



## eLIFE – news on life at LIFE

Thursday 18 December 2008

The next issue of eLIFE will be published on 8 January 2009

**The editorial team would like to wish everyone a Merry Christmas and a Happy New Year**

Email to the editors: [elife@life.ku.dk](mailto:elife@life.ku.dk)

Final deadline for editorial changes is Wednesday before publication of eLIFE on Thursday.

Editorial changes may occur in relation to the online newsletter.

As regards links in the newsletter, please refer to the Danish online version at the faculty's website  
[http://www.life.ku.dk/Maalgruppe/medarbejdere/life\\_internt/nyhedsbrev.aspx](http://www.life.ku.dk/Maalgruppe/medarbejdere/life_internt/nyhedsbrev.aspx)

Gudrun Lau Bjerno, Editor, Communications, [glb@life.ku.dk](mailto:glb@life.ku.dk)

## Life at LIFE

### **Celebrating the 150<sup>th</sup> anniversary of 'On the Origin of Species' and the bicentenary of Darwin's birth**

In 2009, it has been 150 years since Darwin published his seminal work 'On the Origin of Species', and 12 February 2009 marks the bicentenary of his birth. To celebrate this, LIFE is organising a living exhibition on the origins and evolution of the species which he cultivated.

Darwin's principal work, 'On the Origin of Species', is probably the scientific work which has had greatest influence on how we perceive ourselves and our surroundings. Basically, all modern basic research and biological research are based either wholly or partly on the theory which Darwin presented 150 years ago.

In 'On the Origin of Species', Darwin wanted to convince his contemporaries that species are not constant, as

God originally created them. They can change in appearance and function over time as a result of evolution. He suggested that the mechanism behind these changes is natural selection. That inherited diversification which gives individuals an advantage over the course of many generations will increase in the populations and that it can eventually lead to significant changes that can lead to new species.

To convince his readers that natural selection really could change species, Darwin started his book with a chapter on man-made selection in domestic animals and cultivated plants. He had for many years been gathering evidence to support his theory, and one of the subjects which he concentrated on was breeding animals and plants. He discusses exhaustively the enormous and sometimes grotesque variation that can be found within breeds of domestic pigeons, and how the shapes have developed from a simpler original form, the rock pigeon. He also emphasises the massive variations which have occurred in cultivated plants, for example in dahlias and cabbages. In dahlias, considerable variation has been bred in terms of both shape and colour, although not of the leaves, while the opposite is true of cabbages. The reason, according to Darwin, is that variation is emphasised in the characteristics which we like or use, in other words the flowers of dahlias and the leaves of cabbages, but that the characteristics which we do not select are more similar to the original shapes of their wild forefathers.

To celebrate the Darwin anniversary, LIFE's gardeners and Thure Hauser, a plant ecologist at Plant & Ecology, will in the course of the spring transform some of the beds in LIFE's garden to a living exhibition of the origin of the cultivated species. We will show examples of cultivated plants and their development, including a number of the species and variations which are mentioned in 'On the Origin of Species'. Some of the species have wild original forms which grow wild in Denmark and are considered important resources for future plant breeding. On the other hand, other wild original forms cause problems when they spread themselves invasively in the Danish countryside. We will also show examples of the different plant types which have been developed from these wild species over the years, plants which enrich our lives in terms of nutrition, taste, scents and beautiful shapes.

We look forward to seeing you in the garden in the spring.

*Thure P. Hauser*

*Gudrun Lau Bjerno, [gjb@life.ku.dk](mailto:gjb@life.ku.dk) – latest update 18 December 2008*

### **LIFE's storyteller has several irons in the fire**

All through 2008, LIFE has published our senior gardener Kim Greiner's accounts of the history of the faculty and the garden, how silk came to the Faculty Gardens from the Far East, the horse slaughterer Bjørn Nørgaard, the mistletoe plant, hortensias and fossilized trees – just to mention some of the themes which have been covered over the past twelve months. They have been written in a very personal and narrative style, often from a slightly unusual angle and with a shrewd eye for details.

eLIFE's readers have really enjoyed these articles. They feature among the most visited pages in the traffic statistics for eLIFE. It is therefore good to know that Kim Greiner will continue contributing to eLIFE in 2009. In this, the last issue for 2008, we include a portrait of the storyteller.

### **Qualified forester**

It wasn't written in the stars that Kim Greiner would be so interested in writing.

As he says himself:

"During my first few years at school, my school reports always said: 'A nice boy, but not good at spelling'." Kim was dyslexic and spent his fourth and fifth school years at a school for dyslexics. Consequently, he never sat the lower secondary school leaving exam or the upper secondary school leaving examination. Nevertheless, after secondary school, Kim Greiner chose to become a forester's apprentice at Bregentved Forest District, at Asmildkloster agricultural school and in Løvenholm and Corzelltse Forest Districts and finished his training at Skovskolen in 1967 as a forester.

After various jobs in management positions and now also armed with a diploma in business studies, Kim Greiner was employed as head gardener at the Royal Veterinary and Agricultural University in 1990. After 14 years managing the outdoor gardeners, he stepped down four years ago as manager and instead became senior gardener.

"After almost 40 years in management positions, I now enjoy the feel of soil under my nails, giving tours, holding talks and writing. I have never enjoyed going to work as much as I do now, and it has given my life a real boost," he says.

### **Lecturer and travel writer**

In his spare time, Kim Greiner is something of a globetrotter. Together with his wife Birgitte, he has visited 40 different countries on six continents. This wanderlust has resulted in numerous articles – or travel stories as he calls them, of which several have been printed in various media – and talks which he gives all over Denmark. In addition to travel talks, Kim Greiner also gives one about the Faculty Gardens and another about Nørrebrogade. There is a bit of a funny story to the last one, but you can read about it and much more at [www.kemg.dk](http://www.kemg.dk).

### **Popular guided tours of the gardens**

The Faculty Gardens are well-known in certain circles, so the free guided tours are extremely popular. Over the summer, young and old meet at the fountain on Bülowsvej before moving into Bindsbøll's beautiful main building with the main lecture hall and then out for a detailed tour of the garden's flowers, trees and shrubs, laced with a wealth of interesting and amusing stories. Senior Gardner Kim Greiner and his colleague Lars Elver Birck Pedersen from Green Services give these tours. And during the anniversary year they gave more than 30 of them.

It is also possible for associations and other smaller groups to book tours for a small fee. In 2008, the number of these was about the same as that for the free guided tours; in other words, Green Services has given more than 70 guided tours in 2008 – which is pretty impressive!

### **Natursyn**

In August, a journalist from DR's Natursyn radio programme, Jens Olesen, recorded Kim Greiner while being shown around and hearing stories about the Faculty Gardens. The broadcast, which was part of the Natursyn programme series, must have been heard by a lot of people in Denmark because people are still travelling a long way to see the garden which they heard about in the programme.

You can listen to the programme (in Danish) at

<http://www.dr.dk/P1/Natursyn/Udsendelser/2008/08/05133400.htm>.

*Gudrun Lau Bjerno*

*Gudrun Lau Bjerno, [gib@life.ku.dk](mailto:gib@life.ku.dk) – latest update 16 December 2008*

# Announcements

## **Nominations for the Research Communication Award 2009**

The Research Communication Award Committee hereby invites nominations for the Research Communication Award 2009. [See the notice](#) (in Danish) – or read more at [www.fi.dk/forskningskommunikationsprisen](http://www.fi.dk/forskningskommunikationsprisen).

The deadline for nominations is Monday 12 January 2009 at 12 noon.

*Gudrun Lau Bjerno, [gib@life.ku.dk](mailto:gib@life.ku.dk) – latest update 18 December 2008*

## **Copenhagen Marathon 2009 – free entry for students**

It is now time to start training for the Copenhagen Marathon on 24 May 2009.

Once again, the club Sparta and Copenhagen Marathon's main sponsor, the bank DnB NOR, and media sponsor, Politiken, have the pleasure of offering students pursuing studies entitling them to a grant the opportunity of entering the Copenhagen Marathon free of charge.

You can already register now at [www.sparta.dk/studerende](http://www.sparta.dk/studerende) (access code: stud).

### **Free training**

To run 42.195 km you need a lot of kilometres under your belt and you need to do at least one long run a week. It is much easier to do these long runs during the winter months if you join a group of runners. Sparta is therefore offering free training sessions for anyone wanting to join up until the Copenhagen Marathon 2009. Come and run every Sunday – we start from Østerbro Stadion at 9.30 am. Download the training plan and read more about group training at [www.copenhagenmarathon.dk](http://www.copenhagenmarathon.dk)

### **Test how fit you are as you go**

When training for a marathon, it is a good idea to set yourself a few goals as part of your programme. At the same time it provides much needed variety to include several test runs in the training schedule. Sparta gives you the opportunity to test your running level on different distances at the Nike Marathontest 1-2-3 which is being held on 1 February (10 km), 8 March (15 km) and 19 April (21.1 km). Read more about the Nike Marathontest 1-2-3 at [www.sparta.dk](http://www.sparta.dk).

### **Join the training on Funen and Jutland – start your own running team with your fellow students**

If you are studying in Jutland or on Funen, or if you just want to participate in Sparta's group training or the Nike Maratontest 1-2-3, you can still join in.

Download and follow the Sparta training programme and you will be well on your way. At [www.copenhagenmarathon.dk](http://www.copenhagenmarathon.dk) you can see the runs being held in your area which you can use as test runs during the winter and spring.

### **Inform your fellow students**

Please forward the links to your fellow students and help spread the word.

**Dorte Vibjerg, Sparta running coordinator, [vibjerg@sparta.dk](mailto:vibjerg@sparta.dk)**

*Gudrun Lau Bjerno, [gib@life.ku.dk](mailto:gib@life.ku.dk) – latest update 16 December 2008*

## Grundfos Challenge

Christmas is approaching, which means that it is almost your last chance to register your educational institution for the Grundfos Challenge. Please register by the end of this week.

We have previously announced that we are holding a pre-event for Challenge participants on Friday 6 March. Since then however, we have decided to shift the pre-event to Saturday 21 March immediately before the Challenge week, among other things to save students an extra trip to Grundfos. This means that participants must arrive at The Poul Due Jensen Academy one day earlier than originally planned. We are no longer calling the day a pre-event, but it will provide the same information and activities for participants as previously planned.

Remember that the deadline for registering the individual participants is 16 February 2009. You can read more about the deadlines and selection criteria at [www.grundfos.com/challenge/contact](http://www.grundfos.com/challenge/contact) and about Grundfos Challenge 2009 at [www.grundfos.com/challenge](http://www.grundfos.com/challenge).

**Dorte Maach, Grundfos, [dmaach@grundfos.com](mailto:dmaach@grundfos.com)**

*Gudrun Lau Bjerno, [glb@life.ku.dk](mailto:glb@life.ku.dk) – latest update 16 December 2008*

## Education

### FN's Newsletter for December 2008

Christmas is fast approaching and a new year is just around the corner. 2009 will be a year in which particular focus will be on the education political work.

Below is some news (in Danish) about what is going on in FN – your academic association:

[FNs Nyhedsbrev December 2008](#)

In this issue, you can read about:

- News from the chairperson
- New FN board
- KU's green student fund
- HAPPY NEW YEAR
- Grant

On behalf of the FN board

Jens Møller Christoffersen

**Jens Møller Christoffersen, Union of Natural Ressource Students, [jensmc@dsr.life.ku.dk](mailto:jensmc@dsr.life.ku.dk)**

*Gudrun Lau Bjerno, [glb@life.ku.dk](mailto:glb@life.ku.dk) – latest update 16 December 2008*

## **Introduction course for PhD students at LIFE**

This course will give you an introduction to life as a PhD student at UC-LIFE. You will get an overview of the study programme, the skills and competencies necessary to become a mature and independent researcher, and an insight into balancing the challenges of your career with the rest of your life.

Date: 23-27 February 2009

The course will focus on:

- Career planning – your Personal Development Plan and Learning Needs
- Oral presentation techniques
- Scientific writing
- Intellectual property rights and patents
- Project management
- Philosophy of science and good scientific practice
- Collaboration with your supervisors
- Aspects of PhD administration

You will work on your own Personal Development Plan during and after the course. As part of the assignment you will discuss your development plan with your supervisor, so please make an appointment to meet with her/him 1-2 weeks after the course.

The course will also be a platform for networking with new PhD students from different departments at UC-LIFE and other universities.

Teaching staff: Annette Ersbøll, Sofie Kobayashi, Brian Grout, Lawrence White, Lars Holm Rasmussen, and Claus Jarløv. The teachers on the course have been chosen from specialists at UC-LIFE and professional consultants.

Venue: UC-LIFE (Frederiksberg) and Rådvd Vandrehjem (Lyngby Danhostel), Rådvd, just North of Copenhagen). The participants will be lodged at Rådvd Vandrehjem during the course.

Fee: None – all expenses are covered.

Number of participants: Max. 20.

Registration deadline: 1 February 2009.

Course credit by approval of report: 2 ECTS.

Language: English.

Course leaders: Sofie Kobayashi, Brian Grout and Lars Holm Rasmussen.

Registration and further information: [introduction-course@life.ku.dk](mailto:introduction-course@life.ku.dk).

This course is organized by the CRS-secretariats on behalf of the Graduate School of Life Sciences.

*Gudrun Lau Bjerno, [gib@life.ku.dk](mailto:gib@life.ku.dk) – latest update 12 December 2008*

## Staff news

### **Professor John R. Porter in the 2009 edition of Marquis's 'Who's Who in the World'**

Member of IPCC (Intergovernmental Panel on Climate Change) professor John R. Porter, Department of Agriculture and Ecology, is being included in the 2009 edition of Marquis's 'Who's Who in the World'.

Inclusion is limited to those who have demonstrated outstanding achievements in their own fields and who have thus contributed significantly to the improvement of contemporary society.

Since 1899, 'Who's Who in the World' has included the biographies of millions of leaders and achievers from around the world and from every significant field of endeavour. The list covers:

- Managers of large corporations
- Directors of notable libraries
- Heads of educational, religious, scientific, humanitarian, and professional organisations
- High-ranking military officers
- Heads of stock and commodity exchanges, brokerages
- Representatives of economic associations, bank directors
- Philosophers, social scientists
- Directors of energy agencies
- Distinguished professors, scholars
- Writers, musicians, artists, actors, dancers, filmmakers
- Eminent scientists, physicians, judges, attorneys
- Social activists, labour leaders, notable state and territory officials
- Royalty, ceremonial officeholders, and leaders in exile
- Heads of state
- Ambassadors, ministers
- Eminent government officials
- Internationally famous entertainers

Listing is restricted to about 60,000 persons worldwide of which about 400 are from Denmark in the 2009 listing.

*Gudrun Lau Bjerno, [gib@life.ku.dk](mailto:gib@life.ku.dk) – latest update 16 December 2008*

## Research

## **Customised breast cancer treatment on the way**

Today, many women in Denmark with breast cancer are offered a standard treatment with chemotherapy. Only half the women find that this treatment works. Therefore, Danish breast cancer researchers from LIFE have teamed up with Danish breast cancer doctors and leading gene researchers from China to develop methods so that in future it will be possible to offer customised treatment which suits the individual breast cancer patient. To support this, the Danish National Research Foundation has made a new basic research centre available to Professor Dr Nils Brünner from LIFE who is heading the collaboration.

[Read the press release](#) (in Danish)

*Gudrun Lau Bjerno, [gib@life.ku.dk](mailto:gib@life.ku.dk) – latest update 17 December 2008*

## **DKK 700 million for independent research**

The Danish Councils for Independent Research (DFF) has just granted DKK 700 million to researchers at Danish research institutions. In granting the funds, DFF has made a special effort to help female researchers attain senior positions within the research community.

Four hundred researchers and research groups have recently received funds from DFF. In all there were applications for almost DKK 6 billion. The funds have been sought by individual researchers, and they are awarded on the basis of quality in competition with other researchers in Denmark. DFF supports research within all fields.

Chairman of the Board of Directors for the Danish Councils for Independent Research, Jens Christian Djurhuus, says:

"While we would like to support many more projects than is currently possible, it is wonderful seeing the funds being distributed to researchers. Independent research stands the biggest chance of resulting in new scientific breakthroughs which can benefit Denmark. The grants provide free scope for specific projects which are of a very high research quality."

### **Special focus on female researchers**

In connection with the ordinary distribution of grants in 2008, DFF has made a special point of supporting the career opportunities of female researchers. The idea of the support is to give bright researchers who have come quite a long way in their careers the opportunity to get the research management experience required for them to qualify for employment as professors.

"It is incredibly important that we use our combined talents. The trend for women to disappear from research once they have completed their research programme must be reversed. This means that we need to give clever female researchers the opportunity to pursue a career in research so that we can do something about the fact that only 12 per cent of all Danish professors are women," says Jens Christian Djurhuus.

DFF has recently appointed ten female heads of research:

- Associate Professor Trine Bilde: Social spiders (natural science)
- Assistant Professor Eva Bøgh: Clean drinking water in the future (technical science)

- Assistant Professor Pernille Carstens: The Old Testament as a cultural memoir (humanities)
- Assistant Professor Charlotte Christiansen: Optimising investments (social science)
- Senior Researcher Birgitte Holst: Treating obesity and diabetes (health science)
- Assistant Professor Charlotte Fløe Kristjansen: Nature's smallest building block: particles or strands? (natural science)
- Assistant Professor Lisbeth Mølgaard Ottosen: Goodbye to heavy metals in polluted soil and salt in cultural heritage (technical science)
- Consultant physician Eva Prescott: Running from chronic heart failure (health science)
- Associate Professor Mette Rosenkilde: Developing new pharmaceutical products (health science)
- Assistant Professor Nathalie Wahl: Is a bathing ring symmetrical? (natural science)

[Read more about the female research heads' projects here](#) (in Danish)

All grants can be seen at [www.fi.dk/dff](http://www.fi.dk/dff) under Nyt fra rådet.

#### Further information

Jens Christian Djurhuus, Chairman of the Danish Councils for Independent Research, [jcd@ki.au.dk](mailto:jcd@ki.au.dk), tel. 2043 5899  
Greta M. Kladakis, office assistant, Danish Agency for Science, Technology & Innovation, [gk@fi.dk](mailto:gk@fi.dk), tel. 3544 6319

Linn Hoff Jensen, head clerk, Danish Agency for Science, Technology & Innovation, [lihj@fi.dk](mailto:lihj@fi.dk), tel. 3544 6261

The Danish Councils for Independent Research is an independent council which distributes about DKK 1 billion each year to Danish research. The council supports – within all scientific areas – specific research areas which are based on the researchers' own initiatives, and which strengthen the quality and internationalisation of Danish research. DFF also provides consultancy on research within all scientific areas to the Minister for Science, Technology & Innovation, the Danish Parliament and the Government. The council also helps to strengthen communication and the use of research results and participates in international research.

*Gudrun Lau Bjerno, [gib@life.ku.dk](mailto:gib@life.ku.dk) – latest update 17 December 2008*

#### Girls are better at tasting than boys

Girls have a better sense of taste than boys. Every third child of school age prefers soft drinks which are not sweet. Children and young people love fish and do not think of themselves as being fussy eaters. Boys have a sweeter tooth than girls. Teenagers taste differently. And finally, schoolchildren in northern Denmark have the best taste buds.

The findings of the world's largest study so far on the ability of children and young people to taste and what they like have now been published. The study was conducted jointly by Danish Science Communication, food scientists from LIFE – The Faculty of Life Sciences at the University of Copenhagen and 8,900 Danish schoolchildren.

Read more about the mass experiment in the [press release](#).

*Gudrun Lau Bjerno, [gib@life.ku.dk](mailto:gib@life.ku.dk) – latest update 16 December 2008*

#### LIFE is partnering with three African universities

All four partners talked about a life-long partnership when a formal collaboration agreement – STRAPA (Strategic Partnership Agreement) – between the University of Nairobi (Kenya), Makerere University (Uganda), Sokoine University of Agriculture (Tanzania) and LIFE – Faculty of Life Sciences at the University of Copenhagen was signed on 3 December. The partnership is for life in more than one respect. The equal and reciprocal collaboration will survive those who were present when the agreement was signed, and this will ensure progress for Africa through research into agriculture, nutrition and natural resources.

[Read the press release](#) (in Danish)

*Gudrun Lau Bjerno, [gib@life.ku.dk](mailto:gib@life.ku.dk) – latest update 12 December 2008*

### **Cloned pigs and stem cells at LIFE – the antenna are up!**

Stem cells from pigs have microscopic ‘antenna’ which scent in which direction they need to develop (Figure 1). In the same way, a research group at LIFE is putting its antenna out and trying to sniff out in which direction the reproductive and stem cell research should be run. The group has a background in a historically close collaboration between the staff group Veterinary Reproduction and Obstetrics at the Department of Large Animal Sciences and the staff group Anatomy and Cell Biology at the Department of Basic Animal and Veterinary Sciences.

At a time when some of the activities at Veterinary Reproduction and Obstetrics are being moved west to Taastrup, it is wonderful, in the run-up to Christmas, to be able to report several advances being made by the hard-working scientists still based on the ground floor at Dyrelægevej 68 at Frederiksberg. Here you can find advanced laboratories equipped, for example, for working with the test tube fertilisation (in vitro fertilisation, IVF) of pigs’ eggs, with the subsequent cultivation of the fertilised eggs (embryos), with the cloned pigs and the establishment of stem cells from this species. Many of the laboratories have recently been approved for working with genetically modified organisms (GMOs). LIFE is therefore creating the foundation for the further development of the pig as an advanced biomedical model. One of the clear goals for the research group is to create genetically modified pigs for various research purposes as soon as possible. Another, which is currently being pursued in collaboration with researchers from Aarhus University, is to develop pigs as human disease models with accompanying stem cells as potential spare parts.

To date, the group has produced LIFE’s first cloned pig embryo. It is another step before cloned pigs can be born at LIFE, as this requires the cloned embryos to be transferred to a surrogate mother. It will hopefully be possible to realise this with the plans for LIFE’s Campus pigsty, which we are very excited about. The simple but refined technique called ‘hand made cloning’ (HMC) is used for the cloning. The same technique was used to create pigs at Aarhus University with a human Alzheimer’s gene inserted, work which was recognised by being awarded the scientific breakthrough of the year 2008 prize by the periodical ‘Ingeniøren’. Research groups at Aarhus University were behind the genetic work and the cloning of these pigs, while scientists from Veterinary Reproduction and Obstetrics, LIFE, were responsible for transferring the cloned embryos to the surrogate sows as well as for the final delivery of the pigs by Caesarean section.

When the pig embryos are created through IVF, there is a considerable risk that the egg is fertilised with more than one sperm cell. To avoid this, the research group uses, among other things, micro injection or

'intracytoplasmic sperm injection' (ICSI), a technique whereby a single sperm cell is injected into the egg using a thin pipette. A possible side benefit of ICSI is that the technique allows foreign genes to be inserted with the injected sperm cell.

In the laboratory next to the one where the IVF and cloning take place, the group is working to establish stem cells from pigs. It is the so-called embryonic stem cells in particular which have caught the group's attention. These cells are particularly attractive because, firstly, they can be cultivated over long periods of time – years – and, secondly, while the numbers are increasing, they retain the ability to differentiate themselves to all 230 cell types in the body, an ability termed pluripotential. Embryonic stem cells can be established from the very young – almost one-week-old – embryos of mice and humans; however, with pigs it causes problems preserving embryonic stem cells in their undifferentiated stage: Stem cells have so far chosen to differentiate themselves spontaneously to, usually, nerve cells or heart muscles. However, the latest experiment before Christmas with the introduction of new cultivation systems has produced the most promising results to date. The group will keenly follow how the cells develop over Christmas. Moreover, during the autumn at LIFE, far more stable stem cell lines have been isolated from pig embryos which are slightly older; about three weeks after fertilisation where the embryo has a head, tail and small limbs. These embryos contain the so-called primordial sex cells, which establish egg or sperm cells in the new individual. These cells can be isolated, and cultivated and are, interestingly enough, thought to be very similar to embryonic stem cells. Our latest fascinating electron microscope experiments have shown that our pig stem cells are equipped with 'antenna', or cilia (Figure 1), which probably receive signals about when the cells should differentiate. This is currently being researched further.

In research as well as in other situations, we must stretch out towards each other and collaborate. Here too we can learn from the stem cells. Figure 2 shows two pig stem cells which are lying alone during submersion. The stem cells are very sociable individuals, and it is possible to clearly see on the scanning electron microscopic image how the cells stretch out to each other in order to form a small colony together. Happy Christmas!

If you would like more information about the projects, please contact Professor Poul Maddox-Hyttel ( [poh@life.ku.dk](mailto:poh@life.ku.dk)), who is leading the work with establishing stem cells from pigs, or Assistant Professor Morten Vejlsted ( [mov@life.ku.dk](mailto:mov@life.ku.dk)), who is heading the work with IVF and cloning.

[See the figures here](#)

Figure 1: Scanning electron microscopic image of a colony of stem cells isolated from the primordial sex cells by a 3+ week old pig embryo. The arrows indicate the stem cells' 'antenna'.

Figure 2: Scanning electron microscopic image of two pig stem cells stretching out to one another.

Morten Vejlsted, Thomas Høst, Annedorte Roed, Mette Schmidt from the staff group for Reproduction and Obstetrics, Department of Large Animal Sciences

Stoyan Petkov, Vanessa Hall, Olga Østrup, Mikkel Aabech Rasmussen, Yu Gao, Jytte Nielsen, Hanne Holm and Poul Maddox-Hyttel from the staff group for Anatomy and Cell Biology, Department of Basic Animal and Veterinary Sciences

*Gudrun Lau Bjerno, [glb@life.ku.dk](mailto:glb@life.ku.dk) – latest update 12 December 2008*

## **CEA PhD program 2009**

CEA offers PhD positions in its 9 research centers throughout France to high level students in the fields of science and technology related to: Energy, defence & security, health and information technologies, fundamental research.

Read [more here](#) or at <http://www-instn.cea.fr/>

*Gudrun Lau Bjerno, [glb@life.ku.dk](mailto:glb@life.ku.dk) - siden er sidst opdateret d.11. december 2008*

## Grants

### **Grant awarded**

The travel foundation for graduates at LIFE awarded its grants on 16 December 2008 – the recipients have been notified directly. Letters of rejection will not be sent.

**Annette Guildal, Study and Students' Affairs, [ag@life.ku.dk](mailto:ag@life.ku.dk)**

*Gudrun Lau Bjerno, [glb@life.ku.dk](mailto:glb@life.ku.dk) – latest update 16 December 2008*

## Research funds etc.

See the updated information on the Research & Information website.