

New webpages lead you through the grants maze

EMBL Grants Services have revamped their webpages to help make grants applications easier. The new pages walk you through the process with a handy countdown, give up-to-date information about funding opportunities and advice about writing, costing and submitting proposals. The webpages also offer tips on managing grants once you're successful, the formalities that are sometimes required and what to do about changes to your grant. Of course, the members of the Grants Services team are always available to talk to face-to-face, too. [page 2](#)

Positive feedback for the new-look PhD course

Last year's intake of students to the PhD Programme have given the thumbs-up to the revamped Predoc Course. The results of the recent evaluation show that the new recruits rated the majority of the modules 'good' or 'very good', and felt that the course as a whole was useful preparation for their PhDs. In addition, the presentations and course materials are now made available on the web, a resource which has been very popular. "It's thanks to the efforts of a large group of people that the new course has been such a success," says Lars Steinmetz, who took charge of the restructuring of the course. [page 8](#)



Would you give money to this man?

Before Jörg Fleckenstein took up the newly-created role of Senior Manager for Resource Development last summer, EMBL's Endowment Fund was the only source of support for projects beyond its regular budget. The decision to create a dedicated Office of Resource Development in charge of philanthropic income and fundraising is a forward-looking and visionary response to the times ahead. "We're looking for potential donors who love science and understand the importance of research, and who understand the need to encourage and support young scientists," says Jörg. [page 3](#)

Interview: "I will never debate with a creationist"

Evolutionary biologist Steve Jones may have been preaching to the converted at EMBL, but the re-emergence of creationism in the rest of Europe is a very real issue. "It's a mystery. In the 30 to 40 years I've been talking to audiences about evolution, I'd never once had a question about creationism. In the last few years, though, such questions are completely commonplace," he says. "It's a mystery to me how any scientist can believe in creationism. In Europe you don't get the pig-headed stupidity about it that you get in the US, but there's a more sophisticated line of argument; 'creationism with a college education'. Darwin himself showed that evolution is a factory for making almost impossible things." [page 6](#)



A roadmap for the future

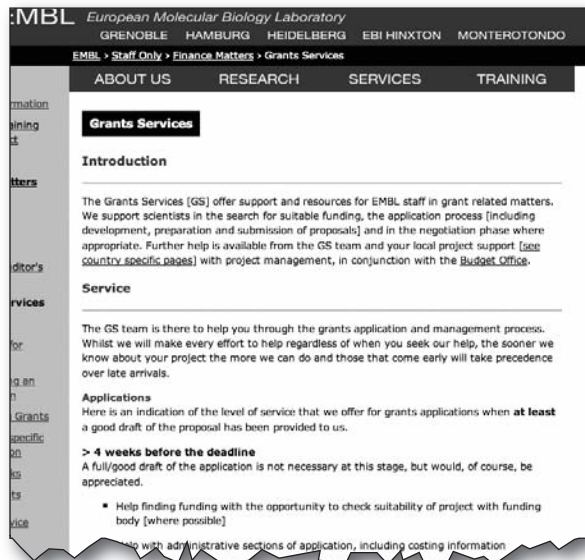
In a new EU proposal to build a pan-European infrastructure for life sciences, the EBI will run ELIXIR, which coordinates biological information resources spanning many different countries, and EMBL's structural biology units will participate in INSTRUCT, which aims to set up a framework of core technologies for integrated structural biology. [page 2](#)

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New webpages lead you through the grants maze



As any scientist knows, applying for funding is not the most exciting or enjoyable part of the job. Now EMBL Grants Services (previously known as the Grants Office) have revamped their webpages to help make grants applications easy, understandable and – dare

we say it – almost fun!

The new pages walk you through the process with a handy countdown, so you can plan your application with the kind of precision usually saved for a well-planned Christmas dinner. They also provide up-to-date information about funding opportunities, as well as advice about writing, costing and submitting proposals.

Of course, the webpages are only the beginning. The team of living, breathing grants officers are here in person – not in a call centre in Delhi – to talk you through the process. All they ask is that you contact them as early as possible. “The sooner we know about an application, the more we can help,” says Phil Irving, head of the Grants Services team. Of course, if you’re stuck to even pinpoint the right grant to apply for, they can help you with that, too.

Once you’re successful, the webpages also offer tips on managing grants, the formalities that are sometimes required and what to do about changes to your grant.

The team itself, which at EMBL Heidelberg comprises Phil, Geneviève Reinke and new administrator Jillian Rowe, has now split their responsibilities according to EMBL unit, so you’ll always know who your dedicated grants officer is. There’s also local help with grants at every outstation, and you can also find country-specific information on the webpages.

The webpages include the ticketing system, now standard in EMBL’s service departments, so that your requests get to the right person and are dealt with as quickly as possible.

“We hope that these new easy-to-use pages will help people to navigate the grant application process smoothly,” says Phil. “Of course, if anybody needs face-to-face help, we are always available.”

To check out the new webpages, visit www.embl.org/grants, or contact a member of the Grants Services team with any queries.

A roadmap for the future

EMBL is a leading player in a new proposal to build pan-European infrastructures for the life sciences.

More than ever before scientists, institutions and countries need to cooperate, share materials and put infrastructures in place to help them meet new challenges and make the best use of resources. Disciplines such as genomics, for example, are generating vast amounts of data that need to be managed effectively.

In 2002, the member states of the European Union set up an organisation called the European Strategy Forum on Research Infrastructures (ESFRI) to survey which infrastructures were needed for Europe. In 2006, it published a ‘roadmap’ proposing the establishment of 35 large-scale European infrastructure projects.

However, the EC can’t fund all these itself, so it is supporting a 2-3 year preparatory phase to coordinate the projects and lead to ongoing funding from the countries involved. In the call for proposals for this preparatory period, the EBI, with many collaborators, proposed the European Life Sciences Infrastructure for Biological Information (ELIXIR).

ELIXIR’s mission is to construct and operate

a network of coordinated and integrated biological information resources spanning many different countries to support life science research in Europe and its translation to medicine and the environment, the bioindustries and society. It’s very timely to exploit new developments in e-science to really establish a robust model for how data should be stored, used, exchanged or compared throughout Europe.

In addition, EMBL’s structural biology units will participate in the Integrated Structural Biology Infrastructure (INSTRUCT), which aims to set up a framework consisting of core technologies with the long-term vision of combining integrated structural biology with cell biology to create 3D cellular structural biology.

“We will interlink data resources with each other and with the literature, develop standards for new data and develop new resources. We’ll also build access through user-friendly portals,” says EBI director Janet Thornton on the ELIXIR project. “The initiative will also give Europe one voice in the global community on the aspects of this and the other projects.”

“Today’s structural biology depends on access to a lot of different technology platforms,” says Stephen Cusack, EMBL’s representative in INSTRUCT. “INSTRUCT aims to develop an EU-wide programme for developing these kinds of integrated infrastructures and make them available to EU scientists.”



“This initiative will give Europe one voice in the global community”

– Janet Thornton



Would you give money to this man?

Jörg Fleckenstein explains why EMBL needs its new fundraising strategy – and how he plans to implement it

Before Jörg Fleckenstein took up the newly created role of Senior Manager for Resource Development last summer, EMBL's modest Endowment Fund was the only source of support for projects beyond its regular budget.

Now EMBL's new fundraising strategy, and the decision to create a dedicated Office of Resource Development in charge of philanthropic income and fundraising, is a forward-looking and visionary response to the future. "We need to be able to respond to current funding needs as they arise, such as the Advanced Training Centre," says Jörg. "Secondly, EMBL's budget is planned in five-year cycles. We need more flexibility, so that if something cutting-edge suddenly came along, there would be a pot of funds available to make the most of it."

The fundraising strategy, which was put on paper back in summer 2007, is a long-term plan, with the ATC being the starting point. For that, Jörg has created the Corporate Partnership Programme, which offers partners the opportunity to have valuable association with the ATC and a range of benefits in return for a contribution.

"The ATC is a good place to start the fundraising strategy, and the process will lead to further ventures," says Jörg. "Rather than scientific projects, they'll be infrastructure-based, like bricks and mortar; initiatives that support the science indirectly. But anything can happen."

At the moment, Jörg is involved in the 'quiet phase' of fundraising's two-way strategy. "We're looking at the contacts where we already have a relationship and taking it to the next level. Starting the public phase, we'll approach a wider circle of potential donors and try to bring them on board."

"We approach three types of potential donors: trusts and foundations, corporations,

who might also provide in kind support, and philanthropically-minded individuals," says Jörg. "We look for people in the field; those with a link to EMBL or an interest in molecular biology. We're looking for those who might have an interest in helping EMBL because they love science and understand the importance of research, and because they understand the need to encourage and support young scientists who are embarking on this career path."

How does the existing Endowment Fund fit into the new scheme? "Before, it was the vehicle, and now it's one of the tools," explains Jörg. "The Endowment Fund is now a project itself, like the Corporate Partnership Programme."

Although projects like one-off conferences are not part of Jörg's remit, he's happy to help advise on the organisation of sponsorship for such events, and to hear about bigger projects. "People are welcome to come to me with ideas, and we can see whether something can be done together. This goes for the outstations, too, of course; in Hamburg there's fundraising potential for PETRA-III, for example."

On an immediate, practical level, he's also exploring the possibility of setting up a common contact database for EMBL. "There are several sources of contact information within EMBL maintained by separate departments. An online system to allow the sharing of such information could be very beneficial."

There's more information about the Office of Resource Development on the EMBL website, or contact Jörg at joerg.fleckenstein@embl.de.



Photos: Christine Paragiotidis

MMPU research reveals source of widespread genetic disorder

A Molecular Medicine Partnership Unit collaboration has made an important breakthrough in discovering the origin of Europe's most common genetic disease.

Researchers led by EMBL's Matthias Hentze together with Martina Muckenthaler and Wolfgang Stremmel at the University of Heidelberg have found that the origin of hereditary hemochromatosis, a common iron overload disorder, is a genetic defect in the liver.

While too little iron can lead to anaemia, too much promotes the formation of toxic radicals that lead to tissue damage. Hereditary hemochromatosis (HH), an iron overload disorder affecting about one in 300 people, is probably the most common genetic disorder in

Europe. It's caused by a mutation in the so-called HFE gene, but where in the body this gene acts to cause the disease was previously unknown. "For a long time HH was presumed to be an intestinal disease, because this is where iron uptake takes place," says Matthias Hentze, MMPU founder and Associate Director of EMBL.

However, the joint research group found that mice lacking the HFE gene in their liver cells exhibited all the central features of the disease. HFE encodes a protein that is probably involved in transmitting signals about the current iron contents of the body to liver cells. In response, the liver cells make the iron hormone hepcidin that is released into the blood stream and reduces iron uptake in the intestine.

The research is a landmark discovery for the MMPU, a joint project set up between EMBL and the University of Heidelberg in 2002 to uncover the molecular mechanisms of a range of different diseases.

The unit is also expanding, as it recently welcomed a new group led by Rainer Pepperkok from EMBL and Heiko Runz from the university. They'll be looking at the cell biology of disorders of lipid metabolism, and bring the number of collaborative groups in the partnership up to five.

"With yet more creative groups joining the partnership, our chances of being at the forefront of important breakthroughs in medicine continue to rise," says Matthias.

Casting the net far and wide at biggest US job fair

EMBL Monterotondo group leader Cornelius Gross helped spread the word about EMBL across the Atlantic at the beginning of February when he represented the institute at the 12th Annual MIT European Career Fair in Cambridge, Massachusetts.

Sharing a booth with fellow EIROForum members CERN, ESA, ESO and EFDA, Cornelius had lots of questions from people interested in EMBL. "For example, several postdocs were looking for ways to return to Europe, one of whom was an accomplished chemist interested in a group leader position; an undergraduate student was looking to apply to the EMBL International PhD Programme; and a lawyer was interested in technology transfer at EMBL," he says. At least 100 other scientific employers were represented, including the Institut Pasteur, CNRS, the Max-Planck-Gesellschaft, Charité, the Helmholtz Association, DFG and many technical and research institutes.

Cornelius also made contact with a representative of the MIT International Science and Technology Initiative (MISTI) summer internship programme, which places MIT undergraduates and graduates in companies and laboratories around the world. "I think this would be an excellent way to get young potentially talented people into our labs," he says. "I for one regularly have two or three interns in my lab each year, including high school students, and have found this to be an energising force for the lab in all respects."

The European Career Fair was established in 1997 by a group of Europeans at the Massachusetts Institute of Technology (MIT) who, having studied in the US, began to look homeward as graduation approached. It provides a forum for European employers to connect with candidates from the best American universities, and is the largest of its kind in the



The Annual MIT European Career Fair offers useful networking opportunities

United States, with participants operating in a wide variety of sectors.

"We had BNP-Paribas, the banking group, next to us, so there was always a line of nervous suit-and-tie types waiting in line across the front of our booth, but we managed to entertain some of them during the wait," says Cornelius.

Fellow booth member Claus Madsen from ESO was impressed by the interest in EMBL and said it compared favourably with the previous year. "I found the experience much more enlightening than expected, and it's certainly something we should continue," says Cornelius. "I think we should have our own EMBL booth next time."

EBI students take the floor

The new first year PhD students at EMBL-EBI got an excellent opportunity to piece together the research activities of the different groups there with the first ever EBI PhD Student Seminar Day on 24 January.

Fourteen students just at the beginning of either their second or final year gave introductions to their research, covering a wide variety of topics. The day was also enjoyed by and of value to other EBI researchers. Nick Goldman, EMBL-EBI's Academic Training Coordinator, and other EMBL-EBI group and team leaders complimented the students on the high quality of their presentations and work.

The success of the day indicates that it will become a permanent addition to the EBI events calendar and is one way in which the profile of the EBI's PhD research will be raised across the whole Genome Campus.

More small molecules than you can wave a stick at

EMBL Heidelberg's Chemical Biology Core Facility, which provides small molecule screening expertise to EMBL, DKFZ and the University of Heidelberg, has a new diversity oriented screening library composed of no less than 79,000 compounds.

High-throughput screening relies on rapid testing of large library of small molecules for activity against biological assays. The core facility's first library of 50,000 compounds, which was introduced in 2004, has been used in many screens; it is reaching the end of its life span and stock levels are running out.

For the new library, more than 5 million structures were collected 'virtually' and put through a rigorous selection process to see if they made the grade. In addition, they were analysed on the basis of their 'scaffold' content to ensure the optimum coverage of chemical space – each compound structure was virtually fragmented into its core (the scaffold) and side chains.

"A scaffold-based but chemically diverse selection like this allows more informative screening for the benefit of the research groups," says Joe Lewis, head of the Chemical Biology Core Facility.



Photo: Alison Meynert

EMBL ranks high in the popularity stakes

Two separate pieces of EMBL research have been selected by *Discover* magazine to list among the 'Top 100 Science Stories of 2007'.

Work carried out by Holger Kress and his colleagues in the Stelzer and Griffiths labs last year on how immune cells catch pathogens was

rated at no. 76, and a study on the secrets of egg formation by the Ellenberg group came in at no. 95.

In another poll, *Science Watch*, the Thomson Scientific newsletter, assessed the top 1% of high-impact molecular biology and genetics papers from 2002 to 2006 and ranked EMBL at no. 13 of 25 top institutes according to the measure of total citations, and at no. 7 by impact, or citations per paper. EMBL Heidelberg's Peer Bork and the EBI's Ewan

Birney both appear among the featured authors of multiple high-impact reports.

Lastly, *Science* voted Ewan's ENCODE project as contributing to the 'Breakthrough of the Year' in 2007, human genetic variation. According to *Science*, the publication of the project's four-year effort to build a 'parts list' of all biologically functional elements in one percent of the human genome "drove home how complex the genome is" and led to "a new appreciation of human diversity".

behindthescenes

How everything at EMBL Hamburg stays shipshape

There's a household elf at EMBL Hamburg. Somehow, mysteriously, all the lightbulbs get changed, the paper in the printers is replaced, the coffee is replenished and the rubbish is taken out. Left an empty cardboard box in the corridor? Bing! It's gone. Abandoned your print job because the printer is out of paper? Kazamm! It's full again!

The elf is, in fact, Heinz-Dieter Gentz, who for more than 10 years has been fetching and carrying for the staff of the outstation. "If I take two or three days off, everyone's always happy when I get back," he says. "They need me!"

Heinz-Dieter's main job is caretaker. "I go around making sure the lights are off, replacing bulbs, mending things, doing small plumbing jobs and other things. If it's anything more difficult I arrange for a professional to come in. If it's urgent and means that people can't work, I have to sort out the problem immediately." You might also meet him picking you up from the station or airport if you visit the outstation. But that's not his main driving task. "The customs house is on the other side of Hamburg, a 45 minute drive each way, with a half-hour wait for paperwork. When people send samples from the US, Canada, Singapore, Australia or even Switzerland, I often have to do that journey several times a week."

But Heinz-Dieter hasn't always been a caretaker. "I was a sailor," he says. "Most of my family went to sea – my father was a pilot and then a first mate in Hamburg – and I come from Stralsund, which is by the Baltic. The sea is in my blood. Having said that, lots of people from Switzerland and Bavaria end up going to sea!"

"I was qualified to take the helm of the biggest ships around – cargo ships, over 270m long, with nine hatches, taking iron ore from places like Canada to Antwerp and Dunkirk. I went nearly everywhere. The only places I didn't go were Australia, New Zealand and the east coast of South America. The first few years were really good; we would spend a week or ten days in one harbour, with lots of free time."

"Every time my phone rings, it means someone needs something, usually right away!"

– Heinz-Dieter Gentz



Merchant fleet conditions, however, changed for the worse over the years. "Later we would stay for just three days in a harbour and work for 12 hours. The German fleet became too expensive. German sailors had to be paid German wages, and compared to a Filipino or a Russian or a Pole this was too high. We'd also get more holidays – 12 to 15 days as opposed to three or five. So ship owners would put on another flag, Cyprus, Malta, or Panama, throw off the Germans and get cheaper labour on board," explains Heinz-Dieter.

"On my last ship, where I was first mate, not captain, it was only myself, the captain and the chief engineer who were German. The rest of the officers were Filipino, and the crew came from Burma. They were good fishermen, but they didn't know anything about mechanics, so my normal working hours were 18 to 20 hours a day. After that I just said 'no, that's enough.' I was reluctant in a way to leave that life, but when I quit I was nearly 50 and I wouldn't have been able to do it for much longer anyway."

Heinz-Dieter jumped into the full-time role of caretaker at EMBL Hamburg after helping rebuild the wetlabs. "I like this job because I'm

very independent. I enjoy it because I have to deal with people from different countries and, unlike on ship, the job has a fixed timetable with weekends free."

Like all jobs, though, it has its annoyances. "The worst part is being dependent on my cell phone," Heinz-Dieter smiles. "Everyone knows they can just call at any time to get hold of me. Every time it rings, it means someone needs something, usually right away!"

Having said that, he relies on people to tell him when things are broken. "Sometimes they don't. Some people just let printers run out of paper, for example, without telling anyone. Margret (Fischer) always tells me I'm too responsible – I do things that people should be doing themselves. I pick up after everyone!"

"There were 43 people at EMBL Hamburg when I started, and there are over 100 now, with two outstations of the outstation – Building 3, where the high-throughput facility is, and the containers where people work on PETRA-III. I spend lots of time going from one to the other all day. But I really enjoy working here."

interview

“I will never debate with a creationist”

Evolutionary biologist Steve Jones may have been preaching to the converted at EMBL, but the re-emergence of creationism in the rest of Europe is a very real issue

We're accustomed to hearing about the debate surrounding the teaching of creationism in the US. But in November 2007 in an article in *Nature*, 'Anti-evolutionists raise their profile in Europe', Almut Graebisch and Quirin Schiermeier expressed concern that the teaching of alternative theories in schools is not just an issue across the Atlantic.

They're not the first to notice this. In 2006 the Royal Society, the UK's national academy of science, launched an attack on creationism, concerned that the idea was gaining a foothold in schools and universities across the country. They enlisted Steve Jones, Professor of Genetics at University College London, to give his public lecture, 'Why evolution is right and creationism is wrong' – and autumn last year, he came to EMBL Heidelberg to share the same lecture with an audience here as part of the Science and Society Forum. Author of several popular books on genetics, including *In The Blood* and *The Language of the Genes*, Steve is concerned – and baffled – by the growing influence of creationist groups in Europe.

"It's a mystery," he says. "In the 30 to 40 years I've been talking to audiences about evolution,

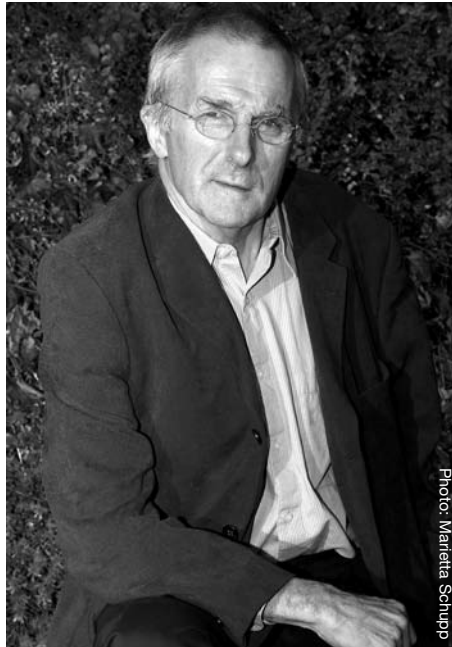


Photo: Marietta Schupp

I'd never once had a question about creationism. In the last few years, though, such questions are completely commonplace.

"In Turkey, it's very alarming; I had bodyguards when I went there. Darwinism is anti-Islamic, and there's a lot of political tension. But as for the other countries, it's harder to explain. In London's case, for example, a huge sector of the population are Islamic, and deny evolution. So teachers think they have to provide both sides of belief."

In Italy in 2004, education minister Letizia Moratti caused a furore when she removed the

theory of evolution from the curriculum. In Britain, pro-creationist group 'Truth in Science' sent information packs to every secondary school in the country. In October 2007, Mirosław Orzechowski, Poland's deputy education minister, told the newspaper *Gazeta Wyborcza*: "The theory of evolution is a lie. It is an error we have legalised as a common truth."

"People expect – and fear – too much. They want answers to questions which are not open to scientific enquiry, like is there a God, or what does it mean to be human," says Steve.

"The Victorians had a horror of evolution at first, thinking it makes us less than human, but in fact it makes us MORE human. We're the only animals that have developed art, history, speech – all those things. We ARE very similar to chimps, but in every way that's important, we're completely different.

"By 1870, just over a decade after Darwin's *Origin of Species* came out, the uproar had subsided. Most churchmen were educated people and could see that they could accept evolution and that it had nothing to do with their religious belief. The two things simply don't clash. Science is far too powerful to bother with ridiculous, untestable theories."

But why is creationism coming back into fashion? "It could be mainly as a result of the fear of modern biology, but sometimes because of the false claims of many scientists. But now, I don't know why it should be so rampant suddenly."

Steve calls creationism 'anti-science'. "I will never debate with a creationist," he says. "They think that $2+2=5$; or, at a push, 4.1. I'm entirely sure that $2+2=4$. There's nothing to discuss. If they won't accept the physical facts of life, we have nothing to talk about. I don't care what they believe, unless they've got some evidence, which they haven't."

At EMBL, he certainly didn't expect to be addressing any creationists. "It's a mystery to me how any scientist can believe in creationism," he says. "In Europe you don't get the pig-headed stupidity about it that you get in the US, but there is a more sophisticated line of argument; 'creationism with a college education'. It's the 'intelligent design' argument – that organisms must have been designed by something, because they're so complex. But Darwin showed that evolution is a factory for making almost impossible things.

"He didn't think he would ever see evolution happening – he thought of it as a model that brought together many apparently unrelated facts into one seamless whole – but of course we can. In the brief history of HIV we have the perfect example of the whole of the Darwin machine unfolding its powers in front of our eyes. He would have been delighted to see the workings of evolution so starkly exposed."

Who ordered a huge floor for Christmas?



On 16 December the last of 850 concrete mixers left the DESY premises in Hamburg after nearly 60 hours of pouring a total of 6,600m³ of concrete to make the 280m x 24m slab for the floor of the new PETRA-III experimental hall. Before the mixers could empty their load, the concrete had to undergo quality tests in a temporary laboratory at DESY. All parameters had to be exactly right for the 1m deep slab to be produced in one piece and to have as few cracks as possible. The concrete was then left to set covered by a thermo foil, during which time it developed temperatures of up to 43 degrees Celsius. When PETRA-III is completed in 2010, EMBL Hamburg will operate three beamlines and accompanying facilities for the benefit of users from all over the world.

The safest way to double your money? Fold it in half!

Good advice, perhaps, but whatever your financial state, you'll be glad to hear that the days of incomprehensible EMBL payslips are over.

Starting last month, thanks to the hard work of Lena Reunis, the personnel team and IT services, SAP Human Resources software has been implemented to improve the level of service the department provides to the EMBL community.

The first stage involves better integration between the payroll and finance systems. Your new payslip shows your employment details, including entry and exit dates, grade, budget number and holiday entitlement in the top right-hand corner. The central columns clearly show your own and EMBL's social security, health and pension contributions, and display your total income and the amount that finally hits your bank account.

Travel expense statements and other financial documents generated by payroll and finance also have an improved, at-a-glance layout.

Worried that you seem to be getting a bit less than usual? The new system performs some of

the pay calculations in a slightly different way, with improved consistency and accuracy of the calculations. Rounding of basic salaries for staff members, ancillaries and supernumeraries has been removed, and they're now calculated to the cent or penny. This will make the annual increases in July more transparent and equitably distributed. In addition, payments that are calculated differently include basic pay for part time work, non-resident allowance and spouse death benefit. Those people who receive a little more or less in January than in December shouldn't panic (or celebrate); the differences will no longer exist after the salary scales are upgraded in July.

However, if you feel you're disadvantaged by the changes by more than a whole currency unit in euro or pounds please let personnel know, and they'll review the amounts paid to you up to the end of June and repay the difference. Your contact for any queries is Annabel in the personnel section at Heidelberg (e-mail goulding@embl.de or tel. +49 6221 387221).

Samples of salary statements are available at www.embl.de/staffonly/personnel/salary.html, clarifying in detail what each pay element on the document refers to.

"If you feel you're disadvantaged by more than a whole currency unit, let personnel know"



New revelations in epigenetic control shed light on cancer

While former EMBO director Frank Gannon is busy in his new job running the Science Foundation Ireland, his remaining research group at EMBL Heidelberg has been busy too.

Scientists led by George Reid, Sara Kangaspeska and Brenda Stride have just published a paper in *Nature* describing a new insight into a crucial epigenetic mechanism, which led to the discovery that long-term regulation of the human genome is much more dynamic than previously assumed.

Epigenetic changes to the structure of chromatin – a tightly packaged DNA/protein complex – grant or deny access to the molecular machinery that transcribes DNA and thereby regulate gene expression. One mechanism that prevents transcription is DNA methylation, where a small chemical residue called a methyl group is added to strategic bases on DNA.

For a long time scientists considered methylation to repress gene activity long-term, because methylation marks are sta-

ble and maintained through cellular replication. However, the Gannon group found that methylation marks can quickly appear and disappear and can be triggered by hormones such as estrogen or by the established anticancer drug doxorubicin. Treatment sets off a whole cycle of events: initial demethylation renders silent genes active and subsequent remethylation shuts them down again. This cycle repeats itself every one-and-a-half hours. As cancer results from genetic and epigenetic changes, the discovery of this dynamic aspect to DNA methylation provides new targets for treatment.

"The results challenge our understanding of epigenetics as a means to regulate gene expression permanently," says Sara.

"Our next step will be to find small molecules that target these cyclical processes," adds George Reid, co-senior author of the study. "Such bio-tools will further the investigation of the role of dynamic methylation in development and in cancer."

Bringing power to the people

Scientists in EMBL Heidelberg's Structural and Computational Biology unit have been working hard to integrate a brand new crystal visualisation system for automated experiment tracking in the protein crystallisation platform.

"We've upgraded the existing Heidelberg crystallisation service with a new imaging system and a new web-based interface," explains Carlos Fernandez-Tornero who, with Frank Thommen, integrated the system, together with crystallisation technician Angelika Scholz and support from Pete Everitt from Scientific Instrument Maintenance. "The new system allows you to inspect your crystals via the web while sitting in front of your computer, instead of staring red-eyed through the microscope.

"I'd like to thank Josán Márquez and his team at Grenoble for developing the original software and helping us with the transfer of the interface, which we've adapted for Heidelberg."

The service is open to the entire EMBL Heidelberg community. Carlos hopes that the new web-based interface and imaging systems will also attract new users who previously never dreamt of crystallising their protein. "We hope every EMBL lab purifying a protein could just give it a try for crystallisation".

You can find out more or register for the service at www.xtp.embl.de/.

Breaking down barriers

On 27 November last year Head of EMBL Hamburg Matthias Wilmanns did his bit for world peace when he visited Al-Quds University in East Jerusalem.

Matthias (right) had been invited by two associates, Joel Sussman (left) of the Weizmann Institute of Science in Rehovot, Israel and a former member of EMBL's Scientific Advisory Committee, and Ayman Hussein, a professor at An-Najah National University in Nablus, to be the mediator for their Trilateral Grant from the Deutsche

Forschungsgemeinschaft (German Research Foundation). The grant enables Israeli and Palestinian partners to collaborate on a scientific project while a coordinating scientist in Germany, Matthias in this case, applies for funding on their behalf. Joel and Ayman have known each other for a long time because of a common interest to understand the molecular processes of diseases caused by parasitic nematodes, "diseases that do not know about bor-

ders", as both Ayman and Joel commented during the visit. This common interest and past record will serve as a basis for the future trilateral collaboration.

Al-Quds, the only Arab university in Jerusalem and the West Bank's leading institute, was chosen as the venue for the meeting. "Al-Quds is large and well equipped in a number of research areas, but it felt very different from a European university," says Matthias. "However, you could immediately see the impact that joint projects with countries such as France, Germany and the US have had, and you feel encouraged to follow up these lines."

During the visit, Matthias delivered a lecture about EMBL Hamburg's tuberculosis project, as an example for combining tools from fundamental research and disease-specific applications. "There was no sense of unease or danger," he says. "I was deeply impressed by the welcoming and open reception of everyone we met."

"It was a good kick-start for a future collaboration across borders, and we are now working to make this happen."

Positive feedback for the new-look PhD course

Last year's intake of students to the EMBL International PhD Programme have given the thumbs-up to the revamped Predoc Course.

The results of the recent evaluation show that the new recruits rated the majority of the modules 'good' or 'very good', and felt that the course as a whole was useful preparation to help them start their PhD work.

EMBL Heidelberg group leader Lars Steinmetz, who last year was asked to take charge of the restructuring of the course, is pleased with the results. "We're very happy with the outcome of this. When we started we were unsure that it would be possible to implement all the changes within the year. But we've got as close to the ideal situation as possible," he says. "This year, participation was phenomenal. They were a very active group and asked a lot of questions, and the feedback was very positive."

Lars and the working group, which comprised Alice Young, Carl Neumann, Heidi Dvinge, Klaus Scheffzek, Nils Gehlenborg, Marcel Souren, Wolfgang Huber and Vladimir Benes, examined the results of 2006's course evaluation and identified several aspects that needed updating. "The number of PhD students at EMBL is increasing, and we're getting more and more students with a computational background," explains Lars. "The focus of

the course was originally on experimental biology, and it needed to be adapted for other students. The feedback also suggested that the outstation students felt the course was very Heidelberg-centric."

The new course is arranged into themed modules instead of by EMBL unit, and every research group is involved. "The research within an EMBL unit can be very diverse. That means there's a lot of overlap between different units, and the students were being told about some material twice," says Lars. "By focussing on areas by biological subjects, we guarantee that students hear about something only once, and also that subjects are

taught in an interdisciplinary way, because group leaders from different units have different approaches to a particular biological question."

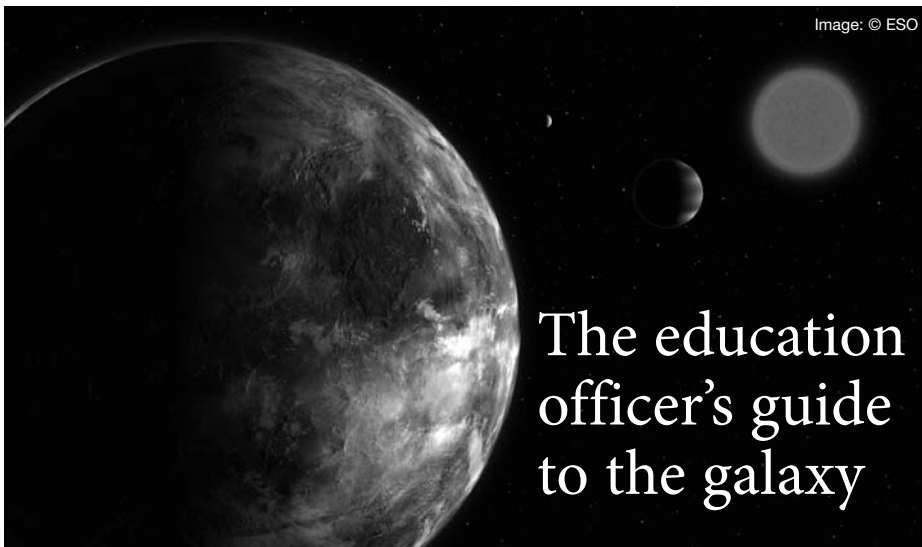
New to the course are the journal clubs, for which students read one or two papers which are the basis of the module, sometimes classical biology papers which made a big impact decades ago, and discuss them in a group. In addition, the presentations and course materials are now made available on the web, a resource which has been very popular.

"It's thanks to the efforts of a large group of people that the new course has been such a success," says Lars.

"We've got as close to the ideal situation
as possible" – Lars Steinmetz



fromthesistersciences



The education officer's guide to the galaxy

Artist's impression of Gliese 581, dimmer than our sun, and its rocky planet

People at EMBL are used to studying tiny things. Imagine what it's like to study something at entirely the other end of the scale – planets, solar systems, the whole universe.

Well, actually, it's not so different. Whether what you're looking at is very, very big or very, very small, astronomers, like biologists, do much of their work in front of the computer. Like us, they often form big consortiums spanning several institutes to look at one project. While we have nuclear magnetic resonance and sequence database groups, they have cosmic microwave background and galaxy interactions groups. They, too, work in publicly-funded institutes with catchy acronyms, like EMBL and ESO.

Douglas Pierce-Price, education officer at the European Organisation for Astronomical Research in the Southern Hemisphere (ESO), doesn't see the two fields as worlds apart. "It's all science," he says. "I do get the odd moment of dizziness when I try to think about the scale of the universe, but then it's just as dizzying when I think about all the processes happening inside a single one of my cells, and how many cells I have."

Douglas is based at the ESO headquarters at Garching, near Munich. While our scientists largely travel between the outstations and other parts of Europe, their scientists spend a lot of time jetting to and from ESO's three telescope sites in Chile. The oldest, La Silla, is 2,400m above sea level; Paranal, further north, is at 2,600m and is home to the Very Large Telescope array, comprising four large telescopes, each 8.2m across, and four smaller, movable auxiliary ones. Not only are the giant telescopes extremely powerful in their own right, they can also work together, as can the auxiliary telescopes, as a single instrument using interferometry. "With interferometry, you combine the light signals from multiple

telescopes so they act like a single telescope as big as the whole set," explains Douglas. "Spread out over a distance of 200m, for example, it's a bit like having an actual 200m telescope."

The third site is Chajnantor, 5,000m above sea level in the Atacama Desert. There ESO, together with North American and East Asian partners, is building the Atacama Large Millimeter/submillimeter Array (ALMA), a giant radio telescope. A whopping sixty-six antennas will link across a plateau to make a single huge telescope.

"It won't just be an incremental increase; it'll be orders of magnitude higher resolution than what's been done before," says Douglas. "It's like going from fuzzy blobs to an image that's up to ten times better than Hubble in terms of resolution. The submillimetre waves it uses are particularly good for looking at cold stuff like clouds of gas and dust, which are important for star formation."

A major event for astronomy in the past year has been the discovery of the first earth-like planet, Gliese 581c, in the habitable zone of its red dwarf star. "Astronomers using ESO telescopes found an extrasolar planet that's rocky, as opposed to a gas giant like Jupiter, that's in the 'habitable' zone around its star – not so close that water boils, and not so far away that it freezes. The possibility of liquid water being present is very exciting if you're looking for life."

So might finding life elsewhere in the universe really be the next step? "Short of getting a signal from intelligent life, we can continue our search with the next generation of telescopes," says Douglas. "One of our other new projects is the European Extremely Large Telescope, which may be large enough to image earth-like extrasolar planets."

"Another really important discovery of the last decade is that the expansion of the uni-

New hopes for a further addition to EMBL member states

In a trip to Turkey at the beginning of the year, EMBL DG Iain Mattaj came a step closer to securing the country's official involvement with EMBL.

The Turkish delegate for the European Strategy Forum on Research Infrastructures (ESFRI, see page 2), Professor Murat Ozgoren, organized the 15 January visit to Izmir, which included meetings with representatives from Dokuz Eylül University in Izmir and the Sabanci and Bogaziçi universities in Istanbul.

The group discussed potential research and training collaborations between Turkish scientists and EMBL. "We were given an extremely warm welcome, and we're hoping that Turkey will join EMBL in the not too distant future," says Iain.



Meral Sakizli, Director of Basic Sciences at Dokuz Eylül University, presents Iain with a memento of his visit to Turkey

verse is accelerating; that so-called 'dark energy' is stretching the universe faster. With a sufficiently powerful telescope we would be able to directly measure the acceleration of this stretching. This would be very, very exciting."

The United Nations have just announced next year as the international year of astronomy, so from an outreach point of view Douglas has a lot coming up. Like EMBL's outreach activities, he works with teachers and organisations such as the European Association for Astronomy Education, and runs summer schools to spread the word about astronomy. "Astronomy is often said to cover extremes. You could be looking at something at an atomic level in space; nuclear reactions inside a star, for example. But at the same time you're looking at things on the scale of the whole universe," he says. "It's a science with a 'wow' factor – the pictures are fantastic."

"Astronomy is a good way to get people interested in science generally. ESO, like EMBL, is exciting because of its facilities and technology, and it's a meeting point for scientists from different areas of the field."

Alumni facts...
EMBL's Swedish
scientific alumni are 50%
postdocs, 19%
faculty members and 17%
predocs. 80% return to
Sweden.

From Sweden to EMBL ... and back



A Swedish postdoc came to EMBL in 2004. Three years later he returned home with a new love. This is his story...

It's thanks to the Alumni Association Swedish Postdoctoral Fellowship that Johan Ledin came to EMBL in 2004, after completing his PhD at Uppsala University. Funded by the Swedish Foundation for Strategic Research, the award enabled Johan to continue his studies at EMBL in finding possible roles for HSPGs in the development of vertebrates. He did this in Carl Neumann's lab, at EMBL's Developmental Biology unit, where he also fell in love with zebrafish as a model system. "Apart from the ease in manipulating and studying developing embryos in zebrafish, I just like dealing with these creatures. I never felt that when I was working with mice – it felt like a necessary burden."

While working with this new model system was fun and challenging, it was also stressful to be an amateur again and to constantly ask others for advice. In addition to this shift in his area of work from biochemistry to developmental biology, Johan was also trying to make things work in his relocation from Sweden to Germany with his family. "It was quite exhausting. Unlike most postdocs, I couldn't just throw my belongings in a room at the EMBL guest house and go grab a beer!"

It also took a while to adapt to German culture. "Germans are much more frank in the way they communicate. The first time I

was publicly scolded at Bauhaus for using the wrong elevator, I was shocked. Later on I realised that this is pretty normal; it doesn't mean anything harsher than "oh dear, please use the left elevator next time, if possible". This tendency to express your annoyance instantly and loudly would lead to lifelong hostilities in Sweden."

Some things, however, were more familiar. "We recognised so many things – from tiny details of Christmas decorations to traditional songs, children's plays, architecture and attitudes – as Swedish. Despite the enormous influence by English and American culture, Sweden is clearly a part of the German cultural sphere. If you ask me, Swedes can be defined as poorer but cooler Germans!"

After this 'interesting chaos', everything started to fall into place. Johan's wife Anna Ledin, also a postdoc from Uppsala University, began work at EMBO. Their two daughters Agnes and Julia, five and one at the time, settled in at the EMBL Kinderhaus and started to gain fluency in German.

At the end of his fellowship, Johan was offered a four-year post as Assistant Professor at Uppsala University, and Anna a position as Scientific Secretary at the Royal Swedish Academy of Sciences. The Ledin family returned to Sweden in the summer of 2007, and Johan is now in the process of establishing a zebrafish facility to continue the work he started at EMBL. His aim is to systematically investigate when certain aspects of HSPG biosynthesis have an instructive role in the function of paracrine factors by using the available techniques in the zebrafish model system to manipulate gene expression of HSPG biosynthesis enzymes. "To this end, a continued cooperation with EMBL is imperative to my work both now and in the future."

What's exciting about his new position is the opportunity to create strategies to inves-

tigate the potential role of proteoglycans in morphological evolution, where so far very little research has been done. Within five years, Johan intends to have created a group at Uppsala with a unique specialisation in the biochemistry and developmental biology of proteoglycans, in which Uppsala has a long tradition of world-leading research.

In the meantime, Johan is surprised that so few Swedish postdocs are familiar with EMBL. "When I took part in a tour of all the universities in Sweden last spring, I found that the knowledge of the existence of EMBL is very low, and based on word-of-mouth only. We need to find a way to reach out to those who are not familiar with it." And indeed, EMBL and the Alumni Association are taking steps to address this situation – see the announcements below...

– Klara Ledin and Mehrnoosh Rayner

Please mark your diaries:

- EMBL, the Royal Swedish Academy of Sciences and the Swedish Research Council are planning an EMBL/Alumni event for autumn 2008 in Stockholm. The event, organised by Anna Ledin and Mehrnoosh Rayner, will focus on the mobility of Swedish scientists abroad. Watch this space or contact alumni@embl.de for details.
- The online EMBL Alumni Association Board elections will begin in October 2008. To stand or nominate someone, please contact alumni@embl.de a.s.a.p. and no later than 30 May 2008. See www.embl.org/aboutus/alumni/aboutus/board/index.html.
- All former EMBL pre- and postdocs are invited to apply for a €1,000 cash prize offered by the John Kendrew Young Scientist Award for excellence in scientific research or science communication. Deadline: 12 September 2008. Nominations are also welcome. See www.embl.org/aboutus/alumni/news/oct07-3.html.
- Looking for a predoc? New applications have been entered into the EMBL International PhD Programme Shared Applicant Pool. See www.embl.org/training/phdprogramme/applicantpool.html.

We want to hear from you! Tell us about your personal or scientific achievements, an interesting event in which you are involved or give us feedback on alumni matters at alumni@embl.de.

newsinbrief

❑ **Free courses in the EMBL** Non-Scientific Training and Development Programme for the new year include Access Intermediate (29 Feb); Photoshop Basics (3-4 April); Illustrator Basics (9-10 April); Access Advanced (21-22 April); and Management Training in German/Wirksame Mitarbeiterführung (24-25 April). From spring, the programme is also providing language training in English, German and French in Heidelberg. Visit www.embl.org/staffonly/personnel/training_dev/index.html or e-mail td@embl.de for more details.

❑ **Both candidates** selected at last year's November Council meeting for appointment to EMBL's Scientific Advisory Committee have confirmed their willingness to serve. The new members in 2008 are Andrew Murray from Harvard (US) and Sandra Schmid from La Jolla (US), who will advise on the areas of genomics and systems biology and cell biology and biophysics respectively.

❑ **A Workshop on Physical Biology** on 17-18 January was the result of EMBL teaming up with a group of European laboratories to promote the interface between physics and biology. Stephan Grill from the MPI for the Study of Complex Systems in Dresden, Julien Husson from the AMOLF in Amsterdam and Pascal Martin from the Institut Curie in Paris got together with EMBL group leader François Nédélec as the "Physical Biology Circle" to organise the informal two-day event, which encouraged

students to present and discuss their work with talks and posters, with minimum involvement from more senior scientists. "The meeting was kind of unusual," said François. "Only PhD students and recent graduates gave talks, and the postdocs chaired the sessions. It was fun, and a very valuable experience for the students."

❑ **The upcoming EMBL International** PhD Programme 2008 Spring Selection has attracted the most applications ever – 732 in total. On 3-7 March, around 100 candidates will arrive in Heidelberg for interviews. The outstations will hold their interviews the week before.

❑ **The annual meeting of the Darwin Trust** on 17-18 November included a visit of the trustees to EMBL to meet the fellowship students. The four students, Agnieszka Zdanowicz, Eugenio Mancera Ramos, Pavel



Pavel Natalin, who's now at the MPI for Developmental Biology in Tübingen, chats to Darwin Trustee Prof. Sir Kenneth Murray

Natalin and Ömer Copur, presented a poster and had lunch with their benefactors, who also learnt about the ATC and the activities of EICAT.

❑ **The EMBO Science and Society** Programme is now inviting entries for the 7th EMBO Award for Communication in the Life Sciences. The award is presented to a practising life scientist who has made an outstanding contribution to the communication of science for the public. It consists of a personal prize of €5,000 and a silver and gold medal. Entries are accepted as self-applications or as nominations by a third-party, and must be submitted by 1 May 2008. Application/nomination forms and conditions can be found at www.embo.org/awards/communications.html.

❑ **Upcoming courses in the EMBL-EBI** Bioinformatics for Researchers training programme include Protein structural annotation (6-7 May); Patterns, similarities and differences in biological data (9-11 June) and Computational proteomics (21-24 July). Courses are open to all EMBL researchers and provide interactive training on the use of the EMBL-EBI's bioinformatics tools and resources. Visit www.ebi.ac.uk/training/hands-on/ for details of these and other courses.

❑ **The EBI's Annual Scientific Report** (BAC report) for 2007 is now available to download as a pdf from www.ebi.ac.uk/Groups/reports/current/AnnualScientificReportComplete.pdf.

from the Staff Association

Please note these events and opportunities:

❑ The Staff Association would like to invite all staff to their **Annual General Assembly** in EMBL Heidelberg's Large Operon on Friday 4 April. This will be a chance to learn about how the Staff Association has been working for you over the past year. In addition, we will be announcing the upcoming elections.

❑ Following the Assembly, the annual **Clubs Fair** will be held in the Operon Foyer. Joining a club is a great way to get to know other EMBL colleagues, and clubs are able to offer special rates on equipment and facilities due to Staff Association subsidies. The afternoon will be rounded off by the EMBL Theatre Club performing a short comedy, *Oedi*, by Rich Orloff. Free drinks and snacks will be available.

❑ Keep up-to-date with the Staff Association websites: www.embl-heidelberg.de/~staff/ (and for retirees, www.embl-heidelberg.de/~staff/pensioners/). – Catherine Floyd

science&society

Another year of scientific superstars

Since its launch in 2001, the Heidelberg Forum on the Biosciences and Society has welcomed dozens of 'scientific superstars' to give accessible public lectures downtown.

Until now, though, most of these lectures have been in German in an attempt to appeal to a local audience.

This year, though, all lectures will be in English, as the Forum, an initiative between EMBL, DKFZ, the University of Heidelberg's Centre for Molecular Biology and its Medical Faculty, welcomes three top women scientists and none other than former EMBL DG Fotis C. Kafatos.

"Now that we've built up a loyal following, we find that most audience members are able to enjoy the lectures in English anyway,"

explains Halldór Stefánsson, EMBL's Science & Society Programme Manager. "This will make them even more accessible to Heidelberg's many foreign inhabitants."

The Forum also gains a further partner in the form of the newly established Netzwerk Alternforschung (Network Aging Research; NAR), a local consortium at the university devoted to interdisciplinary research into aging. NAR will be involved in the sponsorship of two of the lectures, the first by Cynthia Kenyon on 27 February and Elizabeth Blackburn's in July.

Fotis will speak in May, and the final lecture of the year will be by Lena Peltonen on 23 October. For more details, see www.embl.de/aboutus/sciencesociety/hdforum/index.html.



New EBI team leader **Christoph Steinbeck**, an expert in cheminformatics for biologically-related small molecules, will be responsible for the chemistry-related resources at the EBI, including ChEBI (Chemical Entities of Biological Interest) and IntEnz. He will also develop the provision of chemical biology information in some of the EBI's other resources. Since his PhD in organic chemistry in Bonn in 1994, his group has worked on algorithms for computer-assisted structure elucidation of biological metabolites, as well as computational libraries and databases such as the Chemistry Development Kit (CDK).

Paul Flicek has been promoted to team leader at the EBI and will take responsibility for Ensembl (the vertebrates database) and the European Genotyping Archive (EGA). Paul's involvement with Ensembl dates from his arrival at the EBI in 2005, where he has since led a number of projects on functional genomics and variation. Prior to joining the EBI, Paul undertook his Doctor of Science degree in biomedical engineering with Michael Brent at Washington University, St. Louis, contributing to research and subsequent publications on both the Twinscan gene prediction program and the mouse and chicken genomes.



Sally Davison has joined EMBL Heidelberg in the newly-created position of Head of the Courses and Conference Office. Sally comes from Cheltenham, UK and studied Modern Foreign languages at the universities of Lancaster and Heidelberg. She has worked as an event manager in various companies in Germany, Switzerland and the UK, most recently at the University of Heidelberg and The Economist Group in London. Her hobbies include travel, cinema, meeting friends and swimming, and she is currently looking for a squash partner.



Florence Beye, the new Head of EMBL Heidelberg's Kindergarten, is half German, half French and lives in Mannheim. She carries a diploma in Social Education and Social Work and has completed a special training course in Kindergarten Management. She previously worked at the ECB childcare facility in Frankfurt and then at the "Kindernest" in Heidelberg. "I'm looking forward to working in an international kindergarten with a lot of bilingual children whose parents come from different cultures," she says. "I'd like to ensure that every child looks forward to coming every day, and that we offer interesting activities to foster development."



awards&honours

Recent former EMBL group leaders **Elisa Izaurralde** (left) and **Elena Conti** (right) have been awarded the Gottfried Wilhelm Leibniz Prize 2008 for their work providing fundamental insight into intracellular transport and metabolism of RNA. The two researchers, who left EMBL Heidelberg last year, combined their expertise in structural biology and biochemistry during their time here in collaborative studies that provided major advances in understanding RNA export, processing and turnover. The prize, awarded by the Deutsche Forschungsgemeinschaft (German Research Foundation), is the most prestigious German research prize in recognition of excellent scientific work, with a maximum of €2.5 million per award. This year it went to 11 researchers, eight men and three women, from 158 candidates. Six former recipients of the Leibniz Prize have gone on to win a Nobel Prize, including EMBL alumna Christiane Nüsslein-Volhard. Elena is now at the Max Planck Institute of Biochemistry in Martinsried and Elisa is at the MPI for Developmental Biology in Tübingen.



Wednesday, 27 February EMBL Heidelberg
Core Facilities Open Day: Room 202, from 10am

Thursday, 28 February EMBL Heidelberg
EMBL Distinguished Visitor Lecture: From worms to mammals: genes and cells that control the rate of aging. Cynthia Kenyon, University of California

28-29 February EMBL Heidelberg
Conference: European Cytometry Network Meeting

Wednesday, 5 March EMBL Grenoble
External Speaker: Post-genomic analysis of bacteria from the Rickettsia genus. Patricia Renesto, CNRS

Wednesday, 5 March EMBL Monterotondo
External Speaker: Neuroimaging of gene-environment interactions in affective processing. Turhan Canli, Stony Brook Uni., NY

Friday, 7 March EMBL Hamburg
External Speaker: Physiological proteomics of Gram-positive bacteria. Michael Hecker, E.-M.-Arndt-Universität Greifswald

Monday, 10 March EMBL Heidelberg
Science and Society: Evolution, Intelligent Design and the Meaning of 'Life Science'. Steve Fuller, University of Warwick

Tuesday, 11 March EMBL Heidelberg
External Speaker: The Neuronal Circuits Underlying Odor Perception in Mice. Alexander Fleischmann, Columbia University

12-14 March EMBL Heidelberg
Course: ELLS LearningLAB

Friday, 14 March EMBL Hamburg
External Speaker: The Determination of Protonation States in Proteins. John R. Helliwell, University of Manchester

Monday, 17 March EMBL Heidelberg
EMBL Distinguished Visitor Lecture: Danny Reinberg, Howard Hughes Medical Institute

Friday, 4 April EMBL Heidelberg
Staff Association General Assembly

6-11 April EMBL Heidelberg
Course: EMBO Course on High-Throughput microRNA Profiling

Tuesday, 8 April EMBL Heidelberg
Science and Society: Trussed in Evidence. David Healy, North Wales Department of Psychological Medicine, Cardiff University

For more details about these events and more, visit www.embl.org/events.