



## Work begins on the ATC

A groundbreaking ceremony on 6 October for EMBL Heidelberg's Advanced Training Centre welcomed special guests including Annette Schavan, Germany's Minister for Education and Research, sponsor Klaus Tschira and Baden-Württemberg's Minister for Science, Research and the Arts, Peter Frankenberg. The building, in the structure of a double helix, will be finished in 2009. It will house an auditorium for 450 people, teaching labs and seminar rooms, as well as facilities for outreach activities.

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## A non-crystallographer in Hamburg

After 30 years at EMBL Hamburg, Michel Koch retired this summer. During his career, which included a two-year stint as Head of Outstation, he investigated a wide range of scientific themes including the structure of the ribosome and chromatin folding. He'll be most remembered for setting up Hamburg's station for small-angle X-ray scattering (SAXS) and running it nearly single-handedly for two decades.

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## Not just a job for the boys

Women scientists at EMBL are invited to become "ambassadors" to visit schools and universities as part of a new EU-funded initiative. SET-Routes aims to tackle the problem of the underrepresentation of women in science, challenge old and outdated perceptions about the "typical" scientist and make traditionally male-dominated fields of study more attractive to women. The project consists of four initiatives: a start-up conference which is scheduled to take place at EMBL Heidelberg in May 2007, the School and University Ambassador Programmes and an Insight Lecture series.

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## A Meme Machine: Susan Blackmore visits EMBL

Ever asked yourself why it is that we have such big brains or why we are the only species to use language? Scientist, writer and philosopher Susan Blackmore says the answer lies in "memes". Since her book *The Meme Machine* was published in 1999, she has been the spokesperson for "memetics", the study of the building blocks of human culture. What memes are, where they come from and why there is still no science of memetics were some of the questions raised in her talk to an EMBL crowd at the Science & Society forum on 2 October. In an interview, she explains what memetics is all about, why it cannot quite be called a science and how she feels that scientific evidence is starting to back up her theories.

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## Nothing beats a retreat



First faculty and then the postdocs from all five EMBL sites took off this autumn for their annual retreats. They showed again that nothing can replace face-to-face encounters and an informal chat about work.

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# A non-crystallographer in Hamburg

## Michel Koch retires after 30 years

It's getting harder to find staff members who have been at EMBL since the Laboratory was founded. Every time one leaves, a bit of history and culture vanishes. That's certainly true of Michel Koch, who retired this summer after a 30-year career at the Hamburg Outstation.

In addition to a two-year stint as Head of Outstation in the early 1980s, partly with Joan Bordas (now director of the synchrotron radiation source in Barcelona), Michel's accomplishments include setting up Hamburg's station for small-angle X-ray scattering (SAXS) and running it nearly single-handedly for two decades, putting together new detector systems with André Gabriel, Christian Boulin and Francis Golding, and investigating a wide range of scientific themes including the structure of the ribosome, the assembly of virus capsids, actin and collagen, chromatin folding and questions about conformational changes in molecules.

When Michel joined Hamburg in 1977, small-angle scattering and diffraction were the main activities at the synchrotron beamlines; initially, in fact, there was strong resistance to the development of protein crystallography and X-ray spectroscopy (EXAFS), in which he was also involved. Ken Holmes was using small-angle diffraction in pioneering experiments on muscle at DESY, the Outstation's host. "The operating hypothesis at the time was that in muscle, myosin heads would become well-ordered during contraction, like rowers pulling at their oars in a synchronised way," Michel says. "Experiments by Hugh Huxley showed that this was the opposite of what happens: when muscle contracts, things become more disordered. As the Duke of La Rochefoucault said in 1670, there is no greater tragedy in life than the murder of a beautiful theory by a brutal gang of facts."

Within just a few years, the main orientation of work at the Outstation and most other syn-

chrotrons had shifted to crystallography, which permitted high-resolution snapshots of proteins in well-defined conformations. SAXS' strengths lay elsewhere: it could be used on molecules in solution, closer to their native state, and revealed aspects of their behaviour that were difficult to obtain otherwise. "I became convinced that what mattered for function was not structure, but rather structural change."

Michel remained a champion of SAXS, but at a price: it put him outside the mainstream as decisions were made about future directions of the Outstation. He resigned as Head of Outstation and devoted his time to maintaining the SAXS beamline, helping users and conducting his own research, mainly with Zehra Sayers (now professor at Sabancı University, Istanbul, and a regular visitor to EMBL Hamburg).

Another important discovery with Georg Büldt, Norbert Dencher and Gert Rapp was the observation of structural changes in bacteriorhodopsin as it pumps protons through membranes. SAXS showed that one helix moves during the pumping event, a mechanism later seen to be quite generally used by transmembrane helix proteins.

In the early days, EMBL's contract with DESY gave biologists three days of "main user time" per month; they could also do experiments in "parasitic time", as the storage ring was mainly used for high-energy physics experiments. That meant waiting for brief periods of X-rays that came and went at unpredictable times. These restrictions got Michel interested in synthetic polymers, which could be examined under such conditions; the aim was to understand structural changes that occur during processing, in conditions close to those used in industry.

Synchrotron radiation became such a crucial tool for molecular biology and materials science that in the early 1990s, DORIS became a dedicated source, with 300 days of beamtime per year; high-energy physicists were moving on to larger machines. Michel continued to man the beamline virtually alone, coming in every day, often at night and usually on weekends. In the 1990s he hired Dmitri Svergun, but rather than enlisting him in user support, Michel encouraged him to spend most of his time on software; this led to new methods for interpreting SAXS data to obtain higher-resolution information about molecules. This changed when Michel suddenly had to undergo triple bypass surgery in 2001.

"It was at that point that we all appreciated how hard he had been working all of these years," Dmitri says. "It now takes a team of people to do what Michel had been doing on a daily basis, and I believe it is largely thanks to him that these techniques have become truly appreciated again. I also have to say that the detector systems he built for small-angle scattering were among the best in the world."

If he had a parting message, Michel says, it would be that EMBL shouldn't neglect its original emphasis on the development of instrumentation. He cites pioneering projects at the beamlines, Jacques Dubochet's work with cryo-EM in the 1980s, and the type of work currently going on in Ernst Stelzer's lab in Heidelberg. "EMBL still has the capacity to do unique things that would be difficult or impossible in national laboratories," he says.

What sort of legacy does he hope to leave? Not a personal one; science shouldn't be about a "cult of personalities". A great beauty of science, he says, lies in the fact that the same results can be obtained by anyone willing to work hard enough to get them. "If ten percent of my work is remembered for ten years, I will be very happy," he says. — *Russ Hodge*

## Nothing beats a retreat



In an age of mobile phones, emails, webcams and video conferences, EMBL's Group Leaders have plenty of ways to exchange information about their projects, and to get input even from colleagues working thousands of kilometres away. But this year's Faculty Retreat, which took place on 13 September in Hamburg, showed once again that nothing can

replace face-to-face encounters and an informal chat about work away from the bench. Scientific sessions gave Group Leaders from all five EMBL sites a chance to present their work and get feedback from others from related and more remote disciplines. Newcomers Anne-Claude Gavin, Ramesh Pillai, François Spitz and Paul Bertone presented their science for

the first time, and Carl Neumann's talk on his investigation on scientific culture and creativity exceeded pure science. After an excellent dinner, there was time to socialise and pave the way to new collaborations. While the bulk of the Group Leaders left Hamburg in the evening of 14 September, the Senior Scientists stayed on for their bimonthly meeting.

## New EMBL/CRG partnership in Barcelona

A new EMBL partnership with the Centre for Genomic Regulation (CRG) in Barcelona is set to advance the understanding of complex biological systems.

Funded by the Spanish Ministry for Education and Science (MEC) for the next nine years, the joint research unit in Systems Biology will be located on the campus of the Barcelona Biomedical Research Park and will be headed by Luis Serrano, who will leave EMBL Heidelberg soon.

The EMBL/CRG partnership is dedicated to systems biology, an emerging area that

focuses on understanding and engineering complex biological systems. Its research will draw on the expertise of various scientific disciplines and will span the entire range from molecules to cells. The five multidisciplinary groups making up the unit will work with a variety of research techniques, including RNA interference, biochemical networks and mouse development.

"Systems biology is the future of biomedicine and in this new partnership we will combine theoretical and experimental approaches to better understand some of the

key aspects of human health," says Luis.

"Merging EMBL's expertise in computational biology with the CRG's knowhow in specific areas of genomics and proteomics will allow us to tackle some of the most challenging questions of systems biology," said EMBL DG Iain Mattaj at a public presentation of the agreement at the CRG on 7 September. "The EMBL/CRG partnership complements EMBL's network of fruitful institutional collaborations and underlines our commitment to serving all our member states."

# Not just a job for the boys

Women scientists at EMBL are invited to become "ambassadors" to visit schools and universities as part of a new EU-funded initiative, SET-Routes, which aims to tackle the problem of the underrepresentation of women in science, challenge old and outdated perceptions about the "typical" scientist and make traditionally male-dominated fields of study more attractive to women.

A consortium between EMBL, EMBO and CERN, SET-Routes is coordinated at EMBL Heidelberg by ELLS' Julia Willingale-Theune and for EMBO by Gerlind Wallon, who's responsible for Women in Science. It aims to send successful women in various stages of their careers in science, engineering and technology (SET) into schools or institutes of higher education to motivate young people, and girls in particular, to pursue further studies in SET.

The project consists of four initiatives: a start-up conference which is scheduled to take place at EMBL Heidelberg on 9-11 May 2007; the School and University Ambassador Programmes; and an Insight Lecture series.

"SET-Routes volunteer ambassadors will be addressing mixed audiences, but will be women," says Julia. "Predocs and postdocs, as well as more established scientists, are welcome to get involved; for school-age students, a younger role model can often be more effective.

"The ambassadors will receive training to develop talks and activities to take with them into schools and universities. The project covers the whole of Europe, so participants may choose to visit their own country to conduct activities in their mother tongue, and perhaps

even go back to the school or university they attended themselves."

The ambassadors will also act as role models to help alter the out-of-date perceptions of science in future generations. A database will be set up so that, even after the end of the programme, schools and universities will have access to a pool of some of Europe's best female scientists.

Some women scientists have already volunteered to become ambassadors. Lili Minichiello of EMBL Monterotondo has already attended the EU Gender Mainstreaming Conference in

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**"We want to show girls that science is an attractive career option, with lots of opportunities to make a difference"**

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Vienna in May this year, where the SET-Routes proposal was presented for the first time. Also in attendance there was Lucie Linsen, a researcher in particle physics who has volunteered to be an ambassador from the CERN side, and EMBO Member Renée Schroeder from the Vienna Biocenter.

"The start-up conference in May next year is intended to highlight the way forward," explains Gerlind. "There will be sessions about changing institutional culture and tackling pre-



conceived ideas about scientists and science politics. It will also serve as an arena for the exchange of good practice and ideas, and a number of activities and programmes have been invited to present themselves in a forum called 'the Bazaar' throughout the event."

The Insight Lecture series will kick off in 2007. The ten multimedia events including talks, question-and-answer sessions and demonstrations will be distributed via the web and on DVD to reach a wider European audience.

"As well as being pan-European, the project is fully interdisciplinary, too," says Julia. "We aim to give young women scientists in all fields a positive idea of what is happening in Europe to implement gender mainstreaming. The message is 'you're not alone'."

Rolf Landua, Head of Education at CERN, is the coordinator for the project there. "Women are hugely underrepresented, especially in physics, and we're already dedicated to doing whatever we can about this unnatural state of affairs. In our ambassadors we'll be looking for scientists who can convey excitement and enthusiasm for the subject.

"We want to show girls that science is an exciting, attractive career option, with lots of opportunities to discover new things and to make a difference."

If you're interested in becoming an ambassador, contact Julia at [willingale@embl.de](mailto:willingale@embl.de).

## An onGOing success

The Gene Ontology Annotation (GOA) database – coordinated by the EBI to provide standardised descriptions of what gene products actually do – now contains more than 10 million annotations to over 2 million proteins.

The GOA project ([www.ebi.ac.uk/GOA](http://www.ebi.ac.uk/GOA)) connects the Gene Ontology, a detailed and highly structured “dictionary” of all the things that gene products do, with the gene products that perform these activities. By associating each protein in the UniProt Knowledgebase,

and each gene product in the Ensembl genome browser, with relevant functional descriptions in the Gene Ontology, GOA provides researchers with a powerful means of searching for genes or proteins that have similar functions, and also helps to correlate long lists of genes or proteins derived, for example, from microarray studies or proteomics experiments, with the processes that they perform.

The large-scale assignment of GO terms to proteins is done electronically using pre-existing information in UniProt entries. This electronic annotation is combined with high-

quality manual annotation performed by curators who are experts in their field.

Since joining the GO Consortium in 2001, the GOA group has focused on providing high-quality annotation of the human proteome. GOA is now committed, as part of a wider GO Consortium effort, to the comprehensive annotation of a set of disease-related gene products in human as well as other mammalian species. By generating a reliable set of GO annotations to these reference genomes, the GO Consortium hopes to make the annotation of other proteomes faster and more accurate.

– Evelyn Camon and Cath Brooksbank

# Do you know what I meme?

Susan Blackmore talks about her favourite subject *By Anna-Lynn Wegener*

Ever asked yourself why we have such big brains or why we are the only species to use language? The answer, says scientist, writer and philosopher Susan Blackmore, lies in “memes”. In the Science & Society forum on 2 October she addressed an EMBL audience about memetics and afterwards gave us further insights into this thought-provoking subject.

**What exactly is a “meme”, and what’s memetics all about?**

Memetics are to our culture what genes are to our body. They are stories, songs, skills, habits, languages, religions or scientific theories that are copied from person to person and compete to build up our culture.

The idea started in Richard Dawkins’ 1976 book *The Selfish*

*Gene*. He was trying to popularise the idea that evolution happens not for the sake of the species or the individual

but for the sake of the gene. The gene is a replicator – that is, information that is copied with variation and selection – so leading to evolution.

But genes aren’t the only replicators. Memes are also information that is copied between people and evolves over time. In biology our DNA is replicated, this process introduces variation, and the variant genes compete to be passed on. Similarly, parts of our culture get copied with variation when we imitate other people, from songs and stories to designs for buildings, technologies and social institutions.

Memetics looks at human culture as an evolving system according to the Darwinian principles of competition and selection. Most other theories assume that we humans are in

charge: we made culture for our own benefit, we created language and religion for ourselves, because we are clever and they benefit us. But in memetics humans are seen as the copying machinery – the meme machines – rather than the creators. As soon as humans started imitating, culture emerged itself as a consequence of the replication process.

**Is there any scientific evidence for memes?**

Well, yes and no. Some of the predictions that I made in 1999 in my book *The Meme Machine* – some of them quite wild at the time – have come true. For example, I wrote that language could be considered a kind of viral system created by memes for their own benefit. The general theory is that a replicator will spread better when it has high-fidelity copying. Sounds don’t last, but if you split them up into words and digitise them you can copy with high fidelity. So I suggested that as soon as people began imitating sounds, the memes were organised into words and developed grammatical rules. Now, researchers working in artificial language have shown that robots that make noises and copy each other can generate a new language spontaneously: the sounds are cut up into words and after some time grammar develops.

**Would you call memetics a science?**

I don’t think it will really count as a science until there are enough people doing it so that it can develop its own methods. Also, the concept is too counter-intuitive and too frightening. People, even scientists who are quite used to thinking of us as being gene machines, don’t like the idea that we are “meme machines” designed by mindless information in order to get itself copied. They still prefer the idea that “I am me and I can make decisions to shape the world around me”.

But I think it will happen eventually. I’m not abandoning hope that one day there will be a European Memetics Laboratory.

“Memes govern culture in the way that genes determine our biology; they are stories, songs, skills, habits”

**In biology it is the survival of the fittest that determines the course of evolution. What chooses which memes survive?**

Many memes are copied because



Photo: Maj Britt Hansen

## Postdocs gather for second retreat

More than 60 postdocs from all EMBL Units came together for the 2nd EMBL Postdoc Retreat from 30 September to 2 October. Following on from the success of last year's event, held at the monastery of Saint Odile in Alsace, we opted for a little more luxury and headed for the spa hotel of Limes Thermen, Aalen. The programme featured talks by invited speakers and EMBL postdocs, poster presentations and intensive discussion of the postdoctoral experience at EMBL. There was also time for more informal interaction and to take advantage of the superb facilities.

One motivation behind the event was to encourage communication between postdocs in different units. Unlike the pre-docs, who start at a specific time along with their peers and have numerous opportunities to integrate quickly into the EMBL community, postdocs tend to find it much more difficult to get to know each other. Despite being a diverse group in terms of research subject, we also face many common challenges, and benefit greatly from the opportunity to forge contacts and discuss issues, both scientific and non-scientific.

Many agreed that a highlight of this year's event were the talks by the invited speakers, which focused on how to do science from the vantage point of both established and junior investigators. Drawing from numerous experiences during his own illustrious career,

keynote speaker Dr Peter Lawrence from the Laboratory of Molecular Biology, Cambridge, provided personal recommendations for successfully conducting science. We were encouraged to ignore trends, take risks and work on big, challenging questions, and to look out for those "personal moments of discovery" that make every scientist's career worthwhile, whether they are recognised by the wider community or not. This inspirational model was perfectly complemented by presentations by three EMBL alumni who are now young group leaders in Europe. Marco Milan, Joost Schymkovitz and Freddy Frischknecht provided practical advice on how to find a job and start a lab in Spain, Belgium and Germany, respectively. This was particularly useful for the more senior postdocs who will face similar challenges soon.

The retreat concluded with a session devoted to discussion of postdoc issues and plans for future of the Postdoc Association. While many different opinions were expressed during this session, it also provided the Association with a new mantra, courtesy of the EBI – "A postdoc is a state of mind" – and there was unanimous agreement that such retreats are extremely useful and should definitely continue.

– Kat Brown and Kent Duncan

[www.embl.org/staffonly/generalinfo/postdocs/association.html](http://www.embl.org/staffonly/generalinfo/postdocs/association.html)



Time for reflection: postdocs discuss what they've heard during a pause in the programme.

Photo: Sean Hooper

## External Manager comes from the inside

She could have been moving to a life of sun, sea and sangria, but Phil Irving has decided that EMBL Heidelberg is the only place to be. Instead of accompanying the rest of Luis Serrano's group to Barcelona (her former position was Science Manager for External Grants for the SCB unit), she's agreed to take up the new position of External Grant Funding Manager, based at EMBL Heidelberg but serving all the Outstations too.

The position was created in recognition of the need for more support for scientists, particularly in areas such as the management and maintenance of grants. EMBL has decided to increase

resources over and above those already provided by the Grants Office, and part of Phil's role will be to develop the management of external grants which are already in place and to set up a mechanism for increasing the support given to scientists EMBL-wide by bringing together grant provisions in one place.

Phil will shortly be meeting all those Group Leaders she doesn't already know, including those at the Outstations. "Despite the temptation of Barcelona, I'm glad to be staying to take up this position," she says. "I've got a season ticket to the Neckarwiese, after all, so who needs a beach?"

Phil can be contacted at [irving@embl.de](mailto:irving@embl.de)

## Tune in to Nadia

Head of EMBL Monterotondo Nadia Rosenthal has been invited to deliver the 2006 Howard Hughes Medical Institute Holiday Lectures, which will be webcast live towards the end of the year.

Nadia joins a prestigious list of former speakers including Nobel laureate Thomas Cech and cancer expert Bert Vogelstein. Also delivering lectures alongside her this year will be Doug Melton, co-director of the Harvard Stem Cell Institute, and the title of their series will be "Potent Biology: Stem Cells, Cloning, and Regeneration".

The Howard Hughes Medical Institute's (HHMI) Holiday Lectures on Science were inaugurated in December 1993, originally as a lecture series for high-school students living in the Washington DC region. By 1995, the series was being widely distributed to libraries and schools to give more students the unusual opportunity to hear from scientists doing cutting-edge biomedical research, and by 1997, the lectures were being broadcast by satellite and, later, webcast.

Over the years the audience for the series has grown from hundreds to many thousands. In addition to worldwide DVD distribution, the series is also carried on numerous TV stations in the USA. The Holiday Lectures have won numerous awards.

Nadia will deliver two lectures entitled "Adult Stem Cells and Regeneration" and "Stem Cells and the End of Aging", covering basic research with some emphasis on clinical implications. As part of the lecture series, students will perform regeneration experiments, and will also participate in a discussion surrounding the ethics of stem cell research led by HHMI bioethics advisor Jonathan Moreno of the University of Virginia.

"We are very excited to have Nadia and EMBL help us bring the international nature of science to students," says Dennis Liu, director of the lecture series. "We estimate conservatively that the audience for the Holiday Lectures is now in the hundreds of thousands, and we anticipate that the stem cell series will be in high demand."

You can watch Nadia's live broadcast on the HHMI website, [www.hhmi.org/biointeractive](http://www.hhmi.org/biointeractive), on 30 November and 1 December. After 4 December the lectures will be available as on-demand streaming video on the same site.

## Breaking new ground: ATC building started

If you're at the Main Lab or have visited recently, you'll certainly have noticed that work has started on the new Advanced Training Centre (ATC).

Annette Schavan, Germany's Minister for Education and Research, was one of the special guests at EMBL Heidelberg for the ground-breaking ceremony on 6 October. Also attending the event were key sponsor Klaus Tschira and Baden-Württemberg's Minister for Science, Research and the Arts, Peter Frankenberg. EMBL's Member States were represented by Council chair Eero Vuorio.

The next date in the ATC's calendar is the Richtfest, a traditional "topping out" party for the construction workers, which is due to take place some time in 2007.

The building, in the structure of a double helix, will feature an auditorium for 450 people and a display area for the presentation of posters. In the planned teaching labs and seminar rooms, EMBL's International Centre for Advanced Training (EICAT) will organise courses and practical workshops for scientists



Peter Frankenberg, Klaus Tschira, Annette Schavan, Iain Mattaj and Eero Vuorio

Photo: Udo Ringelsen

at all stages of their careers. The building will also provide room for the training of teachers and other outreach activities.

The ATC will feature some cutting-edge, environmentally friendly technology in its thermostatic self-heating system. In warm weather, the glass walls of the building will absorb heat or sunlight from outside and the internal heating system will adjust or switch off accordingly, thus saving energy.

When the building is completed in 2009, the surroundings will be carefully landscaped and replanted with local trees and shrubs.

All EMBL staff will be invited to join in the festivities at the huge party when the ATC is all finished – and enjoy some long-awaited peace and quiet afterwards...

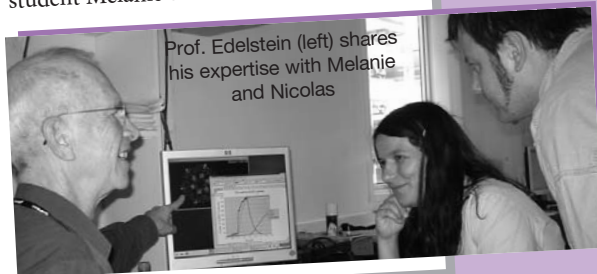
For more information about the progress of the building works, visit the dedicated web pages at [www.embl.org/atc](http://www.embl.org/atc).

## EMBL's arms are wide open to all

Having a visitor to your group can be beneficial to all parties involved. These three labs have welcomed some very different temporary adoptees over the past few months.

### #1: The professor

Stuart Edelstein, who before his retirement was Head of the Department of Biochemistry at the University of Geneva, is visiting Nicolas Le Novère's group at the EBI for six months. Professor Edelstein, who was awarded the *Légion d'honneur* in 2003, is one of the worldwide experts on allosteric proteins and spent years studying cooperative oxygen binding and the structure of haemoglobin, especially the helical fibres of the sickling mutant, as well as neurotransmitter receptors. At the EBI he is studying the role of allosteric proteins in the function of synapses with particular reference to CaM-kinase II, alongside PhD student Melanie Stefan.



Prof. Edelstein (left) shares his expertise with Melanie and Nicolas

### #2: The schoolgirl

Anna Caspani from Milan joined Cornelius Gross' lab at EMBL Monterotondo for a month this summer. Anna, who's just 16, came top of 170 candidates in an Italy-wide competition in which teachers nominated their most promising students, and Cornelius was happy to host the winner. "It's always nice to have high school students livening up the place," he says. "It was a big deal for her because it was her first time away from home, too. She got involved in some experiments and number crunching, and was very helpful."

Anna took a lot of useful experience away with her. "I found out that being able to work as part of a team is an important part of being a scientist," she says. "It's also the most fun part!"

### #3: The conscriptee

Ronit Shapira had to apply to be allowed to leave Israel during her military service to spend a week at EMBL with GeneCore. The 19-year-old was a winner in the 17th EU Contest for Young Scientists in Moscow on 17-21 September last year with her project "The effect of dietary components on the dopamine mechanism in Parkinson's disease". Her EIROforum-sponsored prize was a placement with Vladimir Benes' Core Facility to learn more about their technologies.

It's quite a change of scene for Ronit, who has been working as a medic in the armour corps near Eilat for most of the past year. "This week at EMBL has been very interesting and helpful, as I'm trying to decide whether to pursue a career in medicine or research," she says. "As well as GeneCore I've visited other labs including Carsten Schultz's and the Proteomics Core Facility. I've met lots of really nice people this week."



L-r: Vladimir, Ronit and Sabine Schmidt from GeneCore

Photo: Marietta Schnupp

## the EMBO corner

### Success in research: Formula of a Gold Medal winner

If Frank Uhlmann had pursued his childhood fascination for physics and cosmology, he might never have taken the path that won him the EMBO Gold Medal last month. Fortunately, biochemistry also captured his attention, culminating in what EMBO describes as "a decade of extraordinary work that has revolutionised our understanding of the cell cycle".



The Gold Medal marks an incredible high point in his career, says Frank, and one he could never have predicted during his undergraduate studies at the University of Tübingen or his PhD at the Memorial Sloan-Kettering Cancer Center in New York. Even as a postdoc at the Research Institute of Molecular Pathology (IMP) in Vienna, where

he made his first major discovery, Frank had no grand plans to make a career in research or run his own lab, as he now does at the London Research Institute (LRI).

For Frank, each next step has been driven not by ambition, but by a pure and simple passion for his subject. "All I knew was that the work was super-interesting. I just did what I enjoyed without thinking where it would lead." This unpretentious approach paid off and Frank went on to work for Hans Probst, Jerry Hurwitz and Kim Nasmyth. "I was very lucky to have such inspiring role models. I learned a great deal from them and was constantly motivated."

Frank cites other factors that have helped in his career. A six-year diploma in biochemistry at the University of Tübingen provided him with a thorough grounding in a variety of disciplines. Regular laboratory work gave him a feel for the bench early on and a year-long placement in six different labs at the Max Planck Institute for Biochemistry in Martinsried exposed him to a wide range of techniques and experimental approaches.

The scope of this early training, combined with some very productive research experience in biochemistry during his PhD, stood Frank in good stead for his postdoc at the IMP. It was there that he really put his multidisciplinary background to work, combining novel tech-

niques in biochemistry, cell biology and genetics to uncover the trigger for mitosis, one of the most significant events in the life of eukaryotic cells. Frank has pushed these discoveries even further since setting up his own group at the LRI, deciphering other mechanisms that are key to understanding how mistakes in mitosis can lead to cancer.

An impressive track record, but Frank remains modest, attributing a large part of his success to being in the right place at the right time. "I was lucky to join the IMP at a time when Kim and others had already established the field and big questions were still waiting to be answered." Kim Nasmyth is more effusive about the "special blend of technical competence, good judgement and fearlessness" Frank brought to the lab. "Frank was the one who took the risks and pulled off a remarkable series of experiments."

When asked what it takes to make it in research, Frank stresses the need to be focussed. "There are numerous interesting questions out there, but you have to be able to focus in on good problems." He also has some valuable advice for researchers starting out at the bench. "Things are not always as complicated as they seem. Test the simplest hypotheses first."

– Lindsay Johnson

[www.embo.org/communities/embo\\_medal.html](http://www.embo.org/communities/embo_medal.html)

## Not quite Lost in Translation



Julie and Rudi enjoy a Tokyo temple during their trip to Japan

Heidelberg PhD students Rudi Walczak and Julie Cahu took up the chance of a lifetime last month, when they travelled to Japan on a trip supported by the Shimura Award.

Their stay included five days at the 11th International *Xenopus* Meeting on 12-16 September. It was the first time in twenty years that the meeting was held in Japan – at Kazusa Akademia Park, Kisarazu City, to be precise. Both Julie, from Thomas Surrey's group, and Rudi, who's in Iain Mattaj's lab, work with *Xenopus* and were excited to have the chance to listen to the range of expert speakers working with this model system.

The second part of their travels included a visit to the National Institute of Basic Biology (NIBB) in Okazaki, with which EMBL signed a

collaboration agreement last year. Part of this agreement stipulated that students receive aid to visit scientific institutes in Japan. Rudi and Julie met many of the researchers and found many similarities with EMBL. "It's a very dynamic place dedicated to excellent science, which attracts many motivated scientists from all over Asia, just like EMBL does here in Europe," says Rudi.

The pair also managed to fit in a couple of days of sightseeing in Kyoto and Tokyo – including a sumo wrestling match and a visit to Tokyo's famous Tsukiji fish market – before returning to Heidelberg on 23 September. "It was my first time in Japan, and it's so different from home," says Julie. "I was really happy to have the chance to go."

## ERC: Opportunities for young scientists

Via the European Research Council (ERC; <http://erc.europa.eu>), the EU is offering new funding instruments especially for young scientists. The ERC will be officially launched with FP7 early next year and is a major step towards the realisation of a pan-European agency to support scientific research.

The Starting Independent Researcher Grant will target scientists within ten years of their PhDs and will provide funding for up to five years. The Advanced Investigator Grant for more established scientists will be launched later. The ERC has €54.6 billion available for the next seven years.

EMBL Group Leaders are eligible for all ERC grants. Applications will be reviewed by one of the 20 panels, seven of which are for life sciences.

The ERC is also establishing its structure and staff. Recently the appointment of the first secretary general was announced: Ernst-Ludwig Winnacker, head of the Deutsche Forschungsgemeinschaft (DFG), will occupy the post until June 2009, after which economist Andreu Mas-Colell from Barcelona will take over.

## from the Staff Association

**New face in the Staff Association office:** Catherine Floyd took up her duties as administrative assistant to the Staff Association on 9 October and will replace Ann Thüringer, who is leaving in mid-January after nine years at EMBL. Catherine has lived in Germany for several years and comes to EMBL from the British Tourist Authority. She works fulltime, so the SA opening hours are now more convenient for staff.

**Unterer St. Nikolausweg:** The Staff Association has been working with Administration to urge the city of Heidelberg to issue permits for the Nikolausweg to all EMBL employees who live on “the other side of the mountain”. This would include those who live in towns that do not immediately border on the Königstuhl, such as Mauer, Meckesheim, Zuzenhausen and Wiesenbach. We hope that the Traffic Department and Mayor Beate Weber will reconsider the city’s recent decision.

**Bierfest:** The Staff Association is organising the first, perhaps annual, Oktoberfest for EMBL staff. Unlike the real Munich Oktoberfest, ours will actually take place in October! The main attraction is the beer, of course, with side dishes of Bavarian Weißwurst, pretzels and who knows what else? Maybe oom-pah music? In any case there will be a live band and the usual EMBL good spirit. The date is Friday 27 October and the fun will start at 19.00.

**Over the top:** At last count, the Gothaer Company had received 97 contracts for voluntary long-term care insurance from EMBL staff members. In order for the medical exam to be waived, 100 contracts are needed. So if you are interested, but just haven’t got around to signing up, get those forms filled out ([www.embl.org/staffonly/personnel/longtermcare.html](http://www.embl.org/staffonly/personnel/longtermcare.html)). Your contract could put us over the top!

- Ann Thüringer

[www.embl-heidelberg.de/~staff/](http://www.embl-heidelberg.de/~staff/)

## CISB news out now

Scientists from the Centre for Structural Biology (CISB) consortium partners in Grenoble have banded together to produce a newsletter dedicated to CISB science, announcements and events.

The team, which comprises EMBL Grenoble’s Josan Márquez, Susana Teixeira (ILL), Dominique Housset (IBS), Laurent Terradot (ESRF), and Florence Baudin (IVMS), hope to produce *CISB et al.* at least twice a year and would be very grateful for contributions.

The CISB is a collaboration between major international partners and operates from the newly opened Carl-Ivar Brändén Building next door to EMBL Grenoble.

You can download *CISB et al.* from [www.embl-grenoble.fr/research/partners/cisb.html](http://www.embl-grenoble.fr/research/partners/cisb.html).



## “I will never forget their smiles” – an Indian adventure



Lodovica (back row, second from left) with the Calcutta orphans and fellow volunteers

An EMBL alumna’s rewarding experience helping orphans in India this summer all started with a promise she made as a ten-year-old girl 20 years ago.

When Mother Teresa visited Lodovica Borghese’s home town of Colleverde, on the outskirts of Rome, the youngster met personally with the famous “Angel of Mercy” herself, and later vowed to visit her in India one day.

Former EMBL PhD student Lodovica, who left Pernille Rørth’s group in Heidelberg in April, didn’t quite make it within Mother

Teresa’s lifetime, but she spent two months in India this summer, one of them with the Missionaries of Charity in Calcutta.

This refuge and orphanage, which is the headquarters of the worldwide charity organisation, was Mother Teresa’s first home for the destitute and dying. The nuns and monks have served the poor and the sick for decades, and it’s also one of Calcutta’s most visited spots, where tourists can see Mother Teresa’s burial chamber.

Lodovica volunteered at the mission when

she arrived in Calcutta – there’s no pre-registration or official processes – and donated €270 which she had collected at EMBL’s Italian party in April.

She spent the month caring for the orphans and handicapped children alongside other unpaid helpers from Korea, Japan, the USA and Europe. Volunteers take part in the activities at this and other centres of the mission for varying lengths of time from weeks to over a year. “The other helpers came from all over the place. It was a bit like EMBL in that respect,” Lodovica says.

She was helped throughout her trip by Shubhroz Gill from the Indian Institute of Technology at Kharagpur, who she met when he spent the summer of 2005 with the Rørth group, and who provided invaluable guidance and support during her stay.

Lodovica’s now busy with her postdoc studies at the University of Bonn, but she’d love to travel again one day to help orphans in another part of the world, in particular South America. She also hopes that other PhD students will be inspired by her story to do something similar.

“I really wanted to do something very different at the end of my PhD, before starting as a postdoc,” she says. “It’s a good chance to fit in some travel and experiences such as this before the hard work starts again.

“It was great to help the kids but I think I got even more out of it than they did. I will never forget their smiles; they have nothing, but they gave me so much in terms of love.”



## Molecular imaging draws a big crowd

**F**RET, FRAP and FLAP were just some of the topics covered by the 44 speakers at the International Summer School on Molecular Imaging at EMBL Heidelberg on 4-8 September, which attracted many more attendees than expected.

About 140 young scientists, mostly predocs and postdocs, came from all over Europe and even as far afield as Iran for the week of talks and practicals, a joint venture of three EU-funded networks: the Integrated Project on Molecular Imaging, Diagnostic Molecular Imaging (DiMI), and the European Molecular Imaging Laboratory (EMIL). Some of the top names in the fields of new microscope technology, single cell imaging, new fluorescent proteins and fusions, and multiparameter and multimodal imaging were among the speakers.

EMBL's own imaging experts Philippe Bastiaens, Jan Ellenberg, Ernst Stelzer, Rainer Pepperkok and Timo Zimmermann contributed with presentations, while outside speakers included Konstantin Lukyanov, the leading developer of fluorescent proteins in Europe; Eva Sykova and her attempts to mend broken spinal cords; Carsten Hoffmann talking about his impressive application of FAsH labelling of the adrenergic receptor; Brian Bacskai with his spectacular imaging of

Alzheimer plaques; and Paul French on the cutting-edge technology of novel confocal microscopes.

Around half the attendees were able to take part in a series of practicals on fluorescent techniques during the afternoons. Using eleven cutting-edge microscopes from EMBL and the University of Heidelberg, including Christoph Cremer's state-of-the-art 4Pi equipment, participants were able to gain hands-on experience in areas such as confocal and wide-field imaging. In an additional initiative, there were parallel sessions on PET and MRI applications.

Carsten Schultz, organiser of the event alongside Andreas Jacobs from the University of Cologne, was pleased with the attendance. "This was the second such Summer School we've organised, and it has been a resounding success. The interest of so many people shows that the development of imaging techniques plays an important role in molecular biology as a whole," he says. "Having the equipment to provide the practicals next to the lectures was a real bonus. But we could not have done the practical teaching without the help of other consortium members, especially Dorus Gadella and his group from Amsterdam and the Cremer lab downtown."



Carsten Schultz introduces the summer school to a packed Operon

Photo: Marietta Schupp

## News from the Alumni Association

### Upcoming events for your diaries

- On Monday 6 November, an Alumni Association Board Meeting will be held at EMBL Heidelberg from 11.00 to 17.00 in Room 208. If you have any issues you would like the Alumni Association to discuss, please contact Mehrnoosh Rayner at [alumni@embl.de](mailto:alumni@embl.de) before the Board Meeting.
- On Saturday 9 December the first ever US Local Chapter Meeting will take place in San Diego. Organised in conjunction

with the American Society for Cell Biology Annual Meeting, the event will take place from 13.00 to 18.00 at the Hilton San Diego Gaslamp Quarter Hotel. For more details, please refer to the programme at [www.embl.org/aboutus/alumni/chapters/usa.html](http://www.embl.org/aboutus/alumni/chapters/usa.html).

- Keep up to date with Alumni Association news and Local Chapter Meetings in your area at [www.embl.org/aboutus/alumni](http://www.embl.org/aboutus/alumni).

## news&events

□ **The second issue of *Science in School***, EIROForum's journal to promote inspiring science teaching, is available from the OIPA offices in Heidelberg or online at [www.scienceinschool.org](http://www.scienceinschool.org). Contact editor Eleanor Hayes at [hayes@embl.de](mailto:hayes@embl.de) if you'd like to submit an article.

□ **The application deadline** for 2007's winter selection of the EMBL International PhD Programme is 1 November 2006. An online application form is available at [www.embl.org/training/phdprogramme](http://www.embl.org/training/phdprogramme). Interviews will take place for Heidelberg from 29 January to 2 February 2007, and in the week prior to that for the Outstations.

□ **Three South Korean** journalists paid a visit to EMBL Heidelberg on 9 October as part of an initiative of the BMBF and the Goethe Institute to bring visitors from the press in the Far East to scientific institutes in Germany.

□ **Vicky Robinson of the UK's** National Centre for the Replacement, Refinement and Reduction of Animals in Research will give a talk, "Improving science and animal welfare", at EMBL Heidelberg on 17 November as part of the Science & Society Forum series.

## ECM in Leuven

**C**ystallographers from all over Europe descended on the picturesque university city of Leuven, Belgium, for a week in August for the 23rd European Crystallographic Meeting. EMBL was represented with a stand in the exhibition area, and scientists were in attendance to let visitors know about the institute's facilities.

EMBL's attendees also contributed to the conference with talks and presentations. From EMBL Hamburg, Michel Koch chaired a session on SAXS and SANS, and Victor Lamzin one on high quality diffraction data; Jochen Müller-Dieckmann introduced his high-throughput crystallisation services offered at EMBL Hamburg; Santosh Panjikar talked about Auto-Rickshaw; and Manfred Weiss saved the day with a talk on tuberculosis when another speaker dropped out. EMBL Grenoble's Christoph Müller talked about the nucleosome remodelling factor CHRAC, and from EMBL Heidelberg, Hannes Simader presented yeast aminoacyl-tRNA synthetase complex formation.

As well as the science, the organisers and sponsors laid on some special events for the evenings, most memorably a Belgian Beer lecture and a party in the topmost ball of the Atomium in nearby Brussels.



**Hüseyin Besir** is the new head of the Protein Expression and Purification Core Facility. Hüseyin did his PhD at the MPI for Biochemistry in Munich before working as a postdoc at Roche Diagnostics in Penzberg, after which he returned to the MPI to look at protein expression and crystallisation and protein-protein interaction analysis. "The Core Facility will continue to provide support and tools for protein expression and purification and biophysical characterisation of proteins according to the needs of the users," says Hüseyin.

**François Spitz** joins Heidelberg's Developmental Biology Unit as Group Leader. After his PhD at the Institut Cochin de Genetique Moleculaire in Paris, he did his postdoctoral studies at the University of Geneva, looking at the regulation of homeotic clusters. His group will focus on the cis-regulatory architecture of the vertebrate genome and try to understand the mechanisms impacting on gene expression and evolution. Some of their chromosomal rearrangements in the mouse will reproduce human abnormalities associated with developmental defects.



**Rebecca West** is the latest addition to Administrative Director's Office at EMBL Heidelberg. As Senior Project Officer she'll be developing EMBL's vocational training programme according to the needs of staff. Originally from London, Rebecca has had a variety of jobs, working as a music teacher, a civil servant and later becoming Head of Policy and Performance in local government in London. When she's not at work Rebecca can be found mountain-biking in the woods or playing tennis.

**Brian Hamel** has joined Heidelberg's Audit Office as Head of Internal Audit. Originally from Liverpool, England, Brian completed a degree in German and Russian at Bristol University before training as a chartered accountant. He then worked for PricewaterhouseCoopers in Prague for seven years in external/internal audit and various consulting roles. For the last five years he was with a Swiss life sciences group, LONZA, most recently as Head of Corporate Audit with a focus on business risks.



## awards&honours

A Heisenberg Fellowship from the Deutsche Forschungsgemeinschaft (DFG) has been awarded to **Christian Thoma**, a postdoc in the Hentze lab at EMBL Heidelberg. Christian will use the prestigious fellowship, of which there have been only two awarded this year so far, to start his own lab at the University of Freiburg. "I chose to be affiliated with both the Institute of Molecular Medicine and Cellular Research and the Department of Medicine at Freiburg because it allows me to return, in part, to my roots in medicine," he says. With his new group, Christian plans to continue the work he has done here at EMBL on the molecular mechanisms of cellular IRES-driven translation. For more information about DFG funding, visit the website at [www.dfg.de/en/research\\_funding/programmes\\_at\\_a\\_glance.html](http://www.dfg.de/en/research_funding/programmes_at_a_glance.html).

The **7th EMBL/EMBO Joint Conference 2006 on Science and Society** at EMBL Heidelberg on 3-4 November is entitled "Genes, Brain/Mind and Behaviour", a subject inspired by the past few years' notable advances in the neurosciences and brain-scanning technologies, as well as in the ongoing research into how genes influence behaviour. Speakers and panelists will include Barry J. Dickson of the IMP in Vienna, top neurophysiologists Wolf Singer and Jean-Pierre Changeux, and Steven Rose, author of *From Brains to Consciousness? Essays on the New Sciences of the Mind*. "While new knowledge coming out of the neurosciences has an enormous potential for beneficial applications in diverse fields, increased capacity for treating or manipulating the mind will also have important social, legal and bioethical implications," says Science and Society Officer Halldór Stefánsson.

Mani Arumugam (Bork), Vsevolod Belousov (Schultz), Claire Blachier-Batisse (Böttcher), Richard Bourgon (Huber), Petr Chlanda (Griffiths), Michele Cianci (Wilmanns), Chad Davis (Russell), Danielle Desravines (Hart), Eva Ebinger (Social Services), Ibrahim Emam (Microarray), Martin Etzrodt (Nédélec), Antje Fischer (Arendt), Catherine Floyd (SA), Daria Gavriouchkina (Neumann), Veronica Gonzales Nunez (Neumann), Patrycja Grabowska (LAR), Martin Grana (Thornton), Jelena Gvozdenovic-Jeremic (Gavin), Paul Hassa (Ladurner), Anne Hermelin (IT Services), Guus Heynen (Akhtar), Valerie Hilgers (Cohen), Gemma Hoad (Sequence Database), Sebastien Huet (Ellenberg), Apar Jain (Gross), Bjarki Johannesson (Schultz), Arnaud Kerhornou (EBI Database Applications), Roman Kostyuchenko (Arendt), Marika Krudwig (LAR), Karla Langer (Müller, C.), Regis Lemaître (Pillai), Tatyana Makushok (Brunner), Concepción Martínez (Minichiello), Alvaro Mateos Gil (Pepperkok), Reinhard Mayr (Knop), Andrea Murachelli (Conti), Gregor Reither (Schultz), Julia Rumpf (Sattler), Nicolas Sadoni (Stelzer), Marco Salomone Stagni (Meyer-Klaucke), Thomas Schmich (Purchase), Helena Schweizer (Social Services), Tobias Stuwe (Ladurner), Els Wessels (Pepperkok), Zhenyu Xu (Steinmetz)

## events@EMBL

23-30 October Hamburg

**EMBO Practical Course:** Solution Scattering from Biological Macromolecules

24 October Heidelberg

**EMBL Distinguished Visitor Lecture:** Sean Munro, MRC Cambridge: The Arls – a family of GTPases involved in specifying organelle identity

31 October-1 November Hamburg

**Course:** First beamline workshop, PETRA-III @ DESY

16 November Heidelberg

**EMBL Distinguished Visitor Lecture:** Graham Bell, Dept. of Biology, Director of Redpath Museum, Montreal: The effect of gene deletion on growth in yeast

20-23 November Grenoble

Winter Council Meeting

20-23 November Monterotondo

Heads of Units/Senior Scientists Meeting

30 November-2 December Heidelberg

**8th International EMBL PhD Student Symposium:** Biology of Disease – A molecular battlefield

4-8 December Heidelberg

**First Online EMBL PhD Symposium:** Life Sciences – Shaping the Future

For more events, please visit [www-db.embl.de/jss/EmblGroupsOrg/events\\_2](http://www-db.embl.de/jss/EmblGroupsOrg/events_2)