The Newsletter of the European Molecular Biology Laboratory

EMBL etcetera

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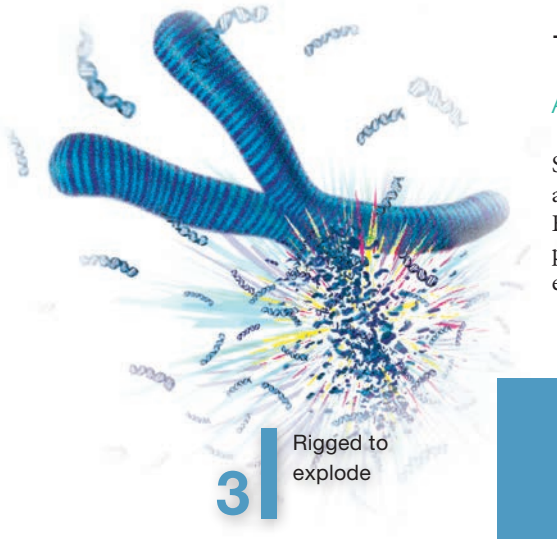
Crystal clear data

A few short weeks before the winter shut down, EMBL Hamburg's new MX1 macromolecular crystallography beamline at the PETRA III storage ring achieved its first data collections.

The diffraction image recorded on 12 December was promptly followed by the first complete data set and thousands of high quality diffraction images. The team of scientists and engineers behind this milestone are delighted with the already high standard of data recorded.

See page 4



3 Rigged to explode

Three decades at the top

EMBL-EBI Associate Director Graham Cameron retires after 30 years at the forefront of bioinformatics, see page 5

Two of a kind

Ambitious projects by two EMBL scientists achieve multi-million Euro grants

Senior scientist Detlev Arendt, and EMBL Associate Director Matthias Hentze, have each been awarded 2.5 million Euro from the European Research Council (ERC) for the next five years. ERC advanced grants are typically awarded to principal investigators pursuing research that pushes the boundaries of its field. Across its sites, nine EMBL scientists have now been awarded either starting or advanced ERC grants.

Find out more on page 3

'You Know Your Blood Type. What About Your Gut Bug Type?', 'Menschen unterscheiden sich in drei Darmtypen', 'Ciascuno ha un'impronta batterica – Tu di quale «enterotipo» sei?' – research by Peer's group on the human gut microbiome, published in *Nature* last April, has captured the media's imagination, and been hailed everywhere from *The New York Times* to Belgium's Radio 1. To top it off, in December, *Science* named it one of the top ten breakthroughs of 2011, acknowledging its impact on the global research community.

Peer in the spotlight again for Hamburg's Spiegel TV

Peer review

Peer Bork, joint head of the Structural and Computational Biology (SCB) unit, has been appointed strategic head of bioinformatics at EMBL Heidelberg.

This additional role sees Peer take responsibility for coordinating bioinformatics activities at the Heidelberg site. His aim is to better utilise the potential of this growing discipline, to adapt to the changing research landscape, to minimise redundant activities, and to promote an active bioinformatics community in Heidelberg that will help EMBL to be at the forefront of modern biology.

"If we can unite our efforts on developing a community identity despite bioinformatics activities being scattered across more than 50 different labs, it will be possible to significantly increase the effectiveness and efficiency of research," Peer explains.

Already fostering this new spirit is a recent initiative emerging from the SCB unit, the 'Bio-IT' portal, which provides a focal point for bioinformatics-relevant information at EMBL Heidelberg. Bio-IT is being designed and actively developed by a working group with members from all Heidelberg units. It will serve as a one-stop-shop for users at EMBL Heidelberg to access and contribute to computational methods and resources, and to get details on services, protocols, training and upcoming events.

"It will be possible to significantly increase the effectiveness and efficiency of research"
– Peer Bork

New to the SAC

Four candidates selected at the Winter 2011 Council meeting for appointment to the EMBL Scientific Advisory Committee (SAC) have confirmed their willingness to serve.

Membership of the committee is carefully composed to ensure all relevant scientific fields are covered. The new members are:

- ***Roderic Guigo***, Bioinformatics and Genomics Programme, Centre for Genomic Regulation (CRG), Barcelona, Spain
- ***Daniel Louvard***, Laboratory of Morphogenesis and Cellular Signalisation, Institute Curie, Paris, France
- ***Ronald Milligan***, Department of Cell Biology, The Scripps Research Institute, La Jolla, United States
- ***Jean Weissenbach***, French National Sequencing Centre (Genoscope), Evry

They are joined by Sandy Schmid, who assumes the position of SAC Chair, and Reinhard Jahn, now Vice-Chair.

Sandy Schmid

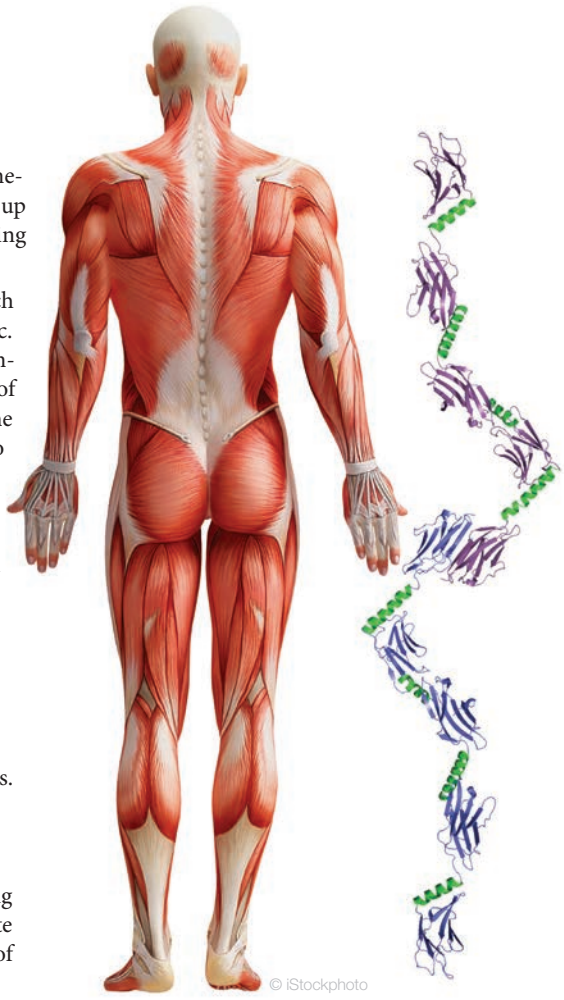
Reinhard Jahn

Let's stretch…

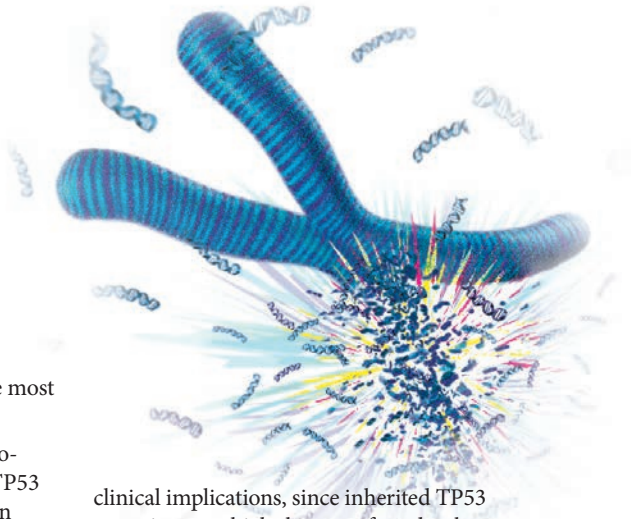
The proteins actin, myosin and titin are known as the big players in muscles. But scientists at EMBL Hamburg have examined another muscle component – myomesin – which, they discovered, can stretch up to two and a half times its length, unfolding in a way that was previously unknown.

Myomesin links muscle filaments, which stretch and contract, so it has to be elastic. Matthias Wilmanns, Head of EMBL Hamburg, and his group used a combination of structural biology techniques to reveal the mechanism behind the protein's ability to stretch. They examined it through X-ray crystallography, teamed up with Dmitry Svergun's group to use small-angle X-ray scattering, and turned to collaborators in the UK and Munich for electron microscopy and atomic force microscopy.

The stretchy part of myomesin analysed by Matthias and colleagues is like a string of pearls, with immunoglobulin (Ig) domains spaced out along an elastic band of structures known as alpha helices. "Looking at these alpha helices was self-suggestive in itself," says Matthias. When the protein is pulled, the helices unfold, whereas the Ig domains do not – a finding that could help to solve an ongoing debate in the field about the potential elasticity of Ig domains.



From guardian to guerrilla



A collaborative study into aggressive cancers has uncovered a 'Jekyll and Hyde' tale: an inherited mutation in gene TP53 – the guardian of the genome – that could cause chromosome 'explosions' linked to cancer

A team of researchers from EMBL Heidelberg, the German Cancer Research Centre (DKFZ) and the University Hospital Heidelberg, combined expertise in basic and medical research to investigate the genetic cause of medulloblastoma – a childhood brain cancer, which is the second most common cause of infant death in developed countries.

"The interdisciplinarity was really important," says bioinformatician Tobias Rausch from the Korbel group and EMBL's Genomics Core Facility, who analysed the genome sequence data obtained by fellow group member Adrian Stütz. Tobias and Adrian valued the interaction with the Core Facilities at EMBL and physicians at the DKFZ, in particular David Jones. "Whenever I had a new set of genetic variants, I could send them to David, and because he has been working with medulloblastoma for years, he could point out which might be the most relevant for this disease."

The scientists found that, in medulloblastoma patients with an inherited TP53 mutation, one or two chromosomes in each tumour cell had countless parts in the wrong order, were missing some genes or had extra copies of others – telltale signs of chromosome explosion, or chromothripsis. "This mutation must be involved either in shattering chromosomes, or in preventing the cell from reacting when a chromosome shatters. Either way, the result is a tumour," explains Jan Korbel.

"Chromothripsis is thought to cause two to three per cent of all human cancers," says Jan, "so if we can really prove how the TP53 mutation affects this process, it could have a big impact on our understanding of how healthy cells in the body turn into tumours." The new knowledge also has immediate clinical implications, since inherited TP53 mutations – which the team found to be more common in medulloblastoma than previously thought – represent 'actionable' genetic variants useful for diagnosis and treatment of cancer.

The study, published in *Cell* in January, was undertaken as part of the International Cancer Genome Consortium (ICGC), an effort to study 50 different types of cancer worldwide.

✏ Learn more about why the team first looked at the inherited mutation, and how it could cause chromosomes to explode, in a video interview with Jan at **www.embl.org/explore**, or on the EMBL YouTube channel, **www.youtube.com/emblmedia**.

Two of a kind

Innovative and ambitious projects by two more EMBL scientists have been recognised by advanced grants from the European Research Council.

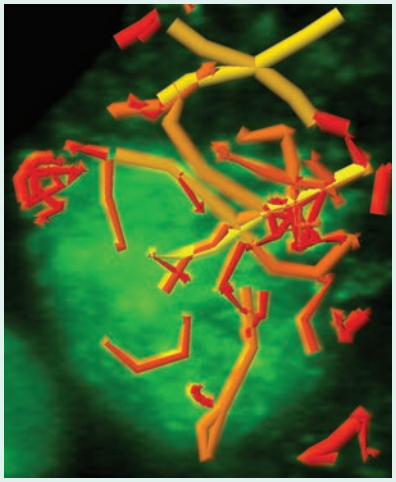
Detlev Arendt, a senior scientist, has been awarded 2.5 million Euro for the next five years to investigate the developmental and evolutionary emergence of neuronal circuits, the basic units of the nervous system. His research will compare the highly complex brain circuitry of vertebrates and insects with that of a simple marine organism, *Platynereis dumerilii*. "We will examine the chemosensory-motor forebrain circuits of *Platynereis*, and hope to learn more about the evolution of information processing and integration into brain centres," explains Detlev.

Matthias Hentze, EMBL Associate Director, has been granted the same amount to investigate the effect of metabolism on genes. His project is based on research linking some of the enzymes involved in metabolism to gene regulation. His group will examine whether these enzymes are a hidden connection between metabolism and gene regulation. "We want to understand how nurture and nature influence each other, which is directly linked to metabolic illnesses such as diabetes or heart diseases," says Matthias.

Keeping track of influenza

Monitoring miscreants and finding fugitives is a tricky business, but the police have an advantage if they can locate suspects by tracking mobile phone signals. Scientists could reap similar benefits from being able to track viral components as they move around inside infected cells prior to virus assembly.

Sergiy Avilov, in the group of Stephen Cusack, Head of EMBL Grenoble, and collaborators in the Naffakh group at the Institut Pasteur in Paris, France, have developed a novel method of real-time imaging the life cycle of the influenza virus in live infected cells.



Instead of bugging their suspect with a fully functional tracker, the scientists took a divide and conquer approach. They engineered an influenza virus to produce part of a fluorescent tag attached to one of its proteins, the polymerase. The rest of the tag was produced by the cells into which the virus was injected, thanks to more genetic engineering. The virus is otherwise identical to the one that naturally causes flu, so it infects the cells and replicates normally.

As the two parts of the tag came together, researchers could track the viral protein under the microscope. The work, published in the *Journal of Virology*, opens new avenues for understanding how viruses interact with host cells and for screening for new antiviral compounds.

A frame from a movie of a live cell infected with the tagged influenza virus. Green fluorescent viral components are visible in the nucleus (uniformly bright area) and in the cytoplasm (spots). Tracks of the virus-containing vesicles are overlaid (represented as coloured cylinders)

Highlights at Hamburg's MX1 beamline

EMBL Hamburg scientists and engineers working on the construction of the MX1 beamline at the PETRA III storage ring recently achieved a number of highlights.

MX1 is a wide energy tuneable beamline for macromolecular crystallography. In the last few weeks before the winter shut down, development accelerated from the first beam into the experimental hutch, to full collection of data sets at different energies from 12.6keV to 4.6keV on insulin test crystals.

At the end of November, the experimental hutch passed the radiation protection tests, and during the following week the MD2 diffractometer, slit box and detector were installed and commissioned.

On 12 December the first diffraction image was recorded and two days later the first complete data set was collected, followed by thousands of diffraction images. The data appeared immediately to be of excellent quality, preserving even very weak anomalous signals.

Michele Cianci leads the work on the MX1 beamline at EMBL Hamburg

"Normally, 4.6keV data collection requires a dedicated set up to avoid absorption problems and to produce good data," explains Michele Cianci, EMBL staff scientist leading the work on MX1. "At MX1, we are already doing really well, and have margins for improvement. I am very grateful for the hard work of the entire PETRA III team."

The next step will be to integrate the focussing mirrors into the beamline optics to reduce the beam size, to enable high quality data collection from small crystals.

Occupy genetic switches

Fruit fly embryo showing the cells that will become gut (green/yellow) and heart (red) muscle

Inside a cell's nucleus, genetic sequences known as enhancers act like remote controls, switching genes on and off. In two papers published in January, scientists in Eileen Furlong's group in Heidelberg have gained new insights into how and when enhancers are activated, and discovered that these genetic switches can hold clues to cells' developmental histories.

In work published in *Nature Genetics*, Stefan Bonn, Robert Zinzen and Charles Girardot found that specific combinations of chromatin modifications – chemical tags that promote or hinder gene expression – are placed at and removed from enhancers at precise times during development, switching them on or off. They developed a new method that predicts exactly when each enhancer is activated, in a fruit fly embryo.

In another study, published in *Cell*, Guillaume Junion and Mikhail Spivakov – an EMBL Interdisciplinary Postdoc (EIPOD) working in Eileen's lab and Ewan Birney's group at EBI – discovered that transcription factors are able to attach themselves to enhancers in groups, in a manner that is only partially dependent on the enhancer's DNA sequence. What's more, cells with a shared ancestry have the same patterns of group occupation, even though it means some of those cells have to actively repress enhancers.

Eileen and her group are now extending their work over different tissue types, different developmental stages, and even different species, to get an ever more complete picture of how a single cell grows into a complex organism.

Helping to fight plant pathogens

EMBL-EBI, in collaboration with Rothamsted Research in the UK, has launched a new plant pathogen resource to help researchers find ways to combat agricultural diseases.

PhytoPath uses the Ensembl Genomes browser to combine genome-scale data of important plant pathogen species with published information about the phenotypes of host infections. The resource will provide insights into population-scale variation of crop diseases, which will make it easier for researchers to ascertain the origins of these diseases and devise new strategies for their control.
www.phytopathdb.org

First things first in Grenoble

Friday, 16 December was an occasion full of firsts when the EMBL Alumni Association board met at the Grenoble outstation

This was the first meeting of the newly elected board, the first visit to the Grenoble outstation in the Association's 13-year history, and the first board dinner to be transformed into a staff-alumni get together.

Board members selected two John Kendrew Award winners, assigned funds to reward the commitment of the Iberian and Greek local chapters for their 2012 meetings, reviewed the overwhelming response to the alumni feedback survey, composed four working groups to deal with Association business throughout the year, and enjoyed general introductions and updates regarding alumni and EMBL news.

More than 40 people attended the festive buffet beautifully organised by Rokhaya Tounkara and Dominique Lancon from EMBL Grenoble Administration. "It was a nice balance between scientific and administrative staff from all levels together with local alumni," comments Maria Vivanco, EMBL Alumni Association (EAA) Vice-Chair.

"We are delighted with the decision to hold one board meeting every year at an EMBL outstation, and with the interest of EMBL Grenoble staff today," adds Matthias Hentze, EMBL Associate Director, who represents EMBL at these meetings. "It's great community-building for both staff and alumni."

> "It was a nice balance between scientific and administrative staff from all levels together with local alumni."
> *– Maria Vivanco*

What was neither a first nor a last was the security strikes at Grenoble airport, causing the airport to shut down altogether. Despite this, board members continued in high spirits on the bus back to their hotel with a long-lasting memory of the occasion.

EAA Chair Giulio Superti-Furga joins Jacqueline Mermoud on the bus

Vice-Chair Maria addresses the group

Alumni and Grenoble staff make the most of the opportunity to meet and make friends

Emmanuelle Bensaude, Rokhaya and Dominique get creative at the name badge assembly point

EAA board members take a break from discussing Association business

New board member Preben Morth embraces the name game

Mark your diaries

5 July *EMBL Heidelberg*
Lab Day/John Kendrew Award ceremony: Klaus Tschira Auditorium, EMBL ATC

6 July *EMBL Heidelberg*
EAA Board Meeting: Send your items to **alumni@embl.org**

7 July *EMBL Heidelberg*
EMBL Summer Party/German Chapter Meeting

Gáspár Jékely

Then: Postdoc, Rorth and then Arendt Group, Heidelberg

Now: Group Leader, Tübingen Max Planck Institute for Developmental Biology

Gáspár was selected for his outstanding contributions as one of the pioneers in the eco-evo-devo field. He uses a multidisciplinary approach to address complex questions at the interface of behaviour, neurobiology, biophysics, marine biology and evolution, which could have important ecological relevance. He is also a keen science communicator, having written a book and numerous popular articles.

Simone Weyand

Then: Predoc, Weiss team, Hamburg

Now: Research Associate, Imperial College London and Diamond Light Source

Simone was selected for her impressive achievements within structure determination of secondary transporters as well as her key contributions to the G-protein-coupled-receptor field. She has been highly involved in science communication at high schools and in social engagements for young terminally ill children in the UK. In addition to her significant research activities, she is also a visiting professor in Casablanca.

Two times a winner

There's only one satisfactory solution when a selection committee is challenged to decide between two equally excellent candidates: two winners! And so, the EMBL Alumni Association board selected Gáspár Jékely, former postdoc, and Simone Weyand, former predoc, as the 2012 John Kendrew Award winners.

"I am delighted and honoured to have been selected for the Kendrew award," says Gáspár. "It is a pleasure to be co-awarded with a structural biologist, a field also close to my heart."

"It's a great honour to be selected, in particular because John Kendrew was one of the pioneers in crystallography," adds Simone, continuing: "I'm eternally grateful to my current supervisor who taught me to fish, instead of giving me a fish when I was hungry. "

More good news followed as Roland Specker, the generous John Kendrew Award donor for 2011–2020 agreed to provide the additional funds required for two winners.

Gáspár and Simone will present their work and receive their award at EMBL Lab Day on 5 July at EMBL Heidelberg.

The application deadline for the 2013 award is 29 June 2012. Everyone can nominate and all former pre- and postdocs who left EMBL between 2005 and 2010 can apply. Contact **alumni@embl.org**.

Your feedback – excellent food for thought

More than 830 alumni (that's 33% of those asked) completed the online alumni feedback survey in just two weeks

The aim of the survey was to have alumni evaluate the quality and delivery of EMBL and Alumni Association news, media, services and events, based on their needs.

The feedback was very positive with constructive suggestions in all areas. "The timing couldn't have been better," says Giulio Superti-Furga, EAA Chair, "we were planning to review these services with the new Alumni Association Board in order to support alumni more effectively and efficiently. This data has now set the agenda – a big thank you to all the participants!"

A small detail, which provoked the largest and most passionate response, was the EMBL Heidelberg lunch card for life. Many participants passionately completed the 'comments' field with statements such as: "Lunch card for life?! Where is mine?", and "Lunch card, of course, rules." Others went the extra mile to write a personal message to the alumni office about this service. Michael Boutros, former Developmental Biology predoc, now Professor at Heidelberg University and the German Cancer Research Centre, wrote: "I didn't know that there is a Heidelberg lunch card for life – is this true or an April Fools joke?" For more information on the lunch cards, please see: **www.embl.org/alumni/benefits**.

"We're delighted with the participation rate, which includes all the outstations (22% of the contributors), as well as the quality of the feedback," observed EMBL

Associate Director Matthias Hentze at the Alumni Association board meeting in Grenoble. "We're very much looking forward to reviewing the data in the relevant Alumni Association board working groups, and in discussion with EMBL departments," he concluded.

We will keep you posted when the data is available on the internet, and subsequent actions as a result of the feedback.

– Mehrnoosh Rayner

"Seeing EMBL-EBI develop has been enormously inspiring"

In an interview with *Mary Bergman*, Graham Cameron, Associate Director of EMBL-EBI, reflects on the challenges and rewards of 30 years at the forefront of bioinformatics, before his retirement on 1 March

How would you describe the impact of bioinformatics over the past 20 years?

Since I joined EMBL in 1982, bioinformatics has grown from being a specialist, niche area to being ubiquitous throughout biology. It's hard to say where science would be without bioinformatics – would research really be able to proceed at all? It's a bit like imagining astronomy without telescopes. Bioinformatics is no longer a sub-area of biology, it is part of the connective tissue between all aspects of biological understanding.

When I came to EMBL with a background in psychology and social data management, I expected the biologists to be very data-savvy, and was anxious that I'd be miles behind them; in fact, they were surprisingly data-naive, and I found that I did have something to offer. Of course all that has changed now, and biology has grown into a sophisticated quantitative science in terms of its statistical and computational methods.

What sort of breakthroughs has the EBI made possible?

I'd turn this question round and challenge you to find a modern breakthrough in molecular biology which doesn't depend, at least in part, on the biological data and services of the EBI and its global collaborators. The research of the EBI and the rest of EMBL provides the perfect context for the EBI services, but our work goes far beyond supporting EMBL researchers: our mission is to optimise the benefit to science worldwide.

Our original DNA database was around half a megabase – about as much data as a week or two's email today. Back then, we loaded data onto magnetic tape and mailed the whole collection to our users. Nowadays, the undigested archive of all the data would be useless. There is such a diversity of methods and motivations for high-throughput science, that the search and analysis methods we build on top of the data have become absolutely critical.

Over the course of your career, what has been the biggest surprise?

I was very fortunate because Greg Hamm, who started the EMBL Data Library (I joined in 1982, as its second 'employee'), was an incredibly supportive boss. As he patiently explained the whole idea to me, I realised that this was going to be game-changing. What I did not expect was that I myself would have such deep and sustained involvement. That has been an ongoing pleasant surprise.

What has been the biggest challenge?

Being pitched in competition for research funds with the scientists who are our customers has been a significant source of tension; the information infrastructure simply should not be in direct competition with the researchers it serves.

Recently, there has been substantial progress, and there is an increasing understanding of the importance of the information infrastructure to the life sciences. ELIXIR, we hope, will capitalise on this new climate and create a stable bioinformatics infrastructure for Europe.

> "Bioinformatics is part of the connective tissue between all aspects of biological understanding"
> – *Graham Cameron*

What has been your proudest achievement during your time at EMBL?

The day EMBL Council agreed to establish the EBI was a proud moment. However, when I came onto this campus, none of the new buildings had even been started – I was a 'one-man EBI'. But I consider it a vanity to be too proud: a huge number of people have made the EBI possible, and seeing it develop from two people in Heidelberg to 520 in Hinxton has been enormously inspiring.

What are your hopes for the EBI's future?

I have no doubt whatsoever that the EBI will continue to increase in importance as an information hub for the life sciences. I wouldn't be so bold as to try to predict its path, but I can say that the EBI has gone through some crises over the years and has always come out flourishing. This is because bioinformatics is firmly established as a cornerstone of biological research, and because EMBL provides the ideal organisational and scientific structure for the EBI.

Also, I believe that the EBI's future is secure due to its societal relevance. No scientist or enlightened non-scientist doubts that basic research is of benefit to society. However, the social pay-off from 'blue-skies' research is often remote and difficult to demonstrate. In the molecular life sciences, we are seeing the birth of a new era. Direct applications in health and human wellbeing are emerging, for example in drug development, diagnosis, personalised medicine, crop-science, and our management of the environment. In difficult economic times, governments understandably require robust justifications for spending – luckily, we are now more able to provide them.

What's next for you?

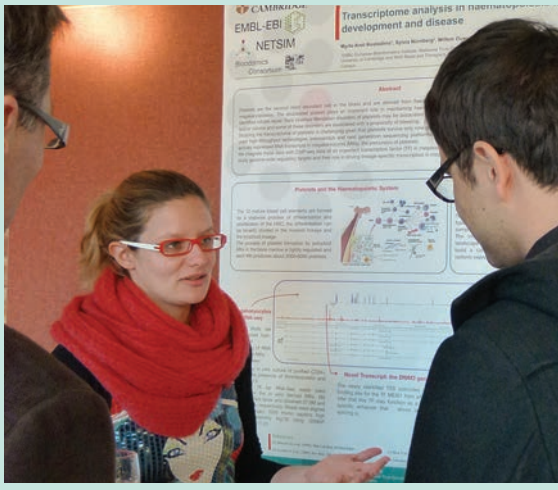
First, I'm off sailing. However, I haven't completely lost interest in bioinformatics…

✏ Ewan Birney and Rolf Apweiler succeed Graham as joint Associate Directors

EBI out of office

If EMBL-EBI found 10 million Euro down the back of the sofa, how would staff spend it? By sequencing every staff member's genome to ensure they're matched to their ideal job role and are served their favourite biscuits at tea time? Or by creating a robot to replace their local doctor? These were some of the mock-proposals pitched by staff to a panel of judges at EBI Day on 13 January.

The event, organised by Associate Director Graham Cameron, also featured talks by senior scientists, presentations on current EBI research, and a poster exhibition.



Visitor vitals

In December, EMBL Heidelberg welcomed Baccalaureate pupils from the European School in Karlsruhe, accompanied by three science teachers and the school's Director, Periklis Pialoglou, also a biologist. Their tour included a close-up of current research – with introductions to *Drosophila* and Zebrafish – and a look at life through a lens with EMBL's microscopy experts.

Their visit concluded a busy year of tours in Heidelberg, only made possible thanks to the enthusiasm, patience and generous support of staff across the laboratory. More than 600 visitors have taken the opportunity to gain an insider glimpse into EMBL's main site. Interested groups visited from as far afield as China, Japan and North America, but the majority travelled from within Europe to see the world-leading research happening right on their doorstep.

With a tour for Egyptian students already under its belt this year, the EMBL outreach team looks set to remain the host with the most in 2012.

Courtesy of Claude Antony

EMBL predocs on course for success

PhD student *Niru Ramanathan* shares her impressions of the EMBL predoc course

Niru with group leader Christoph Merten

"In the knowledge that I was about to embark on the last two months of coursework in my life, I was pretty excited to start the EMBL predoc course. Of course, I was also excited for the right reasons: the prospect of learning about the diversity of research carried out at EMBL, through lectures and practical classes conducted by highly accomplished scientists.

"I enjoyed all eight of the course modules, but if I had to pick a favourite, it was the Developmental Biology module – I had learnt relatively little about this topic at university, so much of it was new. Group leader Detlev Arendt's lecture on modes of development gave me an excellent overview of the basics of animal development. I also found the non-academic lectures, on science communication and presentation skills, for example, to be valuable additions to the main programme.

"As the weeks started to unfold, I soon realised that the course was as much about getting to know the science as it was the people, all of whom were from different countries and educational backgrounds. I even started to make friends with unexpected people – like physicists and chemists!

"To help break the ice at the beginning of the course, we were asked to 'speed date' with one another. Although not the traditional (romantic) form of speed dating, this was nevertheless rather awkward, but it did help us to get started. Various other group activities, such as journal clubs and presentations, gave us further opportunities to get to know each other and also taught us some of the non-academic skills we'll need for our PhDs.

"The end of course party was a great way to celebrate completion of the course, but the excitement and relief that came with it was also tinged with sadness, because many of my newly made friends were soon to leave to other EMBL outstations.

"The course was well organised and struck the right balance between academic and social activities. It was hard work but good fun, and made a great start to my PhD."

Science and IT Heads in the Cloud

EMBL's IT Service, Genomics Core Facility and the Flicek Group at EMBL-EBI collaborate on a flagship project of the European Cloud Computing Initiative

Cloud computing is an important strategy to provide on-demand IT infrastructures and services that elastically meet demand. Given its huge technological and economic impact, cloud computing in and for Europe has become a major focus in the Digital Agenda of the European Commission, and is part of the Horizon 2020 EU Framework Programme for Science and Innovation.

In October, EMBL Heidelberg hosted the second workshop of the European Cloud Computing Initiative, which brings together a number of EIROforum laboratories with leading partners from the European IT industry to evaluate cloud computing in the context of the massive IT demands from science. The consortium is working to establish the Helix Nebula Science Cloud, a sustainable European cloud computing infrastructure based on commercially provided services, initially serving the European Research Area (ERA). "The workshop was very successful for the whole initiative as it allowed us to make all necessary decisions and finalise the planning for the pilot phase," says workshop co-organiser and Head of IT Services at EMBL Heidelberg, Rupert Lück.

During a two-year pilot phase, the planned infrastructure will be deployed and tested based on three flagship projects, proposed by EMBL, CERN and ESA. The EMBL project – a novel cloud-based whole genome assembly and annotation pipeline service for next generation sequencing (NGS) data – involves expertise from the Genomics Core Facility, the Flicek Group, and Heidelberg's IT Services. Once available to scientists inside and outside EMBL, this new cloud service aims to provide an alternative to costly in-house IT infrastructure, bioinformatics and manpower requirements, which currently pose a big hurdle for many laboratories in NGS data analysis. "We are very excited to have the EMBL flagship included in Helix Nebula," says Bob Jones, Head of Openlab, CERN: "The big data and security issues at the heart of next generation sequencing will push cloud services to their limits."

HELIX NEBULA
THESCIENCECLOUD

- From Writing for the Web to Recruitment and Interview Training, the new *General Training and Development 2012* brochure – now available at all EMBL sites – provides details on courses available to help staff learn new skills and prepare for new challenges. Not sure which courses are right for you? Check out the 'career development paths', which give guidance on training for different career stages.
- Members of the EMBL Advanced Training Centre Corporate Partnership Programme convened at the EMBL ATC in Heidelberg for their annual gala event on 26 January. Managing directors, vice-presidents and other high-level guests from all 16 companies involved in the programme gathered for a reception, followed by scientific talks from EMBL experts – including a presentation by Nadia Rosenthal on 'the Australia experience' – and dinner in the ATC foyer.
- EMBL Administration's collaboration with EIROforum organisations continues, with safety officers gathering at the European Space Agency in Noordwijk, The Netherlands, in November last year. Corinna Gorny, Head of EMBL's Health & Safety Office, introduced EMBL to her EIROforum colleagues, and exchanged

views on current and best practice for crisis management, environmental policy and accident investigation. She also gained a fascinating insight into safety in space! Corinna will host the meeting for EMBL in 2013.

- EMBL Explore's latest podcast brings chemistry to life, examining how the relatively new discipline of Chemical Biology is influencing and enriching research at EMBL. Listen to this, and other insightful podcasts covering a range of EMBL-related science and technology, at: **www.embl.org/explore**.

'Let the Lord be thankit!'

Traditional Burns' Night celebrations in Heidelberg and Hinxton provided a welcome retreat from sub-zero temperatures, with the usual mix of a warming Scots supper, fiery whisky, rousing pipers, poetry, and enthusiastic (if not necessarily gifted) céilidh dancing. This year's was an extra special occasion at EMBl-EBI, with soon-to-retire Associate Director Graham Cameron – instrumental in the campus Burns' suppers over the years – treated to a rendition of 'What can a young lassie do wi an auld man?' A printable answer came there none!

Structure and strife?

A recent symposium held at the Grenoble campus shared by EMBL, the European Synchrotron Radiation Facility (ESRF) and the Institut Laue Langevin (ILL), has sought to highlight 'Women in Structural Biology'.

Malene Ringkjøbing Jensen of L'Institut de Biologie Structurale (IBS, Grenoble), organised the fascinating one-day event held in February. Talks relating to research into HIV, structure and function of bacterial lectins, proteins fibrils, and biology of membrane proteins, were given by six distinguished scientists – all exceptional structural biologists and all women.

In the past, we remember Louise Johnson, Kathleen Lonsdale, Rosalind Franklin and Dorothy Hodgkin. Nowadays, how many are they? It appears few women have reached the upper rank. "I was the sole women – I had to cut my hair to fit within the group," laughed Anja Böckmann (IBCP-CNRS, Lyon), who also revealed that just 20 per cent of NMR researchers are women. "According to European Commission statistics, women account for 59 per cent of all graduates, but only 18 per cent of full professors in Europe," added EMBL group leader, Teresa Carlomagno, while Anne Imberty (CERMAV-CNRS, Grenoble) spoke of the impact of 'glass ceilings' and 'sticky floors'.

> "Women account for 59 per cent of all graduates, but only 18 per cent of professors in Europe"
> *– Teresa Carlomagno*

For many, the biggest challenge is how to juggle career and family, especially absences arising from motherhood. But revival is possible, assured Angela Gronenborn (University of Pittsburgh), reminding the audience of the brilliant career of chemist Carol M Robinson, despite eight years out of the lab and dedicated to childcare.

Many interesting questions arose from the discussion: Should more women be invited to international congress? Is mobility and parity a must? Is better self-confidence the solution? "Never mind how many postdocs you've done, just go for it!" concluded Jane Dyson (Scripps Research Institute, USA). A job in structural biology is evidently still a worthy one, irrespective of gender.

– Sukhéna Sarun (UVHCI)

EMBL group leader Teresa Carlomagno presented at the symposium

events@EMBL

6–8 March *EMBL Heidelberg*
EMBO Conference Series:
Visualising Biological Data

14–15 March *EMBL Monterotondo*
Heads of Units/Senior Scientists Meeting

16 March *EMBL Heidelberg*
Science and Society Forum lecture:
Soul Dust: the Magic of Consciousness. Nicholas Humphrey, London School of Economics

26 March *EMBL Heidelberg*
Distinguished Visitor Lecture:
Carol V Robinson, Department of Chemistry, University of Oxford

2 April *EMBL Heidelberg*
Distinguished Visitor Lecture:
Brenda J Andrews, The Donnelly Centre for Cellular and Biomolecular Research, University of Toronto

13 April *EMBL Monterotondo*
Distinguished Visitor Lecture:
(hetero)Chromatin assembly and nuclear organisation. Genevieve Almouzni, Institut Curie/CNRS, Paris

19 April *EMBL Heidelberg*
Distinguished Visitor Lecture:
Ira Mellman, Genetech, San Francisco

20 April *EMBL Monterotondo*
Distinguished Visitor Lecture:
Stem cells, pluripotency and nuclear reprogramming. Rudolf Jaenisch, MIT

26 April *EMBL Heidelberg*
Distinguished Visitor Lecture:
Erin Schuman, Max Planck Institute for Brain Research, Germany

7 May *EMBL Monterotondo*
Science and Society Forum lecture:
Robin Lovell-Badge, MRC National Institute for Medical Research, UK

14–16 May *EMBL Heidelberg*
8th Annual BioMalPar | EVIMalaR Conference: Biology and Pathology of the Malaria Parasite

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

people@EMBL

Ivana Custic is scientific project officer for BioStruct-X – a consortium of 19 partners from 11 EU member and associated states, coordinated by EMBL Hamburg. Ivana gained a PhD at the University of Vienna while working at the Institute of Molecular Pathology. Before joining EMBL, she worked in the University of Zagreb's technology transfer office on EU-funded higher education projects.

Malcolm Jolliffe is the new Head of Finance. Malcolm, a qualified accountant, studied at the University of Manchester (then UMIST). Before joining EMBL, he split his time between Cheshire, Zurich and five construction sites as Finance Director of a large multinational power company. He was attracted by EMBL's international environment – that, and Hoffenheim's football stadium nearby!

Sarah Marshall joins EMBL Hamburg as administrative assistant. She has a degree in English and Spanish from the University of Leeds, and taught English in Toulouse for a year before moving to Germany. Last year, Sarah achieved a master's in European and European Legal Studies from Europa-Kolleg Hamburg. Also new to the Hamburg support team is administrative officer **Christiana Pencheva**. Christiana, originally from Bulgaria, has a master's in German and European Studies, jointly awarded by Sofia University and the Technical University in Dresden. She has six years' experience in public and private administration for international NGOs and, most recently, Apple iTunes.

Virginia Otón is one of two new grants officers in Grants Services. She has a master's in Translation and Interpreting, and an MBA funded by the Spanish government. She has lived and worked across Europe, gaining experience in project management at the UN, EC-funded NGOs and public organisations. She is joined by **Sonja Noss**, coincidentally also a Master of Languages, from Saarland University. Sonja has eight years' experience of research project management, joining from a similar role at an international biomedical research organisation. Virginia and Sonja will support EMBL scientists in the search for suitable funding, the application process, negotiation and project management.

awards&honours

Rocio Sotillo, a staff scientist at EMBL Monterotondo, is one of 28 outstanding young biomedical scientists who have been honoured with a Howard Hughes Medical Institute (HHMI) International Early Career Scientist award this year. The prize, $650 000 for five years, is designed to give a boost to international scientists working in selected countries outside the United States. The award recognises the potential of Rocio's research and will help her to establish an independent research programme.

Rocio (far left) celebrates with group colleagues in EMBL Monterotondo

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