candidates from 13 Swedish institutions from Umeå in the north to Lund in the South. They are all pursuing the subjects of business studies and informatics.

Why are such graduate schools needed?

It’s a matter of attaining a greater volume for the programme. It’s better both economically and in terms of quality to give a course for 10–20 students than for four. Via the national graduate school, candidates can take part in a national network of professors, which is especially important for students from small institutions.

Another important advantage is that these schools can help develop a dynamic research field.

Why combine business studies and information technology?

Companies use computer systems both for internal communication and for contacts with the surrounding world. To be profitable and stand up to the competition, a company has to have a computer system that can flexibly manage information within and between various production and supplier components.

How is the graduate school doing?

Since we started in 2000 we’ve had a total of 145 students enrolled and produced 35 PhDs and 38 licentiate degrees. Some active graduates started an alumni association on their own initiative that now has nearly 50 members. Some of them just published a book with Routledge. That’s gratifying, and it’s a good sign that the graduate school is succeeding.

Hedvig Schriever is looking for greater depth.

Contract education

Uppsala University was awarded the National Board of Health and Welfare’s contract in four of six Swedish regions. The aim is to reach at least 2000 employees in positions of responsibility from Skåne in the south to Norrbotten in the north. It’s the University’s largest contract-education commission ever.

The national graduate school helps to develop the research field, according to Lars Engwall.
New Horizons 1:2012

It runs in the family: with teachers in the family five generations back, it was fairly clear what Johan Gärdebo would do for a living. But his stay in teacher education was short. His interest in history soon took over, and he changed his major, tailoring his own history programme.

“I’ve always been fascinated by history, narratives, he explains. To be able to place things in a context.

And he certainly has succeeded. And then some. After six years in academia, Johan is the spider in the web in a number of networks within and outside the University. He even lives in a collective.

If there’s a shortage of anything in his life, it’s time for himself. His commitment takes its toll. And Johan is truly a person burning to make a contribution—in a way that inspires others to do the same.

“Active student participation“ is the concept he has helped create. The idea is to give students an opportunity to take the responsibility for their own learning and that of others. They become more effective and impact their education more.

What does this mean in concrete terms?—Here’s how it can be done, explains Johan, and draws a schematic picture on the notebook he always carries around.

Imagine a senior student leading a weekly meeting with the new students, serving as a mentor. He or she doesn’t need to know the whole course, but how to pose academically relevant questions that advance the thinking—and ultimately guides the new students in analytical thinking. At the same time, the discussion leader is trained in leadership.

No, his passion for the principles and dynamics of learning has not abated, no matter how much of a history scholar he is.

What are the key components of effective learning?—Demands and support, says Johan instantly.

But on these two points higher education leaves a lot to be desired.

The sad thing is that student motivation often wanes in the course of studies.

Among active students

Text: Catarina Baldo Zagadou  Photo: Mikael Wallerstedt

Johan Gärdebo
Education: Historian (personal study plan, 307.5 credits thus far).
Age: 26.
Favourite period of history: “To solve the energy issue, we need to understand the 1800s.”
Also does: “Besides studying history full-time I’m adding courses in ecology and environment to broaden the perspectives. Then I’m really involved in education on equal terms, which is the basis for my commitment to Active Student Participation, the mentoring programme at the Faculty of Arts and Humanities Days”. Johan has also started a ska band called Skansen, where he sings and plays trumpet.
Exercises: Parkour, an exercise method based on making your way past obstacles as fast as possible with no aids. The obstacles can be anything from curbs to roofs. The training is not merely physical but also mental and philosophical.
Hidden talent: Can walk and read at the same time, fast.
Favourite nation: Västgöta. “Wicked lunches.”
Describes himself: “It’s easier for others to describe who I am. But I’ll say that I love to discuss with people.”
Makes me happy: “Being with my daughter Elsa, age 5. When she doesn’t do as I say.”
Makes me angry: “Being with my daughter when she doesn’t do as I say!”
Many start with high ambitions and drop out of the system along the way, give up. This doesn’t have to happen.

What goes wrong?
– Demands are low, support is weak.
Why is that?
– Because education is not a top priority. What really counts in academia is research. We need to change that.

Personally he’s more involved than ever. He eagerly relates how he plans to spread Active Student Participation.

It’s easy to see that the concept has huge potential. Especially in today’s reward system—the more credits granted, the higher the allocations. This favours universities that have many easy courses with lots of students, who in the worst case don’t learn much and are pleased with that.

Can that be turned around, at no extra cost…
– One resource we have a surplus of is students! We need a change in attitudes in higher education. It’s not the really number of teacher-led hours that determines quality.

In-depth learning, Johan stresses, that is, learning that lasts, that is edifying, nearly always involves being active yourself, preferably together with others. In seminars, for instance.

How do you study?
– I have a whiteboard in my room where I write everything I have to do in a 50-minute session When the session is over, I summarize it, super quickly. It’s very effective.

Just what’s next in Johan’s life is not certain. Maybe he’ll take a master’s, maybe do research.
– But I can also imagine developing different forms of learning. Building networks. Continue to work with Active Student Participation.

Then he adds:
– Or maybe I’ll add another programme. Studying is not a problem for me. I like it. I study a bit in the summer as well.

Title for skilled teachers

Now it will be easier be recognized as a good teacher at Uppsala University. The title of “excellent teacher” has been introduced for especially skilled teachers. The new guidelines apply across the whole University and entail that a permanently employed teacher can apply for the title, a level that is to distinguish the holder from the basic level the way ‘docent’ differs from PhD. The “excellent teacher” title also includes an automatic salary rise.

Many want to take summer courses

The design of the Universe, Game Design, The Age of the Dinosaurs… Uppsala University has broad and varied summer course offerings. And there is more interest than ever. 4,891 people have applied for 63 different courses. This is an increase of 48 per cent over last year.

The greatest demand is for the course “Using MATLAB” (a computer program). Other popular courses are “Holy Terror: The Role of Religions in Violence, Conflicts, and Conflict Management” and “Elementary Rhetoric”.

EDUCATION
New methods to find cures for pain

Long-term pain is a common condition, but pain is hard to treat. PhD candidate Anne-Li Lind is trying to find patterns of biomarkers in samples from pain patients, using new technology at Rudbeck Laboratory and the Biomedical Centre. She hopes the pain markers can lead to new treatment principles.

Anne-Li Lind’s research is part of the research programme at Berzelius Centre, which is to link together clinical needs with new technology developed at the University. She explains:

– Questions come from the clinic, and it’s a matter of coupling the questions with technology. It’s called “translational research”, research that comes from the clinic and goes via the lab back to the clinic.

For Anne-Li, this means she conducts her research in three different places. A normal workday can start with her picking up samples from patients at the Pain Clinic at University Hospital. She then packs the samples in a cooler and takes them to Rudbeck Laboratory. After the samples have been centrifuged, she starts an experiment with so-called PLA technology, which was developed at Uppsala. It’s a method that can find various proteins with great precision, and the technology has here been adjusted to find 47 proteins that have previously been linked to pain and inflammation.

In the afternoon she rides her bike to BMC for a meeting about how new experiments will be set up—this time with mass spectrometry. This is another, more open-ended, technology for finding proteins in the samples.

The research involves comparing a group of patients that are suffering from long-term pain with a group that are not.

– I’m trying to find one or preferably more molecules that are tied to long-term pain.

The patients included in her studies suffer from various conditions, such as fibromyalgia, sciatica, or back pain. Right now she’s busy investigating samples from patients with neuropathic pain.
This involves damage to the nervous system, following an injury, infection, or operation. It hurts to wear clothes or if something else touches their skin, explains Anne-Li. Some patients are treated with a spinal marrow stimulator, which is operated into the body and lessens pain. When patients turn off the simulator, the pain relief lasts up to 48 hours, which indicates that something happens in the body.

– I WAS MOVED BY THE INVISIBLE SUFFERING AND IMPRESSED WITH THE PEOPLE WHO LIVED WITH IT.

What interests us is what happens during this “lag time”. Is it a protein that is released or up-regulated? Or is it some entirely different type of mechanism? We want to understand more.

TODAY RESEARCHERS KNOW a great deal about pain in animal models and about inflammations. But it is still not fully understood how pain can linger in patients after an accident or an operation, even though the wound seems to have healed.

One theory is that a minor inflammation remains in the body. Another is that something happens in the brain and the spinal fluid.

In recent years interesting discoveries have been made by visualizing pain in images of whiplash patients taken with a PET camera. Anne-Li is tackling the same problem from another angle, looking for patterns, so-called biomarkers, in samples of spinal fluid and blood from pain patients.

– Biomarkers for chronic pain are an exciting and unexplored area of great importance, for instance for enhancing our understanding of the biochemistry of pain and to find new, more effective treatments.

THE PAIN CLINIC offers various types of treatment for pain today, such as mindfulness and physiotherapy. With a better understanding of pain new possibilities open up for new forms of treatment, but long-term pain is a complex condition, says Anne-Li Lind.

– We know, for instance, that sleep and general condition affect pain, so there are many different factors to be considered.

Anne-Li was trained in the Biomedicine Programme, a four-year education that prepares students for medical research. The idea of pursuing research on long-term pain first came to her when she was interviewing pain patients during her exchange year at Harvard University in the U.S.

– I was moved by the invisible suffering and impressed with the people who lived with it. It was powerful–their way of dealing with the pain. There was hardly any help available to them in healthcare. It felt wrong that researchers don’t know how this works in humans. That’s what originally triggered my interest.

➔

– This involves damage to the nervous system, following an injury, infection, or operation. It hurts to wear clothes or if something else touches their skin, explains Anne-Li.

PLA method:
An analytical method that can measure the number of different proteins in samples with great precision and sensitivity. The technology makes use of antibodies in identifying proteins.

Mass spectrometry: Determines the concentration, weight, and structure of molecules by sorting them by their mass and charge.
Berzelii Centre links new findings to technology needs

TEXT: ANNICA HULTH PHOTO: MIKAEL WALLERSTEDT

Chronic pain and Alzheimer’s disease are the central focus of research and development projects at Berzelii Centre in Uppsala. Uppsala University hosts the programme, which is to continue until 2017.

The commitment is funded by both Vinnova and the Swedish Research Council, in a pilot trial to combine excellent basic research and needs-driven research.

Participants come from nine departments in medicine, science, and technology, but also from the hospital and biotech companies. The concept has worked well, says the Centre’s director, Fredrik Nikolajeff:

– Today we have a good interface with the hospital that didn’t exist before. We work a lot with technology development, and it’s good to have someone who wants to use the technology. Our focus has always been on coupling medical needs with new technological findings and getting everyone together around the same table.

On the borderlines between technology, clinic, and industry, several collaborations have emerged. The biotech company Dipylon, for example, makes probes that are suitable for getting at biological fluid and measuring in place what is happening in the body. Today they are working closely with the Neurological Intensive Care Unit at University Hospital and the departments of technological sciences and analytical chemistry.

Another collaborative project involves Professor Ulf Landegren’s research team and the companies Olink and GE Healthcare. Together they have tested a new method for protein analysis.

– The new method holds the world record for sensitivity and yields results at lower concentrations. It may result in a new product, says Fredrik Nikolajeff.

Some of the collaborations that have emerged between different companies have shared research and development interests. The Berzelii Centre has been a good meeting place for them, too.

– We have a neutral platform, so its easier for companies to get on board. It’s more unconditional. And it’s simple to start research projects within the framework of our funding contract.

Berzelii Centre

The Centre involves nine departments in Medicine-Pharmacy and Science-Technology. University Hospital brings the Pain Clinic, Geriatrics, Neurological Intensive Care, Clinical Chemistry, and the Central Lab for Samples. Plus a number of biotech firms.

A total of nearly 70 people in 15 projects that have resulted in 150 publications and 12 PhDs.

The Centre turns over about SEK 200 million in a ten-year period. Funding comes from Vinnova and the Swedish Research Council. Uppsala University, University Hospital and participating companies also contribute various forms of support.
From degree project to burgeoning company with 15 employees and suppliers all over the world. That describes the Rolling Optics journey the last five years. The researchers behind the company, Axel Lundvall and Fredrik Nikolajeff, won the year’s Brain Apple, which is awarded to prominent innovations at Ångström Laboratory.

IT STARTED BACK in 2002, when Axel Lundvall wrote his degree project in microsystem technology. His supervisor, Reader Fredrik Nikolajeff, was directing research on optical materials, light diffusion, and nanotechnology in thin films.

It was on the basis of Axel’s promising findings that the idea emerged—to produce three-dimensional images in thin plastic foil. Since then they have built up one of Sweden’s most promising high-tech companies, with its own production facilities.

Rolling Optics produces thin films that are perceived as having a 3D structure. The largest area of application is transparent labels to be placed on various kinds of packaging. For instance, drug packages where the label is added for safety, or on exclusive hair-care products, where the label reinforces the brand.

– Since we’re the only ones who use this technology, we have a unique product that can’t be copied. This provides both authenticity and a visual value for our customers. A new area we’re looking at is marking products with extra high security, such as passports and ID cards, says Axel Lundvall.

He used to be the company’s research director and is now responsible for product development and new products.

Labels with optical effects

The Brain Apple

Uppsala University awards the “Vision” Prize to everyone who has been granted a patent for their ideas via the University’s innovation system. The “Brain Apple” statuette is given by Vice-Chancellor Eva Åkesson to a “visionary” who has commercialized an idea.

Support for companies pays off

Uppsala University’s holding company UUAB is doing well. 2011 saw three successful “exits” where UUAB sold its shares in prosperous research-related companies. The SEK 25 million in profit can now be invested in new companies.

– WE HAVE BEEN confirmed in our strategy—every year to invest a small sum in several newly started companies, says enterprise manager Lars Jonsson.

Via the unit UU Innovation within the University, researchers get help with patent applications and starting companies. They get free patent advice, business advice, and help with financing sources.

– Then it’s up to the researchers themselves whether they want UUAB to pay for the patent. If they do, we gain the rights to the invention and 25–40 per cent of future income, says Lars Jonsson. UUAB can also invest money and become part owner if they start a spin-off company. Once the company has grown strong enough to attract other buyers, it’s time for UUAB to step aside.

– We’re not supposed to speculate. Rather when we see a good chance to jump off with a good return on our money, we do.

One example is the biotech company Olink, started by Professor Ulf Landegren in 2004. The company has grown rapidly, and recently the industrialist Bengt Ågerup became the principal owner of the company. Olink’s subsidiary Halo Genomics was acquired by an American company.

– In both of these companies UUAB was in from the very beginning, from conversations with the researchers about the business concept to them standing on their own legs. Both companies chose to use the valuable support of our business incubator Uppsala Innovation Centre, UIC.
A job at the Swedish Chamber of Commerce in New York and an assignment to start activities for Uppsala University alumni in the U.S. Both a good qualification for the future and a fantastic experience, says Carole Ginman, the first recipient of a new fellowship jointly established by the Chamber of Commerce and Uppsala University.

Carole Ginman had just completed her degree in economics when, after a few months of internship at a PR agency in Stockholm, she saw information about the new fellowship on the Web. She applied and was the delighted recipient. When I meet her on the 20th floor at the Swedish-American Chamber of Commerce offices on Lexington Avenue, she has finished her first month of the year she will spend here.

– Absolutely fantastic! I don’t think it has sunk in yet. Just the experience of being here. I love it—it’s wonderful, she says.

When word came, she was at the Stockholm Open, where she was moonlighting. It was a bit chaotic to keep on working in the midst of the exhilaration. She was to move from home directly to Manhattan—and not to be a waitress, but to take a career-promoting job at the Swedish Chamber of Commerce.

Why were you the one to be chosen, I ask, assuming there was a justifying statement.

– I have to admit that I can’t remember. During the ceremony with more than 100 people I was fully focused on figuring out what to say in my thank you speech, she says and laughs.

American Friends

A not-for-profit organisation that supports research and education at Uppsala University. It is tied to the Swedish Embassy and the Swedish Chamber of Commerce in New York.

The new fellowship was instituted by Uppsala University in collaboration with the Swedish Chamber of Commerce on the initiative of American Friends. The fellowship recipient gains valuable knowledge about U.S. business and Swedish-American relations, but also an opportunity to contribute his or her knowledge to the organisation.
CoLLABoRATIoN

BESIDES HER ECoNoMICS degree Carole Ginman studied media and communication studies at Uppsala University and wrote a paper on branding in social media. She’s drawing on that now that she’s in charge of creating the Chamber’s Facebook page. She is devoting 75 per cent of her time to communication and marketing of the Chamber’s work and events.

– It’s a fun and creative job. What’s more I get to meet so many exciting people at receptions and events. You truly understand the importance of networking and making a good impression.

During the remaining 25 per cent of her time she is helping the organisation American Friends of Uppsala University to establish alumni activities in the U.S. Lots of Americans have studied at Uppsala, but today there’s no association to bring them together. There are also lots of Uppsala people who live in the U.S. The goal is to arrange get-togethers each spring and autumn on site in the U.S.

– Up till now alumni can join the University’s alumni network, but few of them have the opportunity to go to Sweden to take part in various events. That’s why it’s fun to be involved in starting activities here, says Carole.

THERE’S A LoT she wants to find time for this year, apart from work. Recently she watched the New York Giants win the Superbowl in American football. Carole used to think the sport was hard to understand, but it’s getting more and more fun the more she learns.

– And we won! says Carole and laughs when she realizes the just said “we”. The atmosphere was incredible. Not just during the game, but afterwards, in the streets.

YOU TRULY UNDERSTAND THE IMPORTANCE OF NETWORKING AND MAKING A GOOD IMPRESSION.

Welcome contribution to MS research

Research on MS, multiple sclerosis, at Uppsala University has received a welcome resource boost through a SEK 500 000 donation. It’s the industrialist and former Uppsala student Lasse Tenerz who wanted to support research in this way.

AT THE UNIVERSITY hospital in Uppsala a new method is being used where multiple sclerosis (MS) patients are treated with stem cell implants.

– The treatment is effective, but risky, so it’s only given to patients with the most aggressive form of MS, says Reader Jan Fagius, who is chief physician at the Neurological Clinic.

– With more knowledge of how the immune defence reacts to the treatment, we could use the method with more patients.

One study is underway now, in collaboration with the Neurological Clinic and the Department of Immunology, Genetics, and Pathology. Now this research can move forward more quickly, thanks to the SEK 500 000 from Lasse Tenerz.

THE MONEY WILL be used to employ a part-time lab assistant, which is a great relief for Joachim Burman, who alongside his PhD research also works as a physician.

– We are truly delighted to receive this donation, which will support us in our work to better understand the complicated immunology that underlies multiple sclerosis. We hope the findings will lead to enhanced treatment and better quality of life for those suffering from the disease, says Joachim Burman.

Lasse Tenerz has a loved one who suffers from MS and wanted to support research. He saw a TV feature about stem cell transplants and therefore contacted chief physician Jan Fagius.

– I wanted to support research, but first I needed to make sure the money would really make a difference—and it turned out there was a need to reinforce the lab staff.

Want to make a contribution?

Many urgent projects and important research being conducted today were made possible thanks to benevolent donations. Contact Uppsala University’s fund-raiser, Thomas Fredengren, to discuss how you want to help out and how your contribution can be put to good use.

E-mail: thomas.fredengren@uadm.uu.se
Lots to discover

TEXT: ANNICA HULTH

Coins from the 1600s, mummies, rare plants, dinosaur skeletons…
More and more people are discovering Uppsala University’s
museums. Above all, the number of young visitors is on the rise.

--WE’RE CLEARLY seeing an upward trend in visitors. We also have more schools and
preschools coming, which is truly gratifying, says Jesper Bohm, information officer
at Museum Gustavianum.

The museum, housed in the University’s oldest building, Gustavianum, has
both permanent and temporary exhibits.

The Museum of Medical History has
also noticed the growing interest. In 2011
there were 500 more visitors than the
previous year.

--Our lectures once a month are often
well attended, and more and more schools
are visiting. Our collaboration with the
Museum of Psychiatric History is also a
boost, says director Eva Ahlsten.

In the Linnaeus Garden the visitor
count grew by 3000 and in the Botanical
Garden by 22 000 in 2011. A trend can be
seen: more and more children are visiting
The Linnaean Gardens of Uppsala.

At the Botanical Garden we have
been inviting preschools to plant summer
flowers and tulip bulbs since 2007. We
have also worked with theme weeks for
schools. We now have four times as many
children visiting the Botanical Garden
since 2007, says information officer Lotta
Saetre.

1 Museum Gustavianum
Displaying
Augsburg Art Cabinet, Viking Age finds,
the University’s history, mummies and
much more.
What’s going on?
Exhibit about the Etruscans to June 3.
www.gustavianum.uu.se

2 Coin Cabinet
Displaying
Sweden’s first coin from the 990s,
world’s heaviest coins (16 kilos),
world’s first paper currency from the
1660s, and much more.
What’s going on?
The permanent exhibit is often visited
by teachers and students. The course
“Coins, economics, and propaganda” is
given here.
www.myntkabinettet.uu.se
Why celebrate Strindberg this year?
—To my mind he is one of our very great-est dramatists and prose writers. What’s special about Strindberg is that everything he did was such an expression of his times. Through him we learn a lot about European society in an age of change. What’s more, he’s very topical today. His plays and prose works also work well with people in the 2010s.

Any highlights of the year?
—Stockholm City Theatre is delivering highlight after highlight. The Ghost Sonata at the Royal Dramatic Theatre is another. We in the Strindberg Society notice that things are happening all over the country – exhibitions, lectures, etc. – thanks to heroic librarians and culture consumers.

—The Council for Cultural Affairs has been granted SEK 200 000 to construct a national Web page, but otherwise there are no state subsidies. There won’t be any big Strindberg festival, like the Linnaeus Tercentenary, but activities are bubbling all over the country, which makes us happy.

Strindberg studied at Uppsala from 1867 to 1872, but he didn’t like it?
—He has said both this and that. In a letter to a Stockholm friend he says he can live free in Uppsala, so he also had something good to say. I think he was homesick. He was only 18 when he came here, and an typical Stockholmer. One thing that put a damper on his life was that his father was so frugal—and the money was to cover food, firewood, and his nation fee. So he led a very Spartan life.

—But he had friends here, several of whom he stayed in touch with. One of them married his sister. He was also active in establishing an Old Norse society. He loved Old Norse things.

Where in Uppsala did he live?
—In several places in town. His first digs were off Odinslund, in a building that was later rased. He also lived in Övre Slottsgatan, on the Main Square, and in S:t Olofsgatan roughly by the City Library. He lived in the attic above Ofvandahl’s for a while, in a room he called “the coffin”. He was trying to find a place that had a decent landlord and where he wouldn’t be too cold.
Mentoring adds new perspectives

TEXT: MARIA LEIJONHIELM PHOTO: MIKAEL WALLERSTEDT

Mentoring is becoming more and more popular at Uppsala University. Often it’s alumni who return to the University to prepare students for working life. One of them is Ann-Charlotte Eklund, who has acquired new perspectives in her encounters with students.

FIVE YEARS AGO Ann-Charlotte Eklund took her master’s degree in engineering at Uppsala University. Her specialization was materials chemistry. She didn’t think she would become a consultant in project leadership and development at the technology company Semcon.

The very fact that chance largely determines where you wind up in working life, plus that your employer will not be interested in all of your knowledge, is something she wants to share with today’s students.

– I wanted to be a mentor primarily because I could have used one when I was a student, she says. When I was almost finished with my master’s, I had a good knowledge of my special field, but working from eight to five involved much more than sitting and calculating resistance.

– What I wasn’t prepared for was that mentoring would mean so much for my personal development. Talking to students adds perspectives also to my own work and my own choices.

FOR THREE YEARS mentoring has been taking place at the Faculty of Science and Technology, with 2–3 mentors and 5–6 students. Ann-Charlotte has been involved from the beginning, and each year students and alumni are showing more interest.

The groups are composed to ensure that the angles and questions on working life to come will be as broad as possible.

The first meeting is about expectations and choices. How do the students envision the future? What choices have they made and what choices are they facing?

What choices did the alumni make? How did you get your first job? How did you wind up where you are now?

– As a mentor, it’s an advantage not to have been away from your studies too long, says Ann-Charlotte. I still remember...
What do you get out of being a mentor? What can you contribute?

--I'VE BEEN in this line of work for nearly 30 years, so it’s extremely stimulating to hear what young students think about the profession. It’s also highly satisfying to feel that I can contribute to a realistic picture of what this work involves. I’m quite interested in social psychology, so I also find it interesting to hear how values change with time. This is all volunteer work.

--The students ask lots of interesting questions that lead to interesting discussions. We usually sit at a café for a couple of hours a couple of times per semester. It can be about how you cope and how you deal with the awful things you see, what situations you can encounter or a worry about making the right call and giving the right help. It varies a bit depending on how far they have come in their education, but it’s focused on the experience and management of what you run into as a practicing professional psychologist.

--It's Fun to meet new students and get an idea of how the education has changed since I was a student. Today there’s a lot attention paid to the legislation of the European Community and immaterial law in the new communication media. Today's students have entirely different experiences than in my day. It’s more likely than not that they will study outside Sweden for a semester, something we never thought about.

--As a mentor I can give them some insight into how everyday working life functions for a jurist. They get an idea of what it’s like at different workplaces. My students come to Vattenfall power company and meet my colleagues. The also have a chance to shadow me in a courtroom or at internal meetings. That’s largely my orientation as a mentor, to provide students with concrete insights into my everyday work duties.

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Marie-Louise Rasch, licensed psychologist and consultant.

Christer Ruden, corporate lawyer at Vattenfall.
They produce drinking water with solar energy

TEXT: ANNELI BJÖRKMAN PHOTO: PATRIK LUNDIN

Last autumn they won the Innovators for the Future Prize. Their method for producing drinking water using solar energy attracted much attention even outside Sweden. Now the two Uppsala alumni are investing in condensation technology that protects against rust and moisture.

THE PRIZE WAS awarded to Fredrik Edström and Jonas Wamstad by the Skapa (Create) Foundation. They were named 2011 Innovators for the Future and given SEK 75 000. With their method you can condense steam into running water with the aid of thermal energy. Thermal energy can be generated from the sun or be extracted from other processes.

– Our method is based on humidity reaching such supersaturation that water drops form, which can be done using various energy sources, such as heat. The technique is extremely easy to construct, and from inexpensive materials, says Fredrik.

Clean drinking water is a dwindling resource in many places, and the possibility of producing water even in arid zones created an international stir. Gulf News wrote about the Uppsala engineers’ innovation, and Fredrik and Jonas took the first steps towards launching their company Airwatergreen globally. They also took part in the international environmental conference Responding to Climate Change 2012 in South Africa in November.

– WE WERE FLOODED with calls for a while. But it’s a challenge to run for the right ball at the right time, says Fredrik. Right now the water project is further in the future.

Instead they are concentrating on the dehumidifying market. There’s a market established in Sweden and the Nordic countries and a need for energy efficiency, says Fredrik.

They have sold two trial machines to National Property Board and been asked to dehumidify boats and warehouses.

– The dream scenario is to get a developmental project with Ikea, for instance, where we dehumidify their warehouses around the world, says Fredrik.

– It’s a Swedish company with resources that works hard on environmental issues.

Meeting place for researchers

UPPSALA UNIVERSITY is hosting more and more academic meetings. In 2011 Uppsala University hosted 35 academic congresses and conferences. The number of participants was 7 300, which is an increase of 25 per cent over the previous year. Akademikonferens, which provided the statistics, is Uppsala University and the Swedish University of Agricultural Sciences’ joint unit for professional assistance with conferences.

www.akademikonferens.uu.se

Alumni network growing abroad

UPPSALA UNIVERSITY ALUMNI work all over the world. In many countries the groundwork has been laid for local chapters of alumni, including China (Beijing and Shanghai), the U.S., and Vietnam. International alumni are important “ambassadors” for Uppsala University, and alumni help build the University’s brand far beyond the borders of Sweden.

New Royal Academy members

THREE UPPSALA RESEARCHERS were recently elected to the Royal Swedish Academy of Science in biological sciences and the humanities: Per Ahlberg, professor at the Department of Organism Biology, Evolution, and Evolutionary Biology; Kerstin Lindblad-Toh, professor of Comparative Genomics at the Department of Medical Biochemistry and Microbiology; and Sven Widmalm, professor at the Department of History of Science and Ideas. The Royal Academy of Science has c. 420 Swedish and 175 foreign members.
Young teens get to try out doing research

How is research done? And what can research be used for? Some 600 of Sweden’s lower-secondary pupils are invited to take part in the Nobel Museum’s research project Research Aid, which is arranged by Ångström Laboratory this year.

IN THIS YEAR’S Research Aid, the Nobel Museum’s research project for pupils in grades 7–9, the Nobel Museum is collaborating with Uppsala University, more specifically the Section for Nanotechnology at the Department of Engineering Sciences.

Professor Maria Strømme and nano researcher Johan Forsgren are leading Project Gold Rush, where pupils have a chance to do research and produce nanoparticles of gold.

What’s fun about gold nanoparticles is that they can be identified with the naked eye in a liquid, as the liquid changes colour depending on the size and shape of the particles. It’s a property that can be exploited in different contexts, such as discovering macromolecules or making efficient solar cells. The idea is that this can be useful also for researchers or for society at large, says Johan Forsgren.

THE PUPILS DO the lab work at their schools and send in their experiments to the Section of Nanotechnology and Functional Materials. During the project they also learn how to write research protocols and participate in research posters.

The project concludes with a contest for the best posts and reports of research findings. The winners will be presented at the Nobel Museum on 7 December and will be awarded tickets to the Nobel Prize conferment ceremony.

Meeting of religions

IF WE HAVE a religious faith, how do we then relate to people who have a different religious faith? Mikael Stenmark, professor of philosophy of religion, discusses this in his new book Religioner i konflikt (Religions in Conflict) about relations between Christians and Muslims.

– We might even be able to create a channel between academic thinking and the conversations we all have– at the coffee table, laundry rooms, day-care vestibules, and bedrooms.

The Humanities Blog is hosted by SALT–Forum for Advanced Studies in Arts, Languages and Theology in collaboration with Uppsala Nya Tidning.

The blog window is open

DO YOU WANT to follow the thoughts of humanities scholars and social scientists? The Humanities Blog is a window on the humanities and social science at Uppsala University. Every week a new blogger writes about new research.

– Sadly, humanities and social science scholars don’t always reach out with the exciting thoughts and perspectives their research can present. We’re trying to fix this with the Humanities Blog, writes one of the bloggers, Maria Liljas Stålhandske, a psychology of religion scholar.

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The Gold Rush

The Gold Rush starts after summer break with a kick-off conference for lower-secondary teachers in May at the Nobel Museum. The Foundation for Strategic Research and the host university, this year Uppsala University, fund the project. www.forskarhjalpen.se
LAST AUTUMN I turned forty-seven. I thereby just passed the exact point in life when the statistical risk is greatest for developing severe depression. That time occurs right after your forty-seventh birthday. This fact surprises many people. In their forties people are normally in good health. But perhaps ailing parents and divorces play a role, and many 47-year-olds have teenage children...

Occasionally another explanation is given however. When you’re younger, setbacks are paired with the sense that you have lots of unexploited potential. For those approaching fifty, it’s harder to maintain the notion of unplayed trump cards. At the same time many retain the ideals about social and material success that we often uncritically absorb from our surroundings. The conflict between ideals and reality is frustrating. When we get even older we get better at creating a distance between us and such ideals, and we’re less likely to evaluate our lives on the basis of values other than those we have chosen ourselves. It’s plausible that, for men at least, the happiest age is between sixty and seventy, at least for those still in good health.

This explanation conforms well with certain findings from so-called “happiness research”, which is conducted by psychologists and neurologists, among others. In brief, the findings say that much of what many people strive for, like status and higher income, does not make us one bit happier. Granted that we are talking about is ultimately personal satisfaction, many of our strivings are therefore irrational. But that doesn’t mean they are inexplicable. Evolution has favoured characteristics that enhance individuals’ chances of passing on their genes. For a long time it has been a matter of willing yourself to struggle on impatiently instead of being satisfied with what you have.

Today, however, the survival value is limited, considering the consequences of the resource-demanding lifestyle that impatience leads to. Perhaps it’s time for society at large to appropriate the sixty-year-old’s capacity to unmoor themselves from old ideals so that the younger parts of the brain can finally subdue the older ones.