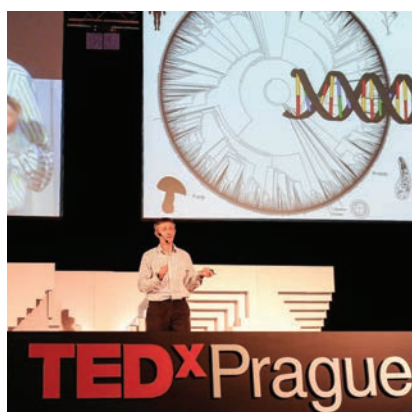


# EMBL etcetera

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## X-factor science

Three years ago, when EMBL-EBI's Nick Goldman retired to a hotel bar with colleague Ewan Birney, he could not have imagined that an idea playfully drawn out on some napkins – to use synthetic DNA as a means of mass data storage – would lead to a celebrated *Nature* paper. Yet the interest in their subsequent research, which encoded text, images, sound and more in DNA molecules, has been such that Nick was invited to give an independently organised TEDx (technology, education, design) talk in Prague on 25 May. So, how did it go?

See page 5

## That'll be the day!

Crowds gather at EMBL for extravaganzas of science, outreach and social activities



The main lab throws open its doors to the world, page 3



What's got people's attention at Lab Day? page 7

## It takes two to tango

Ministerial visit affirms EMBL's links with the Argentine Republic

EMBL Heidelberg welcomed Argentina's Minister of Science, Technology and Productive Innovation, Lino Barañao, and National Directress of International Relations, Agueda Menvielle, in May. Their visit follows a Memorandum of Understanding signed last year in Buenos Aires by EMBL Director General Iain Mattaj and Minister Barañao, formalising a shared commitment to strengthen research links and enhance strategic scientific cooperation.

Find out more on page 2



Turtle power!

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Is peer review up to it?

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A decade of the Partnership for Structural Biology

## Major impact

A coalition of scientists, editors, publishers and more have supported a declaration asking that science evaluators pay less attention to journal impact factor.

The San Francisco Declaration on Research Assessment (DORA), endorsed by EMBL, called on the research community to stop using the number as a surrogate way of evaluating research for funding, hiring, promotion and institutional effectiveness. Posted on 16 May, the declaration now has more than 8000 signatories from around the world. Framed by a group convened by the American Society for Cell Biology (ASCB), it made 18 recommendations for change in scientific culture at all levels, urging the community to focus on the content of the paper, regardless of the venue in which it was published.

“Focus on publication impact factor can have a negative effect on scientific judgement and careers,” says Iain Mattaj, EMBL Director General. “There is a strong feeling amongst many in the scientific community that the value of a particular study should not be determined by where it is published, but by how useful it is. That judgement should be made in a way that is transparent and better reflects the contributions of individual researchers.”

Below, left to right: Agueda Menvielle; Iain Mattaj; Lino Barañao; Silke Schumacher



## Joining forces

### EMBL joins Global Alliance

EMBL has joined a large-scale, international effort to enable the ethical sharing of genomic and clinical data. The Global Alliance invites commercial and not-for-profit organisations to join forces with other leading data, health care, research, and disease advocacy organisations to establish an evidence base for genomic research and medicine that adheres to the highest standards of ethics and privacy.

“Each individual has the right to decide whether and how broadly to share their personal health information”

– David Altshuler

“By working together, and by committing to the principle that each individual has the right to decide whether and how broadly to share their personal health information, we can accelerate progress in life sciences and medicine,” says David Altshuler, of the Broad Institute, who is spearheading the alliance.

“This is an excellent initiative and we are very proud to be a part of it,” adds Janet Thornton, Director of EMBL-EBI.

Initiatives aim to address scientific and ethical challenges in genetics and sequencing

### Code of Conduct published

A consortium of biologists, clinicians, lawyers, economists, theologians and ethicists, including EMBL Heidelberg group leader Jan Korbel, released a code of conduct and other guidelines for whole genome sequencing in June.

Two years in the making, the document of the EURAT consortium makes key recommendations relating to issues such as genetic privacy and confidentiality, scientific practice, business interests and patient rights. As well as emphasising the importance of balancing patient well-being and research freedom, it confronts a host of difficult questions, and emphasises the rights of patients to choose to know or not know about details in their genetic data. It also includes case studies, reference points and template consent forms.

“These documents provide very definite answers on how to deal with difficult questions that can arise in individual genome sequencing studies,” says Jan. “While initially applied by scientists in Heidelberg, the code of conduct could possibly be asserted more widely in the future, and eventually be incorporated into new legislation.”

## Stronger links between EMBL and Argentina

On 9 May, the Argentinean flag flew over EMBL Heidelberg, as the laboratory welcomed Lino Barañao, Argentine Minister of Science, Technology and Productive Innovation, and Agueda Menvielle, National

Directress of International Relations. The visit took place in the context of a continuing commitment by EMBL and the Argentine Republic to enhance strategic scientific cooperation.

EMBL's guests were welcomed by Director General Iain Mattaj, who later gave an introduction to the laboratory's programmes and activities. In the spirit of reciprocity and accord, the Argentine Minister gave members of the EMBL Directorate a fascinating insight into research developments in Argentina. The guests also received a presentation on technology transfer by EMBL's commercial arm, EMBLEM, before taking a tour of the laboratory's Core Facilities.

In November last year, Iain Mattaj and Minister Lino Barañao signed a Memorandum of Understanding, formalising a shared commitment to enhancing long-term cooperation between EMBL and Argentina.



# 'I want to try them all!'

EMBL Heidelberg welcomed visitors for a *Tag der offenen Tür* on 27 April

"Let yourself be inspired," said Iain Mattaj, EMBL Director General, on the day EMBL Heidelberg threw open its doors and welcomed more than 1500 people to explore the diverse world of molecular biology research.

Lab tours were quickly booked up as crowds streamed through the entrance of the EMBL Advanced Training Centre. Visitors could learn about topics as diverse as cell division, electron microscopy, how genes are 'read', secrets of the sea and how organisms such as fruit flies can help scientists to solve difficult biological puzzles.

For some it was a tough decision: "I want to try them all," said one participant. Others found themselves tackling scientific problems head-on, in the training and kids labs. "People were very curious about the work that we do and interested to try it out for themselves," says Philipp Gebhardt, head of the European Learning Laboratory for the Life Sciences.

For the more than 200 members of staff who helped to make the day a hit, the experience was equally rewarding. "People looking under the microscope were amazed by seeing cells moving inside the brains of live zebrafish embryos," explains Christian Tischer, scientific officer in the Advanced Light Microscopy Core Facility. "Visitors were interested, positive and excited," adds Uschi Symmons, a postdoc in the Spitz group.

Participants were welcomed by Theresia Bauer, Baden-Württemberg's Minister for Science, Art and Research, and presentations given by EMBL scientists saw the auditorium and a science café in the rooftop lounge packed to the rafters. "Everyone involved in both the organisation and helping out on the day enabled the lab to put on a tremendous show – visitors certainly got a feeling for EMBL's spirit and expertise," adds Lena Raditsch, EMBL's Head of Communications.





Participants on the FELASA-accredited laboratory animal science course, due to take place annually. Inset: Maria Kamber

## Of mice and research

Scientists are considered competent to work with animals only after passing a specialised course in laboratory animal science. One of only a handful of places to gain this qualification is EMBL Monterotondo, which was awarded a prestigious 'Category C' accreditation from the Federation of European Laboratory Animal Science Associations (FELASA) in April of this year – one of just 12 in Europe. It enables the lab to deliver internationally recognised teaching in animal handling, care, and research. Following the first course delivered under the accreditation in April, *EMBL&cetera* caught up with Maria Kamber, veterinarian and animal facility manager.

### What are the objectives of the course?

The fundamental principles are the promotion of animal welfare and its

## EMBL Monterotondo is awarded leading teaching accreditation

importance for raising the standards of animal research. Our aim is to teach the design, planning and implementation of experiments to ensure animal welfare, with strong emphasis on the '3Rs' – restrict the use of animals; refine experiments to minimise distress; and where possible replace *in vivo* testing with scientifically robust alternatives.

### What does it involve?

It combines theoretical and practical sessions on subjects such as welfare, alternatives to the use of animals, legislation, ethics, and pathology. Animal welfare and the 3Rs are the focal point of a new European Directive that requires proof of competence as a prerequisite for researchers working with animals. Crucially, the

course provides the necessary training to obtain a licence to work with animals in most European countries.

### What does it mean for EMBL?

It is a fantastic achievement: a panel of prominent specialists from across Europe awards the accreditation and it provides a quality assurance with exceptional educational standards. When we obtained it I felt relieved, happy and excited. As was clear following our recent course in April, it constitutes a platform on which to build and develop networks and spread ideas: experts from many different fields participate, including biologists, veterinarians and pharmacologists. It also underscores the excellence of courses that EMBL provides to scientists across Europe.

## High-resolution partnership



EMBL-EBI and the Wellcome Trust Sanger Institute have launched the Single Cell Genomics Centre (SCGC), which seeks to answer key biological questions by exploring cellular genetics at the highest resolution possible. The centre will focus on the exploration of cell function in normal development and immune function as well as cancer. The founding members are John Marioni and Sarah Teichmann from EMBL-EBI, and Chris Ponting, Wolf Reik, Harold Swerdlow and Thierry Voet from the Sanger Institute.

Single-cell genomics enables researchers to identify differences between individual cells within developing tissues. Pinpointing and understanding these differences is crucial to discovering how cancer spreads or specialised cells – such as neurons – can be grown for use in regenerative medicine.

"We're looking to establish the centre as a focal point for collaboration to accelerate the science, applications, methods and discoveries in single-cell genomics research," says Sarah, who is a faculty member at both institutes.

## Just Experiment!

Bold ideas, daring projects, unconventional methods: when assessing responses to a very special funding initiative from the VolkswagenStiftung, reviewers found that a proposal from EMBL Heidelberg group leader Takashi Hiragaki ticked all the right boxes.

Takashi has been awarded 100 000 Euro as part of the Experiment! initiative, which seeks out bold ideas that could transform conventional thinking. His project aims to build a correlative map of cell fate and mechanics to study their causal links in the mammalian embryo.

"The project could open up new areas of research that might change our understanding of how mammalian embryos develop," says Takashi. "Better understanding the relationship between cell fate and mechanics will give us an insight into the role of cell mechanics in embryonic development and may help identify the original cue that triggers breaking of symmetry in the early embryo." One of only 13 projects selected from more than 700 applications, funding will last for 18 months.



## Side show

Prescription drugs are no 'magic potion'; they all come with side effects. Drowsiness, stomach problems, and a variety of other complications all occur because a medication affects molecules beyond the one it is designed to target. A team led by EMBL Heidelberg's Peer Bork has developed computational tools which enable them to pinpoint exactly what that unintended target is in each case. Their study, published in *Molecular Systems Biology*, could open doors for smarter ways of designing and administering drugs.

Working with the Gross (EMBL Monterotondo) and Gavin (EMBL Heidelberg) groups, the researchers demonstrated that increased pain sensation, a side effect of triptan drugs, was reduced by blocking a single protein: serotonin 7 receptor. "For the first time we accurately predicted mouse behaviour using a statistical method," Peer emphasises. The scientists hope that, in the long run, the method could help to inform the development of drug combinations that both treat the disease and relieve side effects.

In a parallel study, published back-to-back, the Bork group collaborated with the Pepperkok and Gavin groups (EMBL Heidelberg) to group genes and the drugs that control them into 'modules' that could help to re-purpose drugs and predict new functions.

Peer Bork



## A leap into the light

Learning about the world of scientific careers away from the bench can be as daunting as it is exciting. Speakers from a diverse range of professions at this year's Career Day were on hand to help, offer advice and share their experiences at EMBL Heidelberg on 13 June.

Talks covered a wide spectrum of 'alternative' career paths with alumnus Ioannis Legouras kicking off the day, telling the 200-strong audience about life as an EU liaison officer at the Max Delbrück Center in Berlin. Other speakers included training coordinator Kelly Dean from University College Cork, F1000 outreach director Iain Hrynaszkiwicz, medical writer Julia Forjanic-Klapproth, Actelion



Photo by Ondrej Vitousek

## What an 'X'perience!

An EMBL scientist speaking alongside an eminent psychiatrist and a professor of physics is nothing new, but sharing that same stage with a chocolatier, a Kosovo veteran, a guerrilla gardener and a holocaust survivor – that's something special. When group leader Nick Goldman accepted an invitation to speak at a recent TED event in Prague, the experience proved to be a high point in the popularisation of research on DNA storage. It also involved reassuring a surprising number of people that messages such as 'Martians were here' are unlikely to be encoded in our DNA.

In January, a paper on the realities of test-tube data, co-authored with Ewan Birney at EMBL-EBI, wowed the world's popular press. Among the flood of requests that followed was an invitation to speak at TEDxPrague on 25 May: "I knew about TED talks, but I imagined they only happened in America," says Nick. He soon learnt that TEDx events are independently organised but similarly devoted to 'ideas worth spreading'.

The talks at the Prague meeting followed the usual TED formula: short and sweet – Nick was encouraged to keep content graph-free and non-technical. Other than that, he insists,

"It didn't feel different from a scientific talk." In fact, condensing complex research into an accessible 15-minute presentation proved surprisingly easy: "As I finished I glanced at the clock, it was counting down 10, 9, 8 – I've never been so on-time in my life!"

"The clock was counting down 10, 9, 8 – I'd never been so on-time in my life!"

– Nick Goldman

Interacting with members of the audience during coffee breaks, Nick was heartened by their level of understanding and insight. He was, however, bemused when asked if the researchers had looked for 'messages' in the genetic code. "Maybe I should make some attempt to do it one day," he concludes, "so I can just say 'Look, the answer's no!'"

A humble mathematician, Nick is amazed at how the research has been received – with a patent pending and a visit to Google on the horizon, it doesn't look like he or his colleagues will be out of the spotlight any time soon.

⇒ Watch Nick's TEDx talk online at <http://youtu.be/a4PiGWNsIEU>.

pharmacologist Michael Steiner, and Siemens software engineer Andreas Freudling. Speakers took part in table discussions, candidly reflecting on the opportunities and challenges of their respective positions.

"A significant and growing number of researchers go on to take up a non-academic position: the event is an important opportunity to learn about different career paths," says Helke Hillebrand, academic coordinator and dean of graduate studies. "Speakers gave great insight into their work, showing how skills developed in academia can be applied in a host of non-academic settings," adds Brenda Stride, administrator of the Postdoc Programme.



Speakers were introduced by EMBL fellows



## Where do turtles 'fit'?

Where do turtles fit in the evolutionary tree? Are they reptiles? How did their backbone evolve to form a shell?...

To answer these and other questions, researchers in the International Turtle Genome Consortium looked at how the Chinese soft-shell turtle's genome behaves during different stages of development. Their results provide insights into shell development, and show that turtles are related to the group comprising birds and crocodylians.

"This study fits well with Ensembl's goal of understanding life," says Amonida Zadissa, Ensembl team member at EMBL-EBI. "We take these very long DNA sequences, without knowing what any of it means, and label them – for example pointing out which pieces are genes and how or when they are expressed. It's called 'whole genome annotation', and the whole process is rather like turning a big jumbled bag of words into a book."

One unexpected finding of the study was that turtles possess over 1000 olfactory receptors – more than has ever been found in a non-mammalian vertebrate.

"I study science because I want to understand the world around me," says Bronwen Aken, a member of the Ensembl project based at the Sanger Institute. "In Ensembl, we have a lot of information about humans but we also want to know how all vertebrate species are related to one another, to fill in the gaps in our knowledge."

The study data is freely available in Ensembl, where you can see some of the genes being expressed at different stages of development. [www.ensembl.org](http://www.ensembl.org)



Left to right: Anton Enright, Dónal O'Carroll, Vladimír Beneš

## Keeping our internal saboteurs at bay

We may not notice it, but our genomes are under constant threat from internal saboteurs: sequences of DNA called transposons – or jumping genes – which are able to copy and paste themselves from one part of the genome to another. Dónal O'Carroll's group at EMBL Monterotondo has been studying just how our cells keep these genomic saboteurs at bay. Now, working with Anton Enright's group at EMBL-EBI and Vladimír Beneš' Genomics Core Facility in Heidelberg, Dónal and his group have put together the final piece of the puzzle.

They found that, as a mouse's sperm cells are formed, they keep their transposons in check through a combination

of different tactics. Chemical tags called methyl groups are deployed in two stages, first locking directly onto the DNA and later locking onto histones – the proteins around which DNA wraps itself. And when the sperm cell is almost formed, a group of molecules collectively called the piRNA pathway cut up any rogue transposons that could pose a threat to the genome of the next generation.

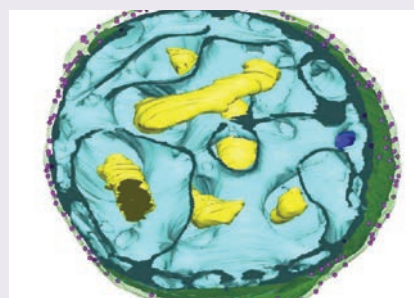
The research was published in *Molecular Cell* in May.

➤ Hear more about the chaos that jumping genes can inflict on our cells in the latest EMBL Explore podcast: [www.embl.org/explore](http://www.embl.org/explore).

## Research highlights

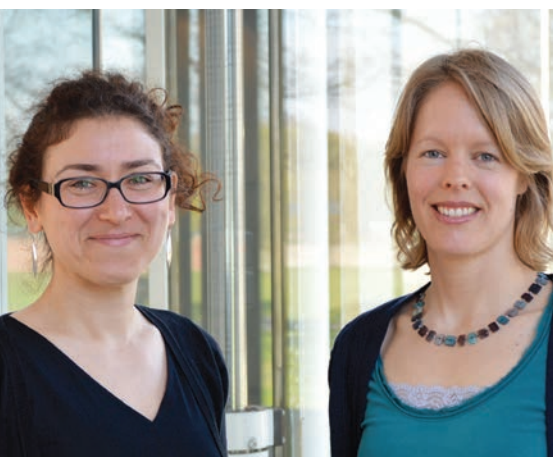
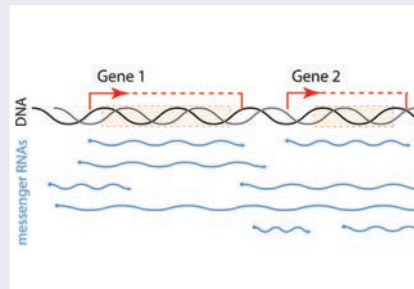
### Bacteria complexity

How bacteria can derive complex membranous structures that rival the complexity and dynamics of eukaryotic cells has now been shown in a 3D reconstruction by a team including alumnus Damien Devos and EMBL Heidelberg's Rachel Mellwig. They carried out the work on a tiny bacterium called *Gemmata obscuriglobus*. It was published in *PLoS Biology* in May.



### Pushing transcription boundaries

A technique developed by the Steinmetz group at EMBL Heidelberg has revealed a new level of variation in messenger RNAs. The work, published in *Nature* in April, found that cells with the same genes start and finish transcribing them at different points in the genome. It provides a new way to evaluate the functional range of genes.



Ensembl colleagues: Amonida and Bronwen

# LAB DAY 2013

THE DAY BEGAN MUCH LIKE ANY OTHER, UNTIL...

AN ORDER FROM ABOVE:



DROP EVERYTHING!

FOR A DAY OF SCIENCE AND FUN



THERE WERE EVEN BALLOON ANIMALS!

PEOPLE GATHERED



FROM NEAR AND FAR

TO SHARE THEIR RESEARCH\*



IN LOTS...

... AND LOTS...



... AND LOTS OF CREATIVE WAYS!\*\*



So, LabDay poster...



NOW, SOME ARE OFF ON *NEW* ADVENTURES

FOR OTHERS,



...THE BEAT



...GOES



...ON!

\* SCIENTIFIC POSTER WINNERS: NICCOLO BANTERLE (LEMKE GROUP), STEPHANIE SUNGALÉE (KORBEL GROUP) AND MATTHIAS ZIEHM (THORNTON GROUP)  
 \*\* FUN POSTER WINNERS: GILMOUR GROUP, KRIJGSVELD GROUP AND SVERGUN GROUP

## Moving forward

The EMBL Alumni Association (EAA) board met in Heidelberg on 13 June. The two-day meeting was scheduled around Lab Day to offer EMBL staff and the board opportunities to meet, enjoy Lab Day activities and attend the John Kendrew Award Ceremony – a highlight in the EAA calendar. Chair of the EAA board, Giulio Superti-Furga, summarises:

### Membership

“EMB-associated institutes – currently EMBO, EMBLEM and EMBL Ventures – can now join the EAA. We will adjust our statutes accordingly. EMBL partner institutes will be encouraged to set up their own Alumni Associations with our full support.”

### Logo

“We have a new logo thanks to the efforts of our communications working group in collaboration with OIPA.”

### Website

“We have enhanced our website to make alumni resources and services more visible and accessible. Our members’ directory enables searches for alumni according to research interests and expertise. Take a moment to review this as well as your own record.”

### 40th anniversary celebrations

“With the Lab Day organisers, we have put together a special and interactive reunion programme with exciting surprise elements, taking place 18–19 July 2014. You will receive an invitation to register (free) later this year, together with details of other worldwide alumni events planned for 2014.”

## Mark your diaries

**29 June** EMBL Heidelberg  
EMBL staff/alumni get-together  
followed by the Summer Party

**29 June** Dilofo, Greece  
EMBL alumni local chapter meeting

**18 July** University of Lisbon, Portugal  
Molecular biology in Portugal, at  
EMBL and by EMBL alumni

**23 September** Amsterdam  
The EMBO Meeting – EMBL Staff/  
alumni get-together

**21 November** EMBL-EBI  
EAA board meeting followed by  
staff/alumni get-together

For further details please visit  
[www.embl.org/alumni](http://www.embl.org/alumni) or contact  
[alumni@embl.org](mailto:alumni@embl.org).



Members of the EAA board gathered at the main lab for the first of two annual board meetings. One item on the agenda was the launch of the new EAA logo (inset)

## Mucus and alumni: valuable lifetime resources

This year’s John Kendrew Award winner, Katharina Ribbeck, captivated her audience with her niche subject – something essential to all of us, yet understudied: slime, as she likes to refer to it; or mucus, as it is more commonly known; and biological hydrogels, to get technical. Katharina is on a mission to correct the common view that mucus is a waste product: “On the contrary, it has very important functions for biology and human health.”

“About 200m<sup>2</sup> in our body is lined with mucus,” Katharina explains. “Mucus is in our eyes, nose, oral cavity, throat, lungs, stomach, intestine and the female genital tract, with different consistencies and functions in each location relevant to the way it protects the different organs. One central role is to defend us from pathogens by forming a tight barrier. Unfortunately, this is not always perfect, and certain viruses and bacteria can break through and cause damage, from a mild flu to cancer formation,” she continues. It is this important and diverse role that has motivated her to understand how mucus protects us from pathogen attack, and the mechanisms that certain pathogens have evolved to break through the mucus barrier.

Katharina’s work has won her much publicity, from a recent publication in *Current Biology* to newspaper articles that bring her

work to the wider public. Recently, she has embraced YouTube in an effort to fill the gaps in educational sources on mucus – watch Katharina introduce her research at <http://youtu.be/uYuPranLS1k>. In addition to other clips aimed at younger audiences, she has prepared text for a children’s book, and invites budding artists from the EMBL community to help her illustrate it.

Before presenting Katharina with her award, alumnus Ari Helenius referred to the community of current and past EMBL staff as an “underground network of connections that has helped European science.” He emphasised the importance of “connecting with EMBL people that you know and don’t know.” Much like mucus, it seems, the EMBL network (though not slimy!) has a valuable function that shouldn’t be underestimated.





## An EMBL trilogy

In February, Xun Li bid a fond farewell to life as an EMBL Interdisciplinary Postdoc (EIPOD), but not before putting the final touches to a project that brought together expertise from three EMBL sites to create a valuable new resource.

Xun, with a PhD from the Shanghai Institute of Organic Chemistry, found his first foray into the European research environment as rewarding as it was diverse. As an EIPOD, Xun's time was shared between the Köhn group in Heidelberg, the Wilmanns group in Hamburg, and the Thornton group at EMBL-EBI. "I gained new understanding and skills in bioinformatics, peptide synthesis and molecular biology," he says, "I quickly learnt that you can't be expert in everything, but you *can* be adept at seeking and learning new knowledge."

Working with the three groups, Xun created a resource for scientists studying how information about environmental changes is relayed inside a cell by the addition or removal of tags called phosphate ions. Xun compiled the most complete picture to date of all the human proteins that remove such tags – phosphatases – and the molecules they act upon – substrates. "We created DEPOD, a free online database that not only presents human phosphatases and their substrates, but also links to kinase databases and connects kinases with



"Tight collaboration between the three groups ran through the whole research process"

– Xun Li

Three years, three groups: Xun Li in Heidelberg during his postdoc

phosphatases through their common substrates," explains Xun. DEPOD's web-like overview of interactions could thus help explain unforeseen side effects of drugs designed to interfere with phosphatases or with their phosphate-adding counterparts, kinases.

"Tight collaboration between the three groups ran through the whole research process," explains Xun. "Janet Thornton gave valuable suggestions on the design of computational studies; Maja Köhn offered the biologist's perspective on user-friendliness and relevance of computational data analysis, as well as guiding experimental studies; Matthias Wilmanns provided many

useful insights, especially on the connection between phosphatases and kinases." Their combined efforts were published in *Science Signaling* in May.

Xun has now returned to China where he is a senior scientist at Novo Nordisk Research Center China (NNRCC) in Beijing. His work encompasses bioinformatics and scientific computing in biopharmaceutical research and development. "The EIPOD programme provides an excellent opportunity to work across world-class groups, learning new skills in different fields and using them to solve challenging scientific problems. I am very proud to have been an EIPOD."

[www.koehn.embl.de/depod](http://www.koehn.embl.de/depod)

## Numbers and networks in France

Former postdoc Cameron Mackereth makes connections to benefit EMBL alumni

A first task for Cameron after becoming a group leader at the IECB (Institut Européen de Chimie et Biologie) Bordeaux was to identify the networks available to him. "Local NMR resources were quick to find, but I needed a larger NMR spectrometer," Cameron explains. "The answer was a national network of shared equipment for

NMR – TGIR-RMN – comprising nine NMR spectrometers in six French cities."

The process got Cameron thinking: could the EMBL alumni network act as a similar resource? With this in mind he called a meeting of alumni in France, dedicated to grants, networks and resources. Daniel Louvard, Director of the Institut Curie in Paris and former EMBL group leader, was quick to offer support, agreeing to host the meeting at his institute on 7 June.

"What's the best way to facilitate searches for expertise or equipment within the alumni network?"

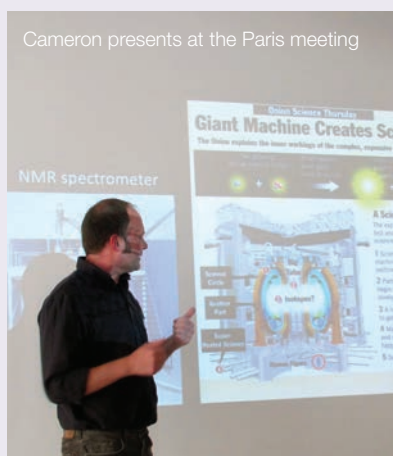
– Cameron Mackereth

Cameron posed two questions: what's the best way to facilitate searches for available expertise or equipment within the alumni network? In the context of multidisciplinary grants, how can alumni identify potential partners? The answer: the alumni members' directory. This facility enables the EMBL community (staff and registered alumni) to

find one another not just by name, nationality, affiliation or location, but also according to research interests and expertise. The next step is to incorporate fields for equipment and publications.

The meeting was stimulating on all fronts. Daniel provided an overview not only of the Institut Curie, but also of the early EMBL days. EMBL Grenoble group leader Ramesh Pillai presented the latest developments and resources at EMBL, together with his own research. Guntram Bauer, Director of Scientific Affairs and Communication at the Human Frontier Science Program (HFSP), gave helpful insights into the dos and don'ts of HFSP grant applications, while Damien Salauze, Technology Transfer Office Director at the Institut Curie, discussed industry collaborations and patenting issues.

"This was a truly international and friendly meeting, with EMBL alumni representing a wide range of research areas and laboratories in France," says host Daniel. "It was a very stimulating experience, to be repeated."



Cameron presents at the Paris meeting



## Is peer review up to it?

Gold standard or fundamentally flawed? Irene Hames, an independent editorial consultant, visited EMBL Heidelberg to give an EMBL Forum lecture on peer review. *Michele Cristovao*, postdoc in the Müller group, caught up with her to find out more

### How important is peer review?

In essence, peer review is having experts look at a manuscript to assess its soundness – which is absolutely critical –, but also the paper’s interest, novelty and innovation, which is much more subjective. Peer review sometimes gets a bad press because it’s an area where people often have little training. Editors have an enormous amount of power; they need to be trained to make sure they do the job as it should be done and enough support should be provided.

Not all journals are equal, and not all peer review is equal either – there are good and bad examples. But on the flip side, sometimes authors don’t have realistic expectations of peer reviewers. Journals and peer review are a fundamental part of the scientific process: it is important to see this as a dialogue – it’s not the editor talking down to the authors, rather it’s them engaging with the authors and reviewers. We are also seeing novel ways of interaction between editors, authors and reviewers. In this sense, peer review is very important.

### What would you change about it?

Peer review is already changing. Journals such as the four EMBO Journals, and some other notable publications, have made significant efforts to be more transparent in

the review process. For example, they publish a peer review process file with each manuscript, consisting of reviewer reports, editorial correspondence and author responses: everyone can see the basis on which the decision was made.

**“Not all journals are equal, and not all peer review is equal either”**

– Irene Hames

It’s also a good thing to move towards identifying who reviewed the paper, but this is a difficult area – there are pros and cons, and each journal should decide for them what is best. One of the advantages in my mind is that reviewers could get credit for being peer reviewers and can build a reviewer record. There should also be recognition for good reviewers: a lot of journals list their reviewers from last year, and this can be important for a young researcher’s career as it can build up your CV.

### Do you have a take-home message for young scientists?

Be honest in everything you do, be aware. If you come across anything in your research life that you don’t feel happy about, go to somebody more senior and alert them. Be proud of your research, do it well, get trained and enjoy it.



Gunter takes the mic during the lively discussion, alongside Scott and Karen



## From habit to addiction

How much do we know about the process of developing an addiction? What role does biology play? EMBL-EBI’s 7th annual science and society event, ‘From habit to addiction: A slippery slope?’, set out to explore these questions in an evening of talks and discussion among scientists and the general public.

On 15 May, 120 visitors gathered at the Cambridge Union building – a record number of attendees for this event. The evening began with an introduction to addiction by Scott Vrecko, who unravelled the

history and social context of the condition. Karen Ersche explored the neurobiology underlying addictive behaviour, and Gunter Schumann presented the latest research into addiction genetics.

EMBL-EBI’s John Marioni chaired the event and coordinated a lively debate after the talks. The contrast between Scott’s sociology fieldwork and Karen and Gunter’s experience in a clinical environment helped stimulate an interesting discussion. Next year’s meeting will be held next May in Cambridge.

## In the genes

Curious about the causes of his Charcot-Marie-Tooth disease, Jim Lupski (with his team at the Baylor College of Medicine in Houston) sequenced his own genome to find out more. Lupski came to Heidelberg in May to give not one, but two talks on how, why, and what they found.

First, Lupski gave a Distinguished Visitor Lecture, focusing on the opportunities and challenges of using genomics to understand disease. The following day, he gave a Heidelberg Forum Lecture, considering some of the complex questions raised by whole-genome sequencing and encouraging the audience to engage with the science and its implications. “We have to think about the legal, social and ethical questions,” he said, “If judiciously applied, personal genomes can benefit many patients and, by doing so, our society.”



## Doris Days

The user community celebrated 40 years of work and research at the DORIS ring on the DESY campus, 14–15 May. DORIS, which was switched off for the last time at the end of 2012, has shaped the careers of many European researchers within the fields of structural biology and particle physics, some 400 of whom accepted the invitation by DESY to join the two-day symposium.

Opening words given by Hamburg's First Mayor Olaf Scholz, and Beatrix Vierkorn-Rudolph, Deputy-Director General of the German Federal Ministry of Education and Research, were followed by a talk by EMBL Director General Iain Mattaj on the importance of the collaboration between EMBL and DESY, and future visions of synchrotron-based infrastructures for applications in structural

biology. A number of presentations from distinguished European researchers followed, highlighting the historical, social and political relevance of DORIS, as well as stories of scientific achievements at the synchrotron. On day two, Keith Wilson from the University of York and former Head of EMBL Hamburg, spoke about the importance DORIS had for structural biology in Europe.

Established in 1974, the EMBL unit in Hamburg made use of the radiation produced at the synchrotron for structural biology experiments and rapidly became one of the most important synchrotron radiation biology labs in the world. In more recent years, work on the DORIS beamlines has paved the way for the start of a new era at PETRA III, and so the legacy of DORIS lives on.



## Partnership for Structural Biology turns 10



On 4 June, more than 150 structural biologists from all over Europe gathered in Grenoble for a day of fun, celebrating the 10th anniversary of the Partnership for Structural Biology (PSB).

The celebration kicked off with seminars by some of the founders of the PSB, retracing its history, and how its success had inspired the creation of other themed research partnerships in Europe.

Afternoon talks focused on recent advances in the field of structural biology, and how they might shape the future of the PSB. Proving that scientists can be multi-talented, PSB staff provided musical entertainment, and the day ended with a barbecue as those in attendance watched the sunset over the mountains surrounding Grenoble.

In 2003, three European and two French institutes joined forces to create the PSB, pooling their expertise and state-of-the-art

equipment, to crack some of the biggest questions of modern biology.

Everyone had a great day at the event, and reflection on past achievements hopefully inspired the next generation of scientists to drive the PSB forward over the next ten years.

## Korea visit to EMBL-EBI

A high-level delegation from the Korean National Institute of Health visited EMBL-EBI on 25 April to learn more about how bioinformatics resources are developed and maintained in Europe, and to explore the potential for collaboration.

Jo McEntyre, Head of Literature Services, hosted the visit and fielded questions about making Korean publications more visible to the global research community. Paul Flicek talked about large-scale efforts like the 1000 Genomes Project and BluePrint, and discussed the Korean perspective on these initiatives with the delegation. Other participants included Tim Hubbard from the Wellcome Trust Sanger Institute as well as EMBL-EBI leaders Janet Thornton and Rolf Apweiler.

### Discoveries from the PSB

The invention of a kinetic crystallography technique that films proteins at work

Solving the structure of parts of the flu virus polymerase, a discovery that currently guides the development of new drugs

Understanding the role of Brdt1, a protein that regulates gene expression by binding to histones (the proteins that give chromosomes their structure)

Uncovering a mechanism involved in how viruses escape infected cells by budding

## EMBL-ATC springs into action



Spring is the season of growth and new beginnings, and it seems its effects were felt even in the busy corners of EMBL's Advanced Training Centre. Alongside established courses and conferences, this spring saw the delivery of new events, proving that the advanced training portfolio goes from strength to strength.

In early June, the first ever EMBO|EMBL Symposium – Cardiac Biology: From Development to Regenerative Medicine, took place. EMBL was delighted to welcome back Nadia Rosenthal, Scientific Head of EMBL Australia and former Head of EMBL Monterotondo – the symposium chair and one of many ‘superstar’ speakers. The event was very well

received, as one participant commented: “I feel very fortunate to have been able to attend this meeting, which I suspect will achieve a historical significance in time due to the contacts established and the friendships made.”

*“I suspect the meeting will achieve a historical significance due to contacts established”*

*– course participant*

Another EMBO|EMBL Symposium made its first appearance in May – New Model Systems for Linking Evolution and Ecology – while new courses were also on the programme, including the 10-day EMBO Practical Course: Electron Microscopy and

Stereology in Cell Biology, in June. The state-of-the-art facilities are drawing more corporate partners to collaborate with EMBL to organise annual training, among them Olympus, Eppendorf, and Sigma Aldrich.

Earlier in May, two well-established events confirmed their top spot in the conference calendar: the Annual BioMalPar I EVIMa-laR meeting, and the EMBO Conference Series: Chromatin and Epigenetics. The latter attracted a record 450 delegates to the main lab, making it the biggest ever conference at EMBL Heidelberg. To see a full list of upcoming training activities, including a sneak preview of 2014, go to [www.embl.org/events](http://www.embl.org/events).

## Admin staff drop anchor in Hamburg

Breaking with tradition, the EMBL Admin Assembly took place at EMBL Hamburg from 23-24 April. Together with a team of pre- and postdocs, senior administrative officer Margret Fischer pulled out all the stops to make the first Admin Assembly at the outstation an action-packed and memorable event.

Alongside an informative programme of talks about the latest developments within the administration teams, head of EMBL Hamburg Matthias Wilmanns gave the group a lively overview of work and life at the outstation. Participants were then given a tour of the facilities at PETRA III, followed by a boat tour of the Hamburg harbour and a candle-lit dinner on the top floor of the PETRA III building, specially prepared by EMBL fellows.

“Although most of the admin members work in Heidelberg, it is important to connect with all sites to see the crucial work that is going on elsewhere,” says senior human resources officer Elke Jagomast. “It was important for me that everyone



All-aboard! EMBL administrators enjoy a boat tour of Hamburg harbour

felt welcome and had a good time,” adds Margret. “Our culinary capabilities seem to have exceeded all expectations, so if all else fails we should be able to get a job with Claus in the canteen!”

## Your representatives

April elections saw the addition of a number of new faces to the Staff Association committee across EMBL's sites. This group plays a vital role in the life of EMBL, and are your representatives on issues ranging from terms and conditions of employment to shuttle-bus timetables (always a hot topic!).

Committee members are elected for a two-year term and represent all staff categories. They meet weekly via video conference, and divide into working groups to focus on important issues, such as pensions, health insurance, childcare and grievances.

This year, the Committee welcomed Daniel Bilbao from Monterotondo as new Co-Chair, and new Vice-Chairs Carmelo Lopez for Heidelberg and Andrew McCarthy for Grenoble. Among the new representatives are:

- Heidelberg – Francis O’Reilly, Jelena Tica, Michele Cristovao, Nicol Siegel and Sean Nightingale
- Hamburg – Anna Gieras and Daniel Passon
- EMBL-EBI – Camille Terfve, Magali Ruffier and Mark Bingley.

Thanks to all who voted – don’t forget, your reps are here for you! See the full list of members at <http://staffassociation.embl.org>.

## The great and the good

EMBL is well known for bringing together experts from multidisciplinary fields to discuss ideas and tackle problems. Even so, when the Heads of Internal Audit (HoIA) from international organisations as diverse as the UN, the European Space Agency, and the International Criminal Court convened for an informal networking meeting at EMBL Heidelberg in April, many walking past the conference room did a double take.

The annual event, which takes place at a different institute each year, gathered representatives from Europe's most important international organisations to talk shop, share ideas and explore joint initiatives in areas such as training. Organised and chaired by EMBL internal auditor Emilie Berger, the programme included presentations by scientists from EMBL, a tour of the core facilities, panel discussions, and debates on topical internal audit issues.

"Participants come from fields as diverse as policing, science, policy making, human rights, defence and humanitarian relief, but we have a great deal in common as well," Emilie explains. "HoIA is evolving from simple exchanges of best practice towards co-operation and knowledge pooling."



Internal auditors provide independent and objective evaluations of an organisation's financial and operational activities, and offer advice on improving practices

"The differences in work structure between a police organisation and a scientific organisation are enormous, but we can learn a lot from each other and have done. The presentations on the scientific work have been awe-inspiring."

- Tim Grant, INTERPOL

"Like EMBL, CERN has a strong base of very talented young researchers. The mix of talks and networking made it a fantastic occasion. This is a very important meeting and it brought together the largest number of attendees to date."

- Laure Esteveny, CERN

"What impressed me about EMBL is the shared vision of scientists and the administration and how effectively they work together in the pursuit of research and the delivery of training and events. There is a spirit and culture you can feel."

- Agnieszka Kazmierczak, European Commission



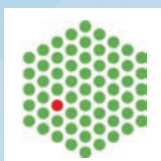
## To EMBL and beyond...

When Tim Prezelj was younger he was inspired by a school project studying how grasshoppers respond to their environment. His work, which involved developing an algorithm to enable farmers to better assess grass quality, sparked an insatiable interest in the natural world.

Last year Tim, a student from Ljubljana, took another leap towards becoming a research scientist by winning the EIROforum prize in the biology category of the 2012 European Union Contest for Young Scientists. His reward? A trip to EMBL Heidelberg to attend the EMBO conference on Chromatin and Epigenetics, and a further week working with scientists in the lab.

"My study for the contest produced a chimeric receptor which might one day advance research towards the design of a vaccine against malignant melanoma," he explains. "From both the conference and scientists in the lab, I gathered a lot of ideas for my own work and met with interesting people, some of whom I will stay in touch with as my career progresses. People here are very passionate about their work, are broad minded and open to new ideas."

"My next challenge is to begin a degree in biotechnology at university in Slovenia, but I hope to come back to EMBL one day, perhaps by applying for a position on the PhD programme."



## @EMBLorg

EMBL has joined the growing ranks of scientists and institutions taking to the tweet-waves, launching its official Twitter account on 13 June. Within days, the lab's following soared past 50 and many more have tracked us down since. The first person to tweet at the lab was none other than joint-Associate Director of EMBL-EBI, Ewan Birney, who simply wrote "(:) And EMBL has finally got a twitter handle. Hurray!" Join in the conversation by following us today: [www.twitter.com/EMBLorg](http://www.twitter.com/EMBLorg).



*\*The capital of Burkina Faso, west Africa*

## Finding sanctuary

Seventy-nine developmental biologists, 34 hours together, 27 presentations and 52 flash talks. And those are just the numbers. The monastery of Ottrott (France) was the perfect stage to enact the very first Developmental Biology Unit retreat.

Isolation from everyday distractions, beautiful surroundings, together with the perfect weather for getting down to business (grey and cloudy, with sun breaking through just in time for the finale) encouraged members

of the nine groups to mingle, share scientific ideas and put their knowledge of the exact location of Ouagadougou\* to the test.

Creativity was the main dish of the two days: participants served up innovative ways of communicating science, including use of colour to explain immunity and inflammation, a miming act to reveal the subject of an upcoming white seminar, and a musical summary of some recent findings. Following the dinner, teams bringing together scientists

from all labs were put to work, answering the tricky questions of our very own pub quiz. And while minds relaxed, bodies exercised to the Latino tunes of the Unit's resident DJ, Matteo Rauzi. Before they knew it, everyone was already back in Heidelberg – still, "Hey, I heard you are interested in glycolysis! Me too! Why don't we grab a coffee and talk about that?" is the most overheard sentence in the corridors since they returned.

– Christopher Amourda and Federico Rossi



Star dribbler

One afternoon in April, EMBL-EBI's Bren Vaughan found himself being cheered on by children as he dribbled a football 105.5 times round a 400m running track.

"My friend Steve Fleming asked me if I would be interested in helping with a crazy fundraising effort he had thought of," Bren explains. Steve arranged for Bren to try and set a World Record running a marathon whilst dribbling a football during Global Citizenship Day at a local school. The focus of the event was HIV and AIDS in Africa. "It was harder than I expected," Bren recalls. "By the end, the distance



## A meeting of minds

Around 40 intrepid neurobiologists/neuro-curious researchers braved the wilds of the Etruscan countryside (and some very sulphurous hot springs) to attend the first ever EMBL neuro-retreat at Bolsena lake. Fuelled partly by the local cuisine, but mainly by a desire to understand the brain, the neuro-attendees discussed topics ranging from the role of microglia in shaping the developing nervous system, the molecular physiology of somatosensation, the neural circuits which underlie fear-related behaviours, and the ever perplexing evolution of the nervous system. The retreat will take place again in 2014, and all EMBL neuroscientists will be welcome to take part.

– Daniel Bucher

on my watch was 28.8 miles. Because you zig-zag round the track, chasing the football as you dribble it, I covered an extra two miles."

Steve and Bren became friends playing for a Genome Campus football team. Steve set up a charity, Kick4Life, which holds popular football matches in Lesotho in southern Africa and helps health workers give HIV/AIDS education to the crowds and conduct testing.

"A few years ago I got to sit in on some of the HIV testing," Bren recalls. "It is one of the things I will probably die remembering. You have these little tents next to all the sports going on, and the kids are lined up outside to have a pinprick HIV blood test. I was sitting

in the corner of a tent with a teenage girl while she waited the 120 seconds it took for the test to show how her life was going to pan out. Fortunately, she was clear. But it was a harrowing experience for me just sitting there waiting for the result – and that was nothing compared to how it must have been for the child."

As for whether Bren's 4 hours 31 minutes will make it into the *The Guinness Book of Records*, that will have to wait until his witness statements are ratified. "Getting a World Record was never the point," says Bren. "It was really about helping Kick4Life." To support Bren and make a donation go to: [www.justgiving.com/marathon-dribble](http://www.justgiving.com/marathon-dribble).



Courtesy of European XFEL

European XFEL completes construction of 5.8km of tunnels in Hamburg in June. EMBL researchers will make use of the facility



Young scientists from institutes in the Nordic EMBL Partnership for Molecular Medicine visit Heidelberg

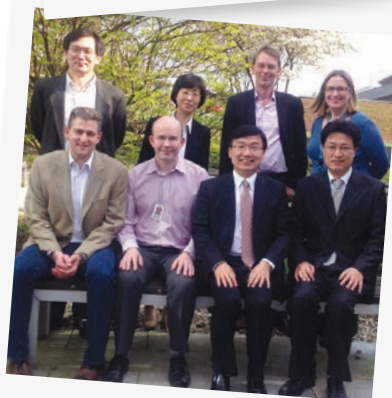


Courtesy of Andrew Cowley

Spring finally arrives at the Genome Campus in Hinxton



Astrobiologist Lewis Dartnell gives a Science and Society Forum lecture in June



A delegation from the Korean National Institute of Health visit EMBL-EBI (see page 11)



Members of EMBL Heidelberg's Swing Club hit the canteen for a dance 'flash mob'

## newsinbrief

- ⇒ The Genome Campus Resources Day on 16 May, hosted by Gerard Kleywegt on behalf of the Hinxton Services Forum, was a rousing success. Experts from all the major data resources at EMBL-EBI and the Sanger Institute gave insightful talks on data visualisation and data integration, exhibited posters and chatted with users. Service developers and researchers mingled during a snack-fuelled poster session. Browse the programme at <http://bit.ly/12pJSeu>.
- ⇒ EMBL-EBI trainers Bert Overduin, Andrew Cowley and Tom Hancocks visited the Faroe Islands in June to deliver training on Ensembl and accessing EMBL-EBI data. A separate workshop saw the trainers working with Illumina to educate local clinicians on genomic technologies and bioinformatics as part of the FarGen project to sequence the genomes of the entire Faroese population.

- ⇒ Representatives from EMBL's International Relations department visited Tartu, Estonia, in May, to meet with leading experts from the country's science community. EMBL's Director of International Relations, Silke Schumacher, took part in discussion sessions with key scientists and policy makers from the government and academia. Focus areas included ways that EMBL and Estonia can explore avenues for closer collaboration, as well as the country's active involvement in initiatives such as ELIXIR.
- ⇒ Registration is now open for the following EMBL-EBI hands-on bioinformatics training courses: Metagenomics: Managing, Analysing and Visualising Data Course, 9–11 September (register by 1 July); Bacterial Genomics and Metabolism (Microme), 8–10 October (register by 9 August). [www.ebi.ac.uk/training/handson](http://www.ebi.ac.uk/training/handson)



- ⇒ Following elections in May, Gerard JP van Westen and Camille Berthelot have taken over the EBI branch of the EMBL Postdoctoral Association. Gerard and Camille will continue efforts to promote the needs of the postdoc community, and facilitate scientific and social interactions across EMBL and the Sanger Institute. Among their tasks will be helping to organise the Postdoc Retreat, at Jesus College, Cambridge, 5–7 August: <http://postdocretreat2013.org.uk>.

1 July EMBL Heidelberg

**Distinguished Visitor Lecture:**

Single molecule fluorescence force analysis of protein dynamics on single stranded DNA, Taekjip Ha, University of Illinois

1 July EMBL Grenoble

**Distinguished Visitor Lecture:**

Revealing new functions of BRCA2 tumor suppressor protein and exploiting its parts as a therapeutic tool, Aura Carreira, Institut Curie

5 July EMBL Monterotondo

**Distinguished Visitor Lecture:**

MicroRNAs and other regulatory RNAs, David Bartel, Whitehead Institute/MIT/HHMI

11 July EMBL Heidelberg

**Distinguished Visitor Lecture:**

Yoshiki Sasai, RIKEN Center for Developmental Biology

12 July NCT, Heidelberg

**NCT-LAUFend gegen Krebs**

(run against cancer)

14 July EMBL-EBI

**Summer Party**

16 July EMBL Heidelberg

**Welcome to EMBL:** An afternoon of activities to help orientate and welcome newcomers to the lab

23 July EMBL Grenoble

**Distinguished Visitor Lecture:**

ChEMBL – A database of bioactive molecules for drug discovery, John Overington, EMBL-EBI

24 July EMBL Heidelberg

**Distinguished Visitor Lecture:**

Russ Altman, Stanford University

8–11 September EMBL Hamburg

**11th International Conference on Biology and Synchrotron Radiation**

8–12 September EMBL Heidelberg

**EMBO Conference Series: Protein Synthesis and Translational Control**

For more details about these events and more, visit [www.embl.org/events](http://www.embl.org/events).



**Meriam Bezohra** has joined EMBL Heidelberg as an administrative officer on the EMBL International PhD Programme. Meriam joins the lab from the Max Delbrück Center for Molecular Medicine in Berlin, where she worked in the group of EMBL alumnus Klaus Rajewsky. Meriam holds a degree in linguistics and a Master of Spanish Philology and English/American Studies – a perfect fit for EMBL's international environment.



Also new to EMBL Heidelberg is **Yvonne Yeboah**, who takes up a position as training lab technician. Yvonne has held similar roles for a structural biology group at the Institute for Molecular Biology in Barcelona and in a forensic laboratory at Goethe University in Frankfurt. She returns to familiar surroundings, having grown up in Ludwigshafen. Just watch out on Halloween: one of Yvonne's passions is spooky face painting – and she's rather good at it!

awards&honours

Congratulations to EMBL group leaders **Eileen Furlong** and **Lars Steinmetz**, who were among 52 scientists elected as new EMBO Members in May, in recognition of their contributions to life science research.

"I'm delighted to become an elected member of EMBO," says Eileen, "I am excited about this new phase in my scientific 'life' and I'm looking forward to helping EMBO in its different initiatives to support European scientific research." "It is a real honour to be selected to represent an organisation that contributes so much to research in the life sciences," adds Lars, "I am very happy to be part of this community and look forward to working with them in their important initiatives."

Among the new members were also numerous EMBL alumni, including Asifa Akhtar, Michael Boutros, Frank Bradke, Nicholas Luscombe, Peter Scheiffele and John van der Oost. The members elected this year will be welcomed into the EMBO community at a Members Workshop held in Heidelberg in autumn 2014.

Matthias Wilmanns receives honorary degree

Alongside renowned poets, authors, linguists and economists, Matthias Wilmanns, head of EMBL Hamburg, was awarded an honorary doctorate at the University of Oulu, in May.

Matthias, whose research studies protein structures and functions using X-ray crystallography, has had a leading role in a number of important EU initiatives. Among these is the BioStruct-X project, which aims to foster the development of structural biology in Europe through transnational access to synchrotron facilities, and has already opened up access to facilities for numerous research groups across Europe, including in Finland.

The award recognises Matthias' contribution in leading this effort, and his role in developing connections between EMBL and institutions in Finland.

"I am touched to receive this award," says Matthias. "Structural biology in Finland is developing at a fantastic pace and this has been enhanced by mutually beneficial exchanges between researchers at EMBL and institutions in the country."



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