

EMBL *etcetera*

Issue 60 • December 2010 • www.embl.org/newsletter



What's the difference between men and women?

A record 350 people packed into the EMBL Advanced Training Centre for this year's two-day EMBL/EMBO Science and Society Conference. 'Differences Between the Sexes: From Biology to Behaviour' attracted people from over 35 countries, as well as around 20 journalists reporting for international, national and local media. World-renowned speakers, whose expertise transcends a broad range of disciplines, led a debate that carried on long after event had concluded.

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Presidential recognition



EMBL Hamburg's Dmitri Svergun is awarded a special prize by the Russian government for his contribution to SAXS. Turn to page 6

Meeting of minds

Winter Council Meeting sees positive evaluation for new five-year programme, however final approval has been postponed until June 2011

At EMBL's final Council meeting of the year, which took place in Heidelberg, delegates gave a positive evaluation to the new five-year programme, which Council uses to decide on EMBL's budget. However, final approval has been postponed until the next Council Meeting in Grenoble in June. New investments in research facilities were announced, as well as some new faces on the Scientific Advisory Committee (SAC).

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Launch of Euro-BiImaging project



Winter council meeting in Heidelberg Meeting of minds

The next EMBL Programme - outlining EMBL's future plans and activities and forming the basis for the five-year budget - received a positive evaluation. However, final approval has been postponed to the next Council meeting in Grenoble, June 2011.

Keeping EMBL at the forefront of life science research, some exciting purchases were approved: a new Biacore 3000 Interaction Analysis System for EMBL Grenoble, a Third Generation Sequencing System for the Genomics Core Facility, and a Laser Confocal Microscope for the Developmental Biology Unit.

The annual Scientific Advisory Committee (SAC) meeting, which evaluates and counsels EMBL activities, will take place 6-7 May in Heidelberg. The next reviews will examine EMBL-EBI Services, Heidelberg's Developmental Biology Unit, and EMBL Hamburg. Four new members have been elected to the SAC, which is increasing maximally to 18 members to cover new areas of research. SAC Vice-Chair Sandra Schmid and Andrew Murray have been reappointed for a second three-year term.

Fifty-five nodes in 23 countries have applied to join ELIXIR, which aims to construct a sustainable infrastructure

for biological information in Europe. A Memorandum of Understanding between potential ELIXIR members will be the first step towards implementing the project.

Finally, Iain Mattaj thanked Nigel Watts and Brita Beije, who are resigning from their posts as UK and Swedish delegate respectively. New Chair of the EMBL Finance Committee will be Jeannette Ridder-Numan (Netherlands) and new Vice-Chair Benjamin Sanchez Gimeno (Spain). Eero Vuorio (Finland) was re-elected as Chair of EMBL Council, Vice-Chaired by Reinhard Lührmann (Germany) and Claudio Sunkel (Portugal).

Russia signs Memorandum of Understanding



Collaboration and cooperation were on everyone's mind when members of the Russian Federation for Basic Research (RFBR) visited EMBL Heidelberg on 3-4 December.

Vladislav Panchenko, President of the RFBR, was joined by Academicians Olga Dontsova, Alexey Egorov and Alexander Gabibov from Moscow State University, who represented the University's chemistry of natural compounds, enzyme engineering and biocatalysis laboratories respectively.

A packed programme included an ideas exchange with EMBL senior scientists and a tour of the Core Facilities. In the spirit of reci-

procity and accord, Academician Panchenko also gave members of the EMBL Directorate a fascinating insight into the RFBR. EMBL already has close ties with Russia, not least through the EMBL International PhD Programme partnership with Moscow State University, and scientific collaborations of the Lamzin, Svergun, Schultz and Arendt groups.

Building on this burgeoning relationship, a memorandum of understanding was signed with a view to Russia becoming an EMBL member state. With Russia's particular expertise in mathematics and physics, as well as biochemistry and zoology, all parties are excited about the opportunities ahead.

Third node opens in Nordic partnership

The third 'node' in the Nordic EMBL Partnership for Molecular Medicine officially opened on 11 November when Norway's Centre for Molecular Medicine (NCMM) was inaugurated at its launch event.

Established in 2007, the partnership includes the universities of Oslo, Umeå and Helsinki, with established nodes at NCMM, the Laboratory for Molecular Infection Medicine Sweden (MIMS) and the Institute for Molecular Medicine Finland (FIMM). The partnership seeks to combine complementary expertise, working closely with EMBL in rising to challenges in biomedicine and fostering industry collaborations.

Key research at NCMM will include neurobiology, medical genetics, infection medicine and cancer. The Norwegian government has allocated NOK50 million (around 6.3 million Euros) over a five year period. It will double this amount should the centre prove successful.

The event included presentations from representatives of EMBL, the Norwegian



EMBL director of international relations Silke Schumacher speaking at the launch event

Government, NCMM and other partners. Kjetil Taskén, director of the NCMM said: "It is this cutting-edge expertise that forms the basis for the EMBL partnership and we expect the collaboration to generate many important research findings in the future."

NCMM is the second research centre in Norway to form a partnership with EMBL, the first being the Sars International Centre for Marine Molecular Biology in Bergen.

Business lunch

Dr Georg Schütte, State Secretary in Germany's Federal Ministry of Education and Research (BMBF) responsible for research organisations, visited EMBL Heidelberg in November, accompanied by Dr Jan Grapentin, EMBL Council delegate and BMBF colleague.

Over a business lunch, DG Iain Mattaj introduced EMBL's diverse activities and its unique culture. Dr Schütte also learnt about EMBL's leading role in ELIXIR from director of international relations Silke Schumacher and its participation in INSTRUCT, as one of six core centres, from Head of EMBL Hamburg Matthias Wilmanns.

ELIXIR (European life sciences infrastructure for biological information) and INSTRUCT (integrated structural biology infrastructure) are near the end of their EU-funded preparatory stages and are now looking for financial support from the the European Strategic Forum on Research Infrastructures (ESFRI) member states.

Good science in good company

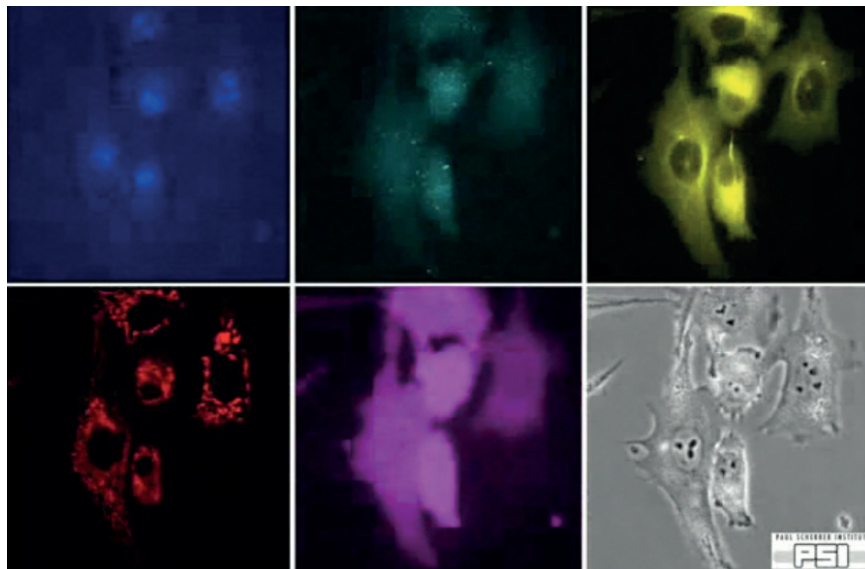
EMBL Grenoble group leader Imre Berger tells Sarah Stanley about the innovative MultiLabel technique, its potential applications, and how great ideas can arise when you least expect it

Take a couple of good friends and some beautiful scenery, add a few beers, and you just might get some scientific inspiration. It was in such an invigorating setting that Grenoble group leader Imre Berger and Philipp Berger from the Paul Scherrer Institut in Villigen, Switzerland, got talking about MultiBac, a technique Imre had developed to produce multiple protein complexes by introducing the encoding genes all at once into insect cells.

“We were relaxing and discussing work,” Imre says, “and over the second beer we had this idea: why not take the MultiBac principle and use it to label many components of mammalian cells simultaneously?”

Their thoughts and experiments resulted in MultiLabel, a new technique to introduce multiple genes into mammalian cells. The proteins encoded by the genes can be labeled with fluorescent markers, so several features in each cell can be highlighted at the same time.

Previously, the only way to get multiple markers into mammalian cells was to introduce each gene separately, limiting scientists to two or three labels at a time



and often yielding messy results. So Philipp and Imre designed a way to combine a theoretically unlimited number of genes into a single plasmid – a loop of DNA. The engineered plasmids are then added to cells. Because each plasmid contains all the genes of interest, each gene is present in the same ratio in each cell.

“To have all labels in all cells at the same ratio; this has not been achieved before,” Imre says. “The method is simple – good science is often simple – but it’s a big deal conceptually.”

The technique has a wide variety of potential applications, including drug development and screening. Using proteins introduced by a single plasmid, “you can

monitor many components of a pathway that you think is involved in a particular disease process and add a certain drug to see what influence it has,” Imre says.

MultiLabel has been used to colourful effect in the cells shown here. Nuclei are blue, tubulin (a component of the cell’s scaffolding) is yellow, mitochondria are red, vesicle membranes are cyan, and other membrane structures are purple. The same cells are shown in each frame. The image is a still from a video that can be viewed on the EMBL website and YouTube channel.

“This is one of those cases where two friends tossed a few ideas around, and then just put them into motion,” Imre says. “This, I think, is how science should be.”

Discovering our past: Bacteria present a surprising clue

EMBL Heidelberg scientist Damien Devos and EMBL alumni Emmanuel Reynaud (now at University College Dublin) have developed a new hypothesis for the evolutionary origin of eukaryotes – organisms whose cells have a nucleus.

Eukaryotes, such as humans, are one of the three major domains of life; the other two are bacteria and archaea. A widely held hypothesis states that eukaryotes arose when two organisms, one bacteria and one archaea, fused together. An alternative theory is that archaea and eukaryotes could each have evolved independently from a common bacterial ancestor.

The latter explanation was rejected mainly because scientists could find little evidence for intermediate steps between bacteria and

the other two domains. But Damien and Emmanuel have now found that such intermediate forms do exist in the Planctomycetes, Verrucomicrobia, Chlamydia (PVC) bacteria.

“Our entry point was a specific protein

“The implications are enormous for the origin of our cells and I’m sure we’re only seeing the tip of the evolutionary iceberg”

– Damien Devos

that we found only in eukaryotes and PVC members and have characterised previously,” Damien says. “Then when we looked at the literature, we found more and more com-

mon characteristics. People had noticed some similarities, but nobody had ever looked at them globally.”

These shared features suggest that, instead of a bacterium fusing with an archaeon, an ancestral PVC bacterium evolved into the lineage that would eventually give rise to archaea and eukaryotes.

“We still know very little about the PVC bacteria, so we need to study them more,” Damien says. “The implications are enormous for the origin of our cells, and I’m sure we’re only seeing the tip of the evolutionary iceberg.”

The work was published in *Science* on 26 November.

From bench to bedside



Scientists from EMBL and the Medical Faculty of the University of Heidelberg convened on 26 November for a special event as part of the 625-year celebrations of the University. 'Perspectives for Translational Medicine in Heidelberg' brought together scientists from the two institutions, which work closely in collaboration through the Molecular Medicine Partnership Unit (MMPU).

Scientists gave presentations across a broad spectrum of basic and clinical research areas, addressing themes such as stem cell research, cancer therapy and the development of influenza vaccines and antivirals. Participants were encouraged to seize opportunities to broaden the scope of the partnership.

MMPU comprises five international research teams jointly headed by experts from both institutions. The arrangement combines the complementary expertise of basic and clinical researchers to discover the molecular mechanisms that underlie common diseases.

The five teams will soon be brought together

within the Otto-Meyerhof-Zentrum, provided by the University of Heidelberg. This common space includes lab and patient care facilities, enabling truly integrated molecular medicine research, from bench to bedside.

Claus Bartram, dean of the University's Medical Faculty hailed the success of the partnership in speeding the transformation of discoveries in biomedical sciences into applications. "We are proud of this unique operation, working together with one of the world's most foremost research institutes," he said. "The MMPU is a cross-disciplinary platform with remarkable potential to make real advances in finding treatments for disease."

Matthias Hentze, associate director of EMBL and co-director of MMPU said: "The partnership provides great opportunities for both medicine and basic science. Medicine will benefit by achieving a deep molecular understanding of diseases and basic science will gain important models to understand key biological processes."

Project advances understanding of genetics

4.9 trillion letters of DNA have been sequenced in the recently completed pilot phase of the 1000 Genomes Project, which seeks to uncover the millions of variations between genomes of different people. Project scientists will sequence the genomes of 2500 people by 2012, and have already found eight million previously unknown genetic variations among 800 people.

The 1000 Genomes Project is a major international collaboration that includes a team of researchers at EMBL-EBI led by Paul Flicek, as well as the Heidelberg group of scientists led by Jan Korbel. The insights it provides into human genetic variation are expected to have a big impact on studies of the genetics of disease and evolution.

The results of the pilot phase are published in *Nature* and are freely available online through EMBL-EBI and the US National Center for Biotechnology Information (NCBI).

Get the message

You have produced some good results, but as you come to present them rather than a standing ovation you are left with restless, uninspired and bewildered onlookers

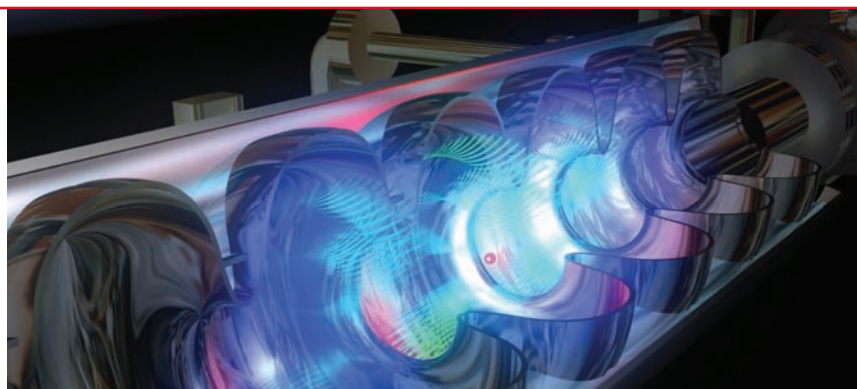
An EIROforum training course, aimed at countering such scenarios, was delivered at EMBL Heidelberg on 19-20 October, bringing together scientists from the intergovernmental research organisations that comprise EIROforum. The 'Convincing Scientific Presentations' workshop gave experienced scientists and researchers from a broad range of disciplines the opportunity to reflect on how scientific ideas, models and results are communicated to people who might be outside their own areas of expertise.

The two-day seminar, instructed by communications experts Matthias Mayer and Meike Teubner, focused on developing skills in presenting to small, medium and large audiences, with a special focus on designing effective visuals.

Many of those who took part praised the course for the opportunity it provided to exchange ideas with colleagues from other fields of expertise and learn about effective methods of science communication.

More information available at:

www.eiroforum.org



Here in a flash

The Directors General of the EIROforum have unanimously accepted the European X-Ray Free-Electron Laser Facility (European XFEL) to become its eighth member.

Located on the DESY site in Hamburg, the European XFEL is currently under construction. But from 2014 it will generate intense X-ray flashes at a brilliance one billion times higher than conventional X-ray radiation sources. Researchers from academia and industry worldwide will use the facility.

The European XFEL is one of the big research infrastructure projects Europe feels it needs to fulfil its scientific ambi-

Who is EIROforum?

The mission of EIROforum is to support European science reach its full potential by facilitating interactions with the EC and European Union, national governments, industry, science teachers students and journalists. The eight members are: EMBL, CERN, ILL, ESA, ESO, ESRF, EFDA-JET and European XFEL.

tions over the next two decades. It is expected the facility will enable scientists to achieve many new insights in physics, astrophysics and biology.

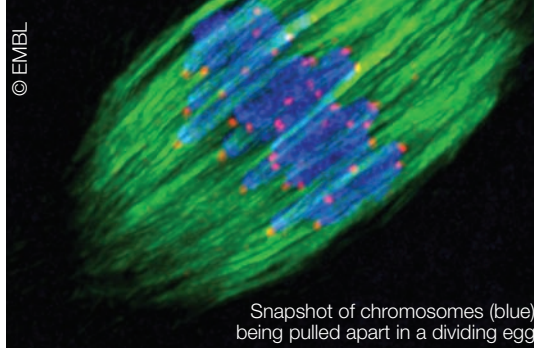
Francesco Romanelli, EFDA-Jet DG and the current Chairman of EIROforum, greeted the new addition: "We are pleased to welcome the European XFEL into the EIROforum and look forward to working with our new partner."

Open access imaging

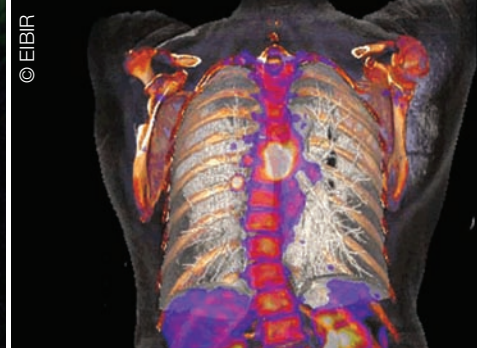
Sonia Furtado reports on the launch of Euro-BioImaging, an innovative project that aims to provide research, training and innovation in biomedical imaging

Scientists and institutions across two fields have united in a quest for better images – but this is not a PR stunt. Instead, the goal is to grant biological and biomedical researchers across Europe open access to state-of-the-art imaging techniques and technologies. This coalition is Euro-Bio-Imaging, a project within the European Commission's European Strategy Forum on Research Infrastructures (ESFRI), which launched its preparatory phase this month.

“Euro-BioImaging will support research, training and innovation in biological and



Snapshot of chromosomes (blue) being pulled apart in a dividing egg



biomedical imaging on a pan-European level,” says Jan Ellenberg, the project's scientific coordinator for biological imaging.

The idea is to create infrastructure facilities in many different European countries, with each facility acting as a ‘node’ in the overall network, to overcome the current fragmentation of imaging infrastructure. A call for applications for nodes will be issued later in this preparatory phase.

By bringing together key research areas, from basic biological imaging and molecular imaging to clinical and epidemiological imaging, Euro-BioImaging will also

make it easier to translate results from basic research into medical applications.

A key aim of the project is the continuous development of image research technologies to offer as a service to the scientific community. To make the most of any commercial opportunities that arise, Euro-BioImaging has already formed an industry board which includes all leading vendors and producers of biomedical imaging equipment in Europe.

The project is scientifically coordinated by EMBL and the European Institute for Biomedical Imaging Research (EIBIR).

ESPOD: The new postdoc programme

EMBL-EBI has teamed up with the Wellcome Trust Sanger Institute to offer the EBI-Sanger Postdoctoral (ESPOD) programme, with projects that combine experimental (wet lab) and computational approaches. These two institutes share the same campus in Hinxton, fostering strong collaborative relationships. Applicants can select projects from a list or propose their own. ESPODs complement the EMBL Interdisciplinary Postdoc (EIPOD) programme.

Two fellowships were offered this summer from 56 applications. The successful candidates – Francesco Lorio and Karthi Sivaraman – will start early 2011.

The next round of applications will open early next year. To apply, please contact Tracey Andrew on tandrew@ebi.ac.uk. www.ebi.ac.uk/training/postdoc/ESPOD.

Small size, big impact

Because of the distinct requirements of Small and Medium-Sized Enterprises (SMEs), the ‘Annual Information Workshop on Bioinformatics Resources’ organised by the EMBL-EBI's Industry programme is important in making users in SMEs aware of services that could speed advances in sectors such as health-care, consumer goods and agrochemicals.

This year's workshop was no exception, as representatives from around 40 companies convened in Munich at the office of the regional biotech cluster, Bio-M, and the European Patent Office (EPO) on 18-19 October to learn about the data, resources, tools and services freely provided by the EBI and its various collaborators.

Building on the success of previous events in Hinxton, Berlin and Vienna, the workshop featured presentations from representatives of the EBI, the EPO, Bio-M and SMEs. It provided a two-way forum for sharing insight and expertise.

Topics covered included chemoinformatics



and chemogenomics, text mining and patent and web services. The lively and productive discussion was complemented by hands-on tutorials that underlined the value of such services.

“SMEs are often driven by shorter-term business expedients than their larger counterparts,” explains Dominic Clark, the EBI's industry programme manager. “Our experience is that SMEs benefit most from knowledge dissemination meetings that focus on freely available tools and information resources, which can add value to their business processes immediately.” A fifth workshop is being organised for 2011, with the support of a regional development agency and the involvement of the EPO.

Workshop, agenda and presentations are available at: www.enfin.org/SME2010

Meeting demand

EMBL-EBI and the Beijing Genome Institute in Shenzhen (BGI-SZ), China, jointly organised a workshop on ‘Data Transmission for International Genomics Projects’, held in Shenzhen on 7-8 October.

One issue high on the agenda was the increasing demands placed on bandwidth

and storage space that result from large international genome sequencing efforts, such as the 1000 Genomes Project. Participants were most interested in cloud computing and a new network protocol to speed up data transmission.

Workshop co-organiser Weimin Zhu of the EBI said: “The unique thing about this workshop is that it brought together everyone involved in the data transmission

process – from the sequencing centres that generate the data, through to data service providers such as EMBL-EBI and network service providers from across the globe. This enabled us to address the issues at each stage of the process and to discuss possible solutions.”

The UK's Biotechnology and Biological Sciences Research Council funded the workshop.



Major international prize awarded by the Russian government to Dmitri Svergun

Presidential recognition for SAXS

On 3 November EMBL Hamburg group leader Dmitri Svergun collected a prestigious international prize for the developments in nanodiagnostic at a plenary ceremony of the Rusnano Forum in Moscow opened by the Russian president Dmitry Medvedev.

Dmitri, together with Lev Feigin of the Russian Academy of Sciences, was presented the 2010 Rusnano prize for work in the field of Small Angle X-ray Scattering (SAXS).

The approach was originally designed for studying biological complexes, but later they also used it successfully to analyse nanomaterials. The award recognises the rapidly growing scientific and commercial

applications of SAXS in areas such as material science, biology and medicine.

Dmitri says the award is deserved recognition for the method. "For me, it is very important that the prize went to SAXS-related development this year. It underlines the potential of the technique," he says.

He points to the challenges faced in convincing many in the scientific community of its possibilities. "To overcome these we made the novel approaches we designed - in particular computer programs - easily accessible worldwide," he says. "The entire EMBL Hamburg SAXS group worked really hard in methods development and

in maintaining numerous collaborations with international users at our synchrotron beamline, X33, which made it possible to observe the present renaissance of SAXS in structural biology."

In Hamburg his research will carry on apace. "We shall continue our work in this direction, using the new high brilliance PETRA III synchrotron facility, which will be a great leap forward," Dmitri explains.

On hearing the news, Head of EMBL Hamburg, Matthias Wilmanns said: "This is a great recognition of Dmitri's work, and we are very pleased that he has been presented with such a prestigious award."

ERC grant for Peer

EMBL Heidelberg's Peer Bork has been awarded an ERC Advanced Investigators Grant of more than 2.3 million Euros for pioneering research into microbial communities associated with cancer.

It is one of only a small number of grants awarded by the European Research Council (ERC) to senior life science researchers across Europe, selected from over 600 proposals. The sole criterion of the grants is excellence. His project, titled 'CancerBiome', aims to identify features of human microbial communities linked to three different cancers (cervical cancer, squamous cell carcinoma and colorectal cancer).

The five-year grant will enable Peer and his group to study whether certain microbial communities, genes or pathways are more commonly found in the bodies of cancer patients than in healthy people. The project will then seek to understand whether this information can be used in diagnostics. He will work closely with Magnus von Knebel Doeberitz at the Medical Faculty at the University of Heidelberg as part of the collaborative Molecular Medicine Partnership Unit (MMPU). On obtaining the grant, Peer said: "This is a very prestigious grant and I am very happy that it will enable us to pursue this important research."

EMBL Grenoble group leader Ramesh Pillai, EMBL Heidelberg group leaders Francesca Peri and Marcus Heisler and incoming group leader Takashi Hiiragi have also been awarded ERC grants in recent months.

SAXS to the future

The BioSAXS group led by Dmitri Svergun at EMBL Hamburg can breathe a sigh of satisfaction following another action packed and successful EMBO Practical Course on 'Solution Scattering from Biological Macromolecules' held at the end of October.

The course, held biannually at EMBL Hamburg, is aimed at young scientists active in related structural methods with little or no experience in solution scattering. The eight-day meeting covered the basics of SAXS/SANS, instrumentation, data collection, modeling techniques and complementary use with other methods.

It involved a combination of lectures, hands-on practical sessions and time to socialise in a relaxed atmosphere.

Run for the fifth time at EMBL Hamburg, the organisers received a record 140 applications and the quality of the 26 chosen participants, from 18 nations, was particularly high. Course co-organiser Al Kikhney says that the course was exhausting, as always, but great fun and a huge success: "We have had really positive feedback from the students and tutors, who had a great time and really appreciated the effort that went into organising the course."

Bilateral meeting in Hamburg: A tradition continues



Just over 20 participants attended this year's EMBL Hamburg-Grenoble bilateral meeting at EMBL Hamburg on 18-19 November. The structural biology groups from the two sites meet every year to exchange ideas and news on the latest developments in the field of synchrotron facility instrumentation. This year's meeting sessions were focused on high throughput crystallisation and sample characterisation, BioSAXS, MX beamlines, computational infrastructure and control software. Part of the success of these regular get-togethers is that the groups stay in close contact between meetings, and while there were few surprises during this year's two-day meeting, the participants enjoyed the chance to meet up once again and strengthen the cooperation between the sites.

Christmas in warmer climes

Three 1970s alumni now living in exotic locations share some warmth this chilly festive season...



Toby and one of the 'Chatumaharaja' – four great kings who protect the Buddhist world

Torben Poulsen in Thailand

Then: Administrative Assistant, Administration, 1976–1998

Now: Retired and living in Thailand

Coming to EMBL ... “I was tired of the three-day work week, endless strikes, bomb explosions and annoying hoaxes of early-70s London. The job interview, conducted by Sir John Kendrew was, to my relief, in English (I had exaggerated my knowledge of German).

EMBL in the 70s... “The greatest ‘culture shock’ was the informality: as purchasing manager, I wasn’t happy about getting chemical requests written on the back of envelopes!

After EMBL ... “My late wife and I spent a few years in Thailand studying Thai; it’s a fantastic country and I have since remarried and settled here.

Connections to EMBL ... “Belinda Bullard, Kevin Leonard, and Michael Reedy asked us to collect live giant water bugs for their work. I negotiated with monks in rural temples, offering a donation if they caught 200!

The festive season ... “Most Thais are Buddhists but will never miss an opportunity to party. I escape the bedlam by driving 800 km to beautiful beaches.

I enjoyed my recent visit to the lab and would be glad to show any staff or alumni the beautiful north of Thailand.”



On the verandah of the Leberman's 100-year-old villa



Feeding a Madagascar lemur on the verandah – Madagascar is a world centre for primate studies

Patrick Laboeusse in Madagascar

Then: Staff Scientist, Instrumentation, 1978–1985

Now: Chairman, Labo Meca UMS, Madagascar

Coming to EMBL ... “It was a completely new life. I was 27 and came directly from Paris – working in the workshop I had to learn German very quickly!

After EMBL ... “I went to Madagascar 11 years ago to find some freedom – where the sun shines every day and food is fresh. Life is very simple here, but when you feel free there are highlights every minute! The company is expanding into Africa and I will move to the Ivory Coast next year to build a new workshop.

Connections to EMBL ... “I am still in contact with Marie-Thérèse Dauvergne in Grenoble.

The festive season ... “Madagascar is an ex-French colony so the traditions are very similar, especially Christmas; the music is more African, and for food we have fresh crab, lobster, prawns, and plenty of vegetables and fruit.”

Reuben Leberman in New Zealand

Then: Group Leader and Senior Scientist, Cell Biology and Biophysics, 1976–1998

Now: Retired, Honorary Research Fellow Massey University

Coming to EMBL ... “I helped set up wet labs in Heidelberg and later Grenoble, where I continued my research. In 1983 I had a eureka moment: finding the relationship between the G-binding domain of EF-Tu and p21.

After EMBL ... “We moved to New Zealand in 2002 with our younger daughter, who has Asperger’s syndrome, to be nearer our elder daughter. After a year settling in our century-old villa, situated north of Wellington, an enquiry to the University about library facilities led to an interview upon which I was awarded an Honorary Research Fellowship.

The festive season ... “A major difficulty for us Europeans is dealing with the seasonal differences: while many in Europe are thinking of turkey, snow and skiing, we are thinking of barbecues, beach and summer holidays – it feels wrong! Many New Zealanders have a sort of Christmas celebration in June – the middle of Winter down-under.”

Generous gift to John Kendrew Award fund

The EMBL Alumni Association is thrilled with a generous gift of €20,000 from Roland Specker in support of the John Kendrew Young Scientist Award – an Award that singles out and rewards former EMBL pre- and postdoc for their achievements in science and science communication.

A stellar entrepreneur, and owner of Intermedex and the ISG Hotel and Guest Houses, Roland Specker has generously used his organisational talents and interests during his career to support a range of noteworthy arts and cultural projects. One of these gained him the Federal Cross of Merit (Bundesverdienstkreuz) in 2002, namely making possible the wrapping of

the Reichstag by Christo.

It is nice and quite original that Mr Specker now adds young scientists to his philanthropic interests, though this is not the first time that he supports the EMBL Alumni Association, which received a donation from him for the 2004 reunion.

Mr Specker was drawn to support this Award because it keeps alive the name, ideals and values of EMBL's first Director General, for whom he has fond working memories. He hopes that future hopeful awardees "will not be put off by what looks like insurmountable obstacles, rather they will, like John Kendrew, keep their objectives and their vision firmly in mind and work hard to achieve them".

The Alumni Association would also like to thank the Endowment Foundation for a generous donation of €1000, supporting the return of awardees to EMBL to share their post-EMBL experience and advice.

All donations, large and small, are gratefully received – please visit www.embl.org/kendrewdonation

2011 JKA winner

The EMBL Alumni Association Board is delighted to reveal the winner of the 2011 John Kendrew Young Scientist Award.

Amaicha Depina was selected for her commitment to, and originality in science communication to children, students, teachers and the public in Argentina.

The Board was also inspired by her efforts to promote science and science education through workshops and collaborations.

Amaicha attracted significant funding after EMBL and maintained high scientific standards under challenging circumstances. "This is passion for science which needs to be rewarded," said board member, Bernard Hoflack.

The Board is thrilled that the standard of applications continues to be so high and the achievements so diverse, making the job of the selection committee very challenging! All candidates who are still eligible to apply in the next year are strongly encouraged to do so.

EMBL Alumni Association warmly wishes you a very Merry Christmas and a Happy New Year! Thanks for staying in touch and please continue to do so at alumni@embl.org

Fotis Kafatos' metamorphosis

Revealing the transformations – past, present and future – of EMBL's third Director General, Fotis Kafatos

In the late 1960s, while describing the elegant biological and biochemical process of metamorphosis in the silk moth, thereby earning his professorship at Harvard, Fotis Kafatos may have been unaware that his career would itself be remarkably transformative.

Fotis' father, a Greek immigrant, was determined to educate himself and his family, so Fotis studied both poetry and biology as an undergraduate at Cornell. He went on to become a precocious scientist, gaining a PhD and immediately becoming Professor of Biology at Harvard.

Subsequent professorships and institution building at the universities of Crete and Athens led to Fotis' selection as the third Director General of EMBL. This, in turn, culminated in his successful metamorphosis

to founding President of the new European Research Council (ERC), a position he held until March 2010.

Now, perhaps with the same sense of freedom as the silk moth 'imago', Fotis is focusing on affairs close to his heart: malaria research, writing memoirs, family, and starting the new Cyprus Scientific Council. Unlike the fixed and orderly process of metamorphosis, however, Fotis' commitments require constant juggling!

In November, Fotis received the Robert Koch Gold Medal in Berlin for his life's work on malaria and insect immunogenomics. He continues his research at Imperial College London with EMBL alumni Dina Vlachou and George Christophides.

Building on his life-long commitment to



At the top of the Greek Parliament building, having been awarded the Parliament's medal this summer

science education in Greece, Fotis will be returning to Cyprus to provide advice on research policy and serve on a jury for the Nemitsas Prize, a major new award for young Cypriot scientists worldwide.

In future, Fotis intends to focus his energies on capturing the story of a life's transformations in his memoirs. In the midst of all these commitments, poetry remains his favourite diversion.



EMBO director Maria Leptin welcomes participants



Geneticist Eva Jablonka addresses the crowd



Delegates queue to ask questions

Spot the difference?

A record crowd at this year's Science and Society Conference includes scientists, journalists, students and members of the public from all walks of life

Throughout history, differences between men and women have provoked intrigue, speculation and contention. And as over 350 people filled the Klaus Tschira Auditorium to debate the topic at this year's EMBL/EMBO Science and Society Conference, it was clear that the issue matters as much today as ever before.

Held in the EMBL Advanced Training Centre for the first time, participants heard speakers address a diverse interplay of psychological, social and physical factors over four distinct sessions at 'Differences Between the Sexes: From Biology to Behaviour' on 5-6 November.

The University of Cambridge's David Bainbridge gave a powerful overview of differences in the sexual characteristics of men and women. "For the first time in history we understand how sex determination in humans works. And now we are also asking: why does

it have to be this way?" he said. Other speakers followed with engaging talks: Eric Vilain of UCLA considered differing impacts of genetics, hormones and the environment; Margaret McCarthy of the University of Maryland reflected on differences in the brain; and Susan Pinker of the *Globe and Mail*, Canada identified evidence that she believes contradicts common assumptions about the biology of men and women.

Presentations sparked lively and provocative discussion sessions, with members of the audience queuing up to offer thoughts or challenge speakers. Topics moved from the nature of gender roles to personalised healthcare via scientific and social implications, with people from a broad range of backgrounds getting their opinions across.

One highlight was when anthropologist Helen Fisher gave participants an insight into

the science of romance. "What people will do when they fall in love is absolutely staggering," she said, before explaining how biology directly relates to different personality traits in men and women.

The audience included people from over 35 different countries as well as around 20 journalists reporting on the event for international, national and local media, ensuring that the debate continued far beyond the plenary hall. As one participant summed up: "Very good opportunities for discussion, excellent speakers covering all important aspects."

"I do not think we have had a Science and Society meeting where the sessions ranged so widely and produced so many interesting questions," said EMBL DG Iain Mattaj.

The subject of next year's event is 'Making Sense of Mental Illness: Biology, Medicine and Society' and will take place 4-5 November.

EMBO at global forum on research integrity

In July this year, more than 300 delegates from almost 60 countries came together in Singapore at the 'Second World Congress on Research Integrity' in order to develop recommendations on structures for promoting integrity and discuss unsolved problems in their home countries.

Hosted by the three major Singaporean universities and the Agency for Science, Technology and Research, more than 80 speakers and conference participants discussed topics such as plagiarism, data falsification, responding to misconduct, and training of students in best practice. Following the welcome addresses by the local hosts, including Education Minister Ng Eng Hen, keynote speaker David Vaux from the La Trobe University in Australia kicked off the meeting by showing examples of inappropriate use of image software and statistics in scientific publications.

Maria Leptin, Director of EMBO, provided a European perspective by speaking

about how EMBO integrates the topic within its programmes. Bernd Pulverer, Head of Scientific Publications, presented the transparent review process implemented in EMBO journals.

"The Singapore Statement is meant to be the first step towards defining fundamental principles of research conduct."

– Nicholas Steneck

Deputy Director Jan Taplick, who was a member of the conference planning committee, gave a presentation on the organisation's goals and activities at the pre-conference reception. He was also elected to co-chair future conferences.

Research integrity has become more and more important in recent years after some prominent cases of scientific misconduct in

the past. The discussions at the Singapore conference aimed to produce a global code of conduct and a set of general principles in best research practice, which are now published as the *Singapore Statement on Research Integrity* (www.singaporestatement.org).

In an interview with the Singapore newspaper *The Business Times*, Nicholas Steneck from the US Office of Research Integrity and one of the conference co-chairs stated: "The Singapore Statement is meant to be the first step towards defining fundamental principles of research conduct. We then hope that universities and professional societies can adopt and translate it for their own use." After the publication of the Singapore Statement, the next step will be to disseminate the paper to institutions worldwide and to encourage them to adopt it.

All presentations and background materials from the event can be downloaded from the conference website www.wcri2010.org.



Strong visuals such as this were used during the lecture

Nearly 200 years since the great experimentalist Michael Faraday first wowed crowds with the chemical 'magic' that was central to his Christmas lectures, a lecture at EMBL has used modern day techniques to bring the excitement of science to young people.

On 10 December, EMBL Heidelberg group leader Jan Korbel delivered an EMBL Insight

Lecture to 150 school children and teachers, while several hundred more watched live over the internet from classrooms across Europe.

This year's event was the first in a series of annual lectures to be organised by the European Learning Laboratory for the Life Sciences (ELLS). The lecture, while (thankfully) explosion free, was not short of biological 'magic' as Jan spoke of the advances that have recently been made in DNA sequencing technology and human genome analysis, and the possible implications that these advances could have for disease research – particularly, cancer research – in the future. Questions came from both the lecture hall and from classrooms via Skype.

"As scientists we have an obligation to ex-

plain our research to the public, which obviously includes the young public in particular who are still undecided about their career path," says Jan. "School children often ask to the point and thus I prepared for some tough questions, including the future potential as well as the ethical considerations of genomics research, which I feel are very important for the public to be aware of," he adds.

Philipp Gebhardt, Education Officer in ELLS, who organised the lecture, points to the value of communicating science in such a way. "There is a great social aspect to this," says Philipp. "Many people in different countries can watch the same lecture at the same time and ask questions directly to the speaker. It makes it accessible to everyone."

EBI Open Day

On 2 November, EMBL-EBI welcomed 40 early-career scientists to a day of talks about bioinformatics research, training and career opportunities, as well as demonstrations of the EBI's core data resources. Dean of Graduate Studies Helke Hillebrand provided visitors with insight into the work and social life of EMBL's pre-docs. This was complemented by the popular series of 'life as...' talks by an EBI PhD student, a postdoc, a software developer and database curator. The students also enjoyed an engaging talk by John Overington about his cheminformatics research group and the ChEMBL database.

The next EBI Open Day – to be held on 15 March 2011 – will include a talk by new group leader Julio Saez-Rodriguez about his research into signalling networks and disease. Please visit: www.ebi.ac.uk/training/penday.

How to gain trust in science



Renowned Harvard University professor Sheila Jasanoff delivered an EMBL Forum seminar on Science and Society at the EMBL Advanced Training Centre in November. Sheila's talk, titled 'Scientific Integrity in a Changing Context' considered the need for fresh thinking on how we go about gaining trust in science in the face of challenges such as conflicts of interest, libel cases and outright fraud. The talk follows many fascinating lectures delivered this year in Forum seminars, from Caltech professor of history Jed Buchwald's trek back in time to the scientific era of Sir Issac Newton, to another Harvard professor, Steven Shapin, who asked participants at EMBL Monterotondo to consider what exactly makes a modern scientist? The next event takes place on 17 December at EMBL Heidelberg when computational linguistics expert Kees van Deemter from the University of Aberdeen considers the phenomenon of 'vagueness' in everyday life.

'Geneous games' in Genoa

EMBL Monterotondo education officers Rossana de Lorenzi and Tommaso Nastasi took part in one of the world's biggest science outreach events, Genoa's Festival della Scienza, which ran from the end of October and concluded in November.

In the ex-Church of Sant'Agostino, one of the few remnants of gothic architecture in Genoa, Rossana and Tommaso used a newly developed activity called 'Geneous Games' to introduce and shed light on some of the issues relating to Genetically Modified Organisms (GMOs).

Despite the overlapping school break,

some 1000 students and teachers visited the ELLS stand and took part in role-playing exercises where they were invited to assume the identity of some of the main actors in the GMO debate.

Rossana explains that encouraging learning in an informal environment can be particularly valuable. "The students participated with curiosity and enthusiasm, this is of fundamental importance to long-term learning," she explains.

Participants also watched movies, took part in collective discussions and got hands-on with some of the science relating to GMOs.



Tommaso says that "teachers were impressed to see how the format of our activity rescued the students who were less active in the classroom. Such activities are very important to develop understanding of how to best integrate novel science education methodologies in the school curriculum."



Aino Järvalin and Federico Rossi report from this year's PhD Symposium and ask: is today's science... stranger than fiction?

"Anything one man can imagine, other men can make real", said Jules Verne – and indeed this quote has proven true many times over. In recent decades, mankind has reached the moon, learned how to perform heart transplants and built an intricate World Wide Web that makes possible instant communication across the globe. Not often do science and fiction ask each other "what's next?" – but when they do, results can be astounding.

It was with this in mind that PhD students and world-renowned experts convened at the EMBL Advanced Training Centre in Heidelberg for the 12th International EMBL PhD symposium on 21-23 October. Organised by 2009 predocs from all EMBL sites,

the symposium brought together scientists with science writers and students. They debated the synergy between science and fiction, the rapid progress in certain areas of science and our changing understanding of the natural world.

Talks were wide-ranging – from physicist Jochen Guck, who spoke about revolutionary ways of thinking about how cells work, and biologist Miroslav Radman who explored the extreme conditions under which certain organisms can survive, to award-winning science fiction author Alistair Reynolds, who gave a presentation on the great effort some authors make to ensure science fiction is consistent with scientific reality.

The programme provided the young crowd with plenty to think about, and discussion overflowed from the plenary session to the exhibition hall and beyond. It was also a great chance for PhD students to get in touch with scientists at the cutting-edge of their fields and to catch a glimpse of science that may seem fiction today but might just become established knowledge tomorrow. Or at least it could for our children, as projected by Sean Cheng, winner of this year's Writing Prize together with Francesca Moretti.

Is this the end? Of course not: the end of an adventure is merely the beginning of a new one! So stay tuned for next year's PhD Symposium: "The Rhythm of Life: Cycles in Biology".

To Lübeck... and beyond

The Postdoc Association held its annual retreat in Lübeck, Germany on 8-10 November. 79 postdocs attended the event, a stone's throw from the city's emblematic Holsten Gate.

The retreat included two keynote lectures by distinguished scientists. Kaspar Locher from ETH Zurich kicked-off proceedings by delivering a talk that documented his impressive progress in understanding transporter protein func-

tion by studying their structure. The second lecture was given by Bertrand Jordan, co-discoverer of the human histocompatibility complex and well-known author of many popular science books. His talk highlighted the lack of understanding regarding the heritability of many complex human diseases.

A further 17 talks – together with 52 posters – were presented by postdocs on topics that covered most of the diverse

research activities carried out at EMBL. Participants took part in a number of social activities including formal evening meals and a visit to the traditional brewery Brauburger zu Lübeck. The retreat stimulated an exchange of ideas across scientific fields and generated much discussion amongst participants from all EMBL sites. The next retreat will be hosted by EMBL-EBI.

Matthias Ehebauer

За следующие 50 лет!



Victor Lamzin, deputy head of EMBL Hamburg recently celebrated a half-century with friends and colleagues over a traditional Russian feast, and the proceedings were carried out with all the due respect and reverence possible (given the amount of Vodka provided). Victor was presented with a number of gifts, including a Barbie doll, as of course she also celebrated her 50th recently!



What's on your mind?

EMBL now has an official presence on Facebook to better connect with researchers, partners and collaborators, the public and employees. Alongside the new EMBL YouTube channel, the EMBL Facebook page lets us communicate with an online audience in the many millions, enabling EMBL to join, share and inspire conversation and global collaboration.

You'll find the latest EMBL news, striking science images, and links to articles, activities, events and videos that exemplify EMBL's unique research, culture and community. More than 240 people already 'like' the EMBL page: join them at:

www.facebook.com/embl.org



behindthescenes

Getting technical with EMBL's mechanical engineers

From vintage cars to vacuum cleaners, passion and creativity have been the mark of Leo Burger's 30 years at EMBL Heidelberg. [Charlotte Otter](#) finds out more...

Leo Burger (pictured far left), who heads EMBL's Mechanical Engineering workshop, is a technology fan. When he's not designing and making instruments for EMBL scientists to conduct their experiments, he's fixing computers or restoring vintage cars.

"It's why I love living in this part of Germany," the native Austrian explains, "because it's the country's technology hub. If I need a part, I just have to make a call to a company in Mannheim or Karlsruhe and they deliver. In Austria, there are fewer tech companies and it's harder to get hold of the parts you need."

This goes for Leo's hobbies too: he has sold vintage cars at Veterama (Germany's biggest vintage car show which takes place annually in Mannheim), attended the Hockenheim Oldtimer meeting and enjoys touring the rolling Baden-Württemberg countryside on his motorbike.

Leo, who studied electron microscopy at the Technical University of Graz, moved to Germany in 1979 to work for EMBL. He has been in Heidelberg since, watching

EMBL grow and change. Leo says it's not just the campus that has changed; the science has also evolved.

"When I first started at EMBL, the laboratory focused on physics so the kind of instruments we produced were large. We worked on some of the parts for the Hamburg synchrotron and we used to make things like 20 meter vacuum tubes, optical benches, beamshutters," Leo says.

Now, as EMBL's focus has moved towards systems biology, the parts Leo's team design and produce, such as incubator boxes, lenses, fly-cases and laser exposure holders, are much smaller. With this increasing miniaturisation, the workshop's machines take up much less space than they used to. "We used to take up the whole fourth floor, but now we only need a small section of it!"

Leo, who has headed the workshop since 1999, works with Helmuth Schaar, Henry Werner, Tarkan Karakol and Sascha Blätzel. The team has customised their own workshop machines, adding computers to automate processes where necessary. Some-

times they are called on to make instrument parts, but at times they are involved in whole projects from design to new build. They also work closely with the electronic engineering department, scientific instruments maintenance and the building maintenance team.

The workshop has a reputation for creativity; so much so that scientists who leave EMBL still call on the mechanical engineers they know and trust to design prototypes for them. Some of their prototypes have been patented and put on the market by EMBLEM.

"Speaking of creativity, about six years ago some scientists were using a large robot and we needed a vacuum to suck up 300 glass plates. Instead of making a vacuum ourselves, we discovered that a commercial vacuum cleaner would do the job just as well," says Leo.

After 31 years in Germany, would he ever return to Austria? "I don't think so," Leo smiles. "I feel like a tourist in Austria now. Plus the German beer is the best in the world!"

emblinpictures



Photo: Mary Jane Villot

Snow came early this year to many parts of Europe, creating striking wintery scenes at many of EMBL's sites. This photo shows EMBL Grenoble at the beginning of December and similar scenes could be found in Hinxton, Hamburg and Heidelberg. Time will tell if the festive weather will remain for Christmas Day...



Photo: Diana Zach

This year the EMBL Kinderhaus celebrated St. Martin's lantern parade with a real St. Martin figure riding a horse. 100 excited children took part with their parents and carers. A sea of colourful lanterns circled around the horse as the children sung their hearts out in the rain.

O' Christmas tree...

What exciting surprises does the EMBL tree have in store?
Chloë Balharry tiptoes down to the lab to find out

Star of wonder

The Ellenberg group uses the oocytes of echinoderms such as starfish as a classic model to study cell division, to clarify how the nucleus remodels during this process.



O Tannenbaum

Peer Bork's group at EMBL Heidelberg created a more accurate Tree of Life after developing a computational tool to distinguish between genes that are inherited and those obtained by swapping genetic material with other species.



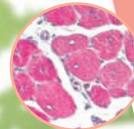
Thy perfect light

Many EMBL groups use fluorescent markers to label different molecules and cell components. From Imre Berger's MultiBac and MultiLabel tools to the Advanced Light Microscopy Facility in Heidelberg, EMBL groups are illuminating life science.



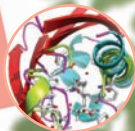
Feast of Stephen

Chocolates, wine, candy, pies, brandy, cake... festive feasting can strain even the healthiest heart. Fortunately, Nadia Rosenthal's group in Monterotondo has highlighted how a single signalling molecule can help adult hearts regenerate.



Wondrous gift

Structural biology groups in the main lab, as well as the Hamburg and Grenoble outstations, study protein folding and structure, revealing complex interactions and patterns that eclipse even the most intricate gift-wrap.



Naughty or nice

If only Santa knew it isn't that straight forward – studies such as the 1000 Genomes Project, involving a team of researchers at EMBL-EBI and Heidelberg, reveal that nobody's perfect: we each carry up to 300 defective genes.



newsinbrief

⇒ EMBL's pre- and post-doc programmes were represented at the **European Research Careers Fair** in Paris in November. The fair brought together organisations from academia and industry together with over 1200 PhD students, postdocs and researchers from all over Europe to discuss innovation strategy and new career prospects. "Our stand was very well attended and we were kept busy for the entire day. We were able to present EMBL

to a large number of attendees," said Matija Grgurinovic, administrative officer on the EMBL International PhD Programme, who helped staff the stand.

⇒ Registration is now open for the following **EBI hands-on bioinformatics training courses** to help you make the most of your data: 'Small molecule bioactivity resources at the EBI' will be held from 14–18 February 2011 (registration deadline 14 January);

'Advanced RNA-seq and ChIP-seq data analysis' will be held from 7-9 March. The registration deadline is 24 January. See www.ebi.ac.uk/training/hands-on to register and for programme details on courses to be held in 2011.

⇒ The new Courses and Conferences annual event calendar has been published with an action-packed programme available at: www.embl.de/training/events/info_participants/information

10 January EMBL Heidelberg

Science and Society Forum

Lecture: How science can contribute to poverty alleviation in Africa. Christian Borgemeister, icipe, Nairobi

28 January EMBL Monterotondo

EMBL distinguished visitor lecture:

Regulatory T cells: guardians of the immune homeostasis. Alexander Rudensky, Memorial Sloan-Kettering Cancer Center

29 January EMBL Heidelberg

Burns' Night

2 February EMBL Heidelberg

Vision2020 Lecture Series:

The development of colour patterns in fishes. Christiane Nüsslein-Volhard, Max Planck Institute for Developmental Biology

14-18 February EMBL-EBI

Hands-on training at the EBI: Small Molecule Bioactivity Resources at the EBI

16-17 February EMBL Hamburg

Heads of Units / Senior scientists meeting

25 February EMBL Monterotondo

EMBL distinguished visitor lecture:

Mirror neurons: new developments. Giacomo Rizzolatti, University of Parma

2-3 March EMBL Heidelberg

EMBL Introductory Course:

Microinjection into Adherent Cells - Theory and Practical Exercises

7-9 March EMBL-EBI

EBI Hands-on Course: Advanced RNA-Seq and ChIP-Seq data analysis workshop

15 March EMBL-EBI

EBI Open Day

17-20 March EMBL Heidelberg

EMBO/EMBL Symposium: Seeing is Believing - Imaging the Processes of Life



Ilkin Celikli joins EMBL Heidelberg as human resources officer. He gained a master's degree in HR Development in Ohio, USA. Ilkin has five years HR experience and joins the recruitment team from a position as director of HR at Girne American University in Cyprus. He looks forward to exploring Heidelberg with his young family.



Sue Lee joins EMBL-EBI as senior HR officer. Sue brings with her over 20 years HR experience and joins following similar positions both in the UK and China. She has a degree in French and European literature from the University of Warwick and looks forward to embracing the international environment of EMBL.



Savvas Petridis joins EMBL Heidelberg as human resources officer. He has seven years HR experience and a degree in Business Administration from Middlesex University. Savvas joins the personnel management team following similar positions in London and Thessaloniki. He brings his Bouzouki, so listen for the sweet sound of authentic Greek music.



Tanja Blanc has joined EMBL Grenoble as purchasing and finance officer following 10 years in high tech and healthcare industries. Another new arrival at the Grenoble outstation is **Rokhaya Gisele Tounkara** who joins as administrative officer from a position at ESRF.



awards&honours

EMBL Heidelberg group leader **Anne-Claude Gavin** and **Irmgard Sinning** from the University of Heidelberg have been awarded the Heidelberg Molecular Life Sciences Investigator Award 2010 from the University of Heidelberg for outstanding scientific work, their contribution to the advancement of structural biology and commitment to promoting Heidelberg as a first-rate location for scientific research. The award and shared prize of 200 000 Euros to further the research in their groups will be presented at a ceremony at the University on 13 December.

On 19 November, EMBL Associate Director **Matthias Hentze** gave the prestigious 2010 Princesses' Lecture at the Victor Chang Cardiac Research Centre (VCCRI) in Sydney, Australia. The talk was titled: 'Translational control by miRNAs and RNA-binding proteins'. The VCCRI has also appointed Matthias as an honorary faculty member.

Head of EMBL Monterotondo **Nadia Rosenthal** will receive an honorary doctorate from the University of Amsterdam (UVA) for her pioneering research on the regeneration of heart and skeletal muscles. The doctorate will be presented at a ceremony in Amsterdam on 10 January 2011 during the UVA's birthday celebrations.



EMBL Director General **Iain Mattaj** has been awarded an honorary doctorate from the University of Edinburgh. The doctorate was presented at a ceremony at the University on 25 November.

