The Newsletter of the European Molecular Biology Laboratory

EMBL etcetera

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A good week for a field trip

Two journalists who got a taste of life at EMBL Heidelberg couldn't have chosen a better time – their stay coincided with Career Day, Lab Day and EMBLEM's tenth birthday celebrations. Nicla Panciera and Adam Gristwood chose EMBL for their placement as part of a course run by the European Initiative for Communicators of Science (EICOS), which is open to journalists from all over Europe. EICOS aims to improve communication between researchers and journalists and make research more intelligible to the public.
More on page 7.

Feeling a little horse

What's everybody looking at?

Find out inside... page 3

Welcome to Heidelberg-on-sea

Building Maintenance have put their heads together with scientists to come up with a solution to Heidelberg's landlocked situation – for a certain worm-like marine cephalochordate, anyway

When Elia Benito Gutierrez joined the Arendt group in February this year, she had quite a challenge on her hands: no one had yet managed to keep a successful breeding colony of amphioxus in a lab, and all other attempts to raise them have been at facilities in coastal regions with good access to fresh seawater. As she and Detlev were embarking on a important project to produce a molecular fingerprint of the animal's nervous system and shed light on the brain development of other species, help was needed, and fast. Find out what happened on page 9.

Photo: Marietta Schupp

EMBO Director Hermann Bujard gave a presentation to celebrate the 40th anniversary of the foundation of the EMBC at an official reception at Palais Prinz Carl, Heidelberg

News from the 37th EMBL Summer Council meeting...

Salary hikes, a new Admin head and more

First things first: yes, Council approved this year's salary adjustments, which are 2.7% in Heidelberg and Hamburg; 3% in Grenoble; 3.9% in Monterotondo and 4% at the EBI. These adjustments are calculated based on a remuneration index, the national consumer price index and purchasing power parities, factors which are different for each EMBL site. You should have noticed your salary adjustment on your July payslip.

Council also approved the appointment of Ralph Martens from the International Criminal Court in The Hague, Netherlands, as EMBL's new Administrative Director. There will be a period of overlap in autumn to ensure a smooth handover before Bernd-Uwe Jahn retires after eight years. The Annual Report 2008-2009 and the draft EMBL budgets for 2009 and 2010 were also approved, as was a promotion for Nick Goldman to senior scientist.

The Scientific Advisory Committee reviews of EMBL-EBI's research, EMBL Grenoble and the Cell Biology and Biophysics Unit at EMBL Heidelberg were presented to Council by the vice-chair of SAC, Roberto di Lauro, who will replace current chair Werner Kuehlbrandt at the end of the year, with Sandra Schmid taking up the role of SAC vice chair. All three units received positive reviews and their scientific performance was rated as outstanding.

Associate Director Matthias Hentze reported to Council that EMBL Heidelberg's Advanced Training Centre will be completed in two sections. The new canteen, photolab and teaching lab section will be ready in September, and the helix part of the building in October 2009. Staff will move into the helix from the end of October, with an official opening ceremony taking place on 11 March 2010, with guests to include Klaus Tschira, science ministers of the EMBL member states, EU representatives and other stakeholders. As well as the official opening celebration, there will be a party for all EMBL staff in the ATC on 11 December 2009.

In his traditional report to council, EMBL DG Iain Mattaj outlined the state of the laboratory for the past year. While eight faculty members have left, 21 have joined or been promoted, and 94% of the newcomers are member states nationals. Iain also drew Council's attention to the Thomson ISI Essential Science Indicators ratings for 1997-2007, which list EMBL as the top European institute for molecular biology and genetics with a ranking of fifth worldwide (the only other European institute to appear in the worldwide top ten is London's Institute of Cancer Research).

Iain also announced plans for EMBL's involvement in a Centre for Structural Systems Biology to be based at EMBL Hamburg. The outstation also hopes to become a player in European XFEL, a new research facility which aims to be operational from 2014 onwards and which will generate ultrashort X-ray flashes to will be used by researchers from all over the world.

The next EMBL Council meeting will be held at Monterotondo from 23 November 2009.

EMBL's turn to chair EIROforum for a year

From July 2009 EMBL took over as chair of EIROforum, a partnership of the seven largest intergovernmental research organisations in Europe (CERN, EFDA-JET, EMBL, ESA, ESO, ESRF and ILL), for a year. During this time, EIROforum activities will include the renewal of the Statement of Intent, which was signed with the EC in 2003; it will also be reviewed and updated to to express the mutual interest in continuing the cooperation. Other events will include the biannual Assembly of the EIROforum Director Generals, which will be hosted by EMBL in November and May.

Also in November, EMBL and its EIROforum partners will organise a conference on technology transfer in Heidelberg to exchange knowledge and best practices across disciplines. EIROforum is also planning to establish a series of teacher training courses and to continue the publication of *Science in School*, the European journal for science teachers, and will exhibit at the 2010 Euroscience Open Forum (ESOF) in Turin.

The mission of EIROforum is to support European science in reaching its full potential by facilitating interactions with the EC and European Union, national governments, industry, science teachers, students and journalists.

Standing on ceremony

Alongside the new beamlines for structural biology at the PETRA III synchrotron at Hamburg's German Synchrotron Radiation Facility (DESY), an annex building is being constructed which will house integrated facilities, offices and laboratories, as well as a cafeteria and seminar room for DESY and EMBL staff and users. On 9 July, EMBL staff from Hamburg and Heidelberg got together with members of DESY for the traditional 'topping out' ceremony of the building, and to celebrate the close collaboration which DESY and EMBL have enjoyed for many years.

"Our collaboration with EMBL is a jewel in the crown of science in Europe," said Chair of the DESY Directorate Helmut Dosch in his speech, after which the assembled throng watched the traditional *Richtsfest* ceremony which sees the building foreman toast the new construction.

Building 48e will contain laboratories for sample preparation and characterisation and Europe's largest high throughput crystallisation user facility, as well as a computing facility for data evaluation. The inauguration is planned for November 2009.

Following the Hamburg tradition of naming the annex buildings (Siberia, Helgoland and Zanzibar), the outstation's PETRA III team looks forward to hearing what name their new home will receive.

– Rosemary Wilson and Stefan Fiedler

Is it a bird? Is it a plane? No, it's foreman Sven Kühl on top of the new PETRA III annex building...

Photos: Bernd Robrahn

Science for life in Europe

Nike has 'Just do it', Apple has 'Think different', Allinsons has 'Bread wi' nowt taken out'... and now EMBL has a new slogan, 'Science for life in Europe'.

The new tagline was chosen from a shortlist of six after the entire EMBL community had been asked for their suggestions. The Lab Day poster session included a ballot box for people to vote for their favourite, and predoc Xavier Heiligenstein's brainwave was the winner. The slogan will appear on promotional materials and the EMBL exhibition stands.

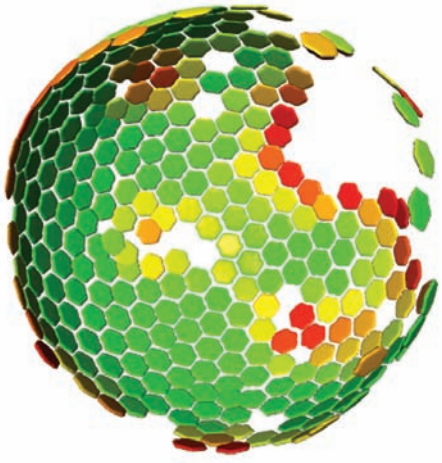
"I just wrote it down just as it came to me, thinking that a brainstorming would combine many ideas," said Xavier. "I never thought the phrase would be taken as it was, so I'm really happy that my simple idea met with such enthusiasm."

Beautiful but deadly

The groups of John Briggs at EMBL and Hans-Georg Kräusslich at Heidelberg University have used cryoelectron tomography to generate a 3D reconstruction revealing, with unprecedented detail, the structure of the ball-shaped protein coat of the immature HIV virus (below). This is the form of the virus as it is released from infected cells. Once outside, the spherical protein lattice is modified to a more conical shape as the virus matures into its fully infectious form.

They hope that their findings will help to unravel a crucial stage in the HIV lifecycle, perhaps even revealing new chinks in the armour that could be targeted by drugs in the fight against the virus.

In cryoelectron tomography a sample is instantly frozen and imaged with an electron microscope from different angles, producing a 3D computer reconstruction.



Improvements for an information age

Several exciting changes are underway for EMBL-EBI's nucleotide database, EMBL-Bank, including its 100th release, a recent integration with two other resources to form the European Nucleotide Archive (ENA) and the appointment of Guy Cochrane as the new team leader for the ENA.

The ENA brings together EMBL-Bank (www.ebi.ac.uk/embl), the Sequence Read Archive for data from high-throughput sequencing projects and the Trace Archive that was transferred from the Wellcome Trust Sanger Institute to EMBL-EBI last year. The ENA will strengthen the integration that already exists between these three resources, helping researchers deal with the rapidly increasing amount of data being generated and ensuring the archive will adapt easily to evolving needs.

The 100th release of EMBL-Bank, perhaps the oldest public database of DNA and RNA sequences, holds over 160 million entries comprising nearly 300 billion nucleotides. A collaboration between EMBL-EBI, the US Genbank and the DNA Databank of Japan, it represents a comprehensive archive of the world's nucleotide sequencing data, providing the source information for secondary bioinformatics services such as Ensembl and UniProt, with which most scientists access the data.

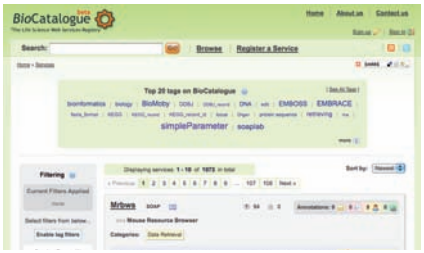
You may have already noticed differences in the EMBL-Bank sequence submission process, both for small-scale users and for huge amounts of data from next-generation sequencing projects. Future developments within the ENA will improve integration of ENA data and the usability of the database. For example, the team is developing a search algorithm capable of working with very short reads from the latest high-throughput sequencers, which are tricky to assemble. Ultimately, the ENA intends to offer its own user-friendly browser, enabling searches through related sequences using cross-references in ways not currently possible. It's hoped that all the changes will be rolled out within the next 12 months.

For Guy, a particular challenge is reliably mirroring the large amounts of data between Europe, the US and Japan. "The creation of the ENA means a much broader scope, offering the potential for new collaborations," he says. "Users will receive a more comprehensive service, whether through ENA directly or one of EMBL-EBI's other core services."

One stop shop

EMBL-EBI and the University of Manchester have launched a new web resource, **Biocatalogue.org**, a central repository for online biology-related services, tools and databases. There are more than 1000 on the list so far, from the most well known and established – the largest provider to date being the EBI – to the newest. Users can search by category (Data Retrieval, Microarrays or Sequence Analysis, for example) or by service provider. Every listing is annotated and rated by curators, service providers and users with an at-a-glance traffic light system.

"It could accelerate research in a range of disciplines, including pharma, medical and agronomic fields, and acts as a forum for researchers to make contact with service providers and other experts,"says Rodrigo Lopez, head of External Services at EMBL-EBI, who's leading the project with Carole Groble at the University of Manchester.



Dmitri chairs the remote SAXS experiment at the SBS. The screen on the left shows the remote access interface with cameras displaying the robot and the sample cell; on the right, a Skype window shows EMBL's SAXS group monitoring the experiment in Hamburg

The joy of (remote) SAXS

On 26 May EMBL Hamburg made history by linking to the other side of the world – Nanyang Technological University's School of Biological Science (SBS) in Singapore, to be exact – to conduct the world's first remote synchrotron small-angle X-ray scattering (SAXS) experiment.

It marked a major landmark in a series of developments aimed at establishing a completely automated SAXS experiment pipeline undertaken over the past several years by Dmitri Svergun's group.

This event formed a module of a course – southeast Asia's first practical training in SAXS – run by members of the Svergun group who had travelled to Singapore. While around 60 students, professors and local dignitaries watched, their colleagues back in Hamburg placed the SBS group's previously-sent samples into the automated liquid handling robot at the SAXS beamline X33 on the DORIS storage ring. The SBS team could then remotely control the experiment through to data acquisition, analysis and 3D model building.

"The EMBL SAXS beamline on DORIS has been using an automated sample changer since 2007, and the group has also been developing major software packages for automated SAXS data interpretation which are widely used in the scientific community worldwide," explains Dmitri. "The ultimate goal is that scientists will not have to travel to the synchrotron to do experiments, but can steer the entire experiment from their own computers at the home institute."

Given the increased demand in synchrotron SAXS from biological solutions, automation of the experiment has become a must, saving time and funds as well as significantly facilitating access to the large-scale facilities. This will become essential when the group moves to PETRA III and the new BIOSAXS beamline, which will be constructed and operated in collaboration with the GKSS Research Centre, Germany.

Ten years of technology transfer

EMBLEM: a look back...and a look forward

When EMBLEM was established in 1999, EMBL hoped it would break even within ten years. In fact, as the company celebrated the end of its first decade on 19 June, there was even more cause to party

Party photos: Marietta Schupp

Photo: Christine Panagiotidis

Top and above right: EMBLEM pushed the boat out with their 10th birthday celebrations on 19 June. Above: EMBLEM's current line-up (back, l-r: Ilka Singer, Jürgen Bauer, Jörg Rauch, Martin Raditsch, Gábor Lamm, Thorsten Schneider; front: Yvonne Powell, Birgit Kerber).

Exceeding all expectations, EMBL Enterprise Management Technology Transfer GmbH – EMBLEM for short – has actually been generating a profit for EMBL and its scientists since as long ago as 2004, less than half the time predicted. Not only that, it has helped 400 EMBL staff become inventors, and has more than 250 granted patents and patent applications and 11 spin-out companies on its portfolio.

But what is technology transfer, anyway, and what does this success story actually mean for EMBL and its scientists? It's a fairly new concept; while research institutes such as MIT, UCSF and Harvard in the US have long benefitted from the services of nearby organisations, the idea of active technology transfer policies only really entered the consciousness of institutes in continental Europe towards the turn of the 21st century.

"Innovation is driven by excellent basic research," explains Gábor Lamm, managing director of EMBLEM. "It's essential to have mechanisms which ensure that scientific results and discoveries can properly and rapidly be translated into practical applications and marketable products to the benefit of society at large."

It's one of EMBL's missions to develop its discoveries to benefit society, but before the existence of EMBLEM the protection and commercialisation of intellectual property and inventions was done on an *ad hoc* basis. Creating EMBLEM allowed the process to be streamlined, ensuring a steady income for EMBL and benefiting the member states and society as a whole by translating basic research results into marketable tools and products. It also builds on the renown of the institute and boosts public trust in it, and the scientist inventors can enjoy the recognition and remuneration that marketing an invention brings.

EMBLEM is run by business professionals who, following their scientific training, gained considerable experience in industry: Gábor completed his PhD at EMBL Heidelberg before working as a researcher at Vienna's Boehringer Ingelheim Institute of Molecular Pathology (IMP) and entering industry at Wacker Chemie. He joined EMBLEM in 2000 and has systematically built up the company ever since.

In 2001 EMBLEM helped established the €26million EMBL Technology Fund (ETF), managed by EMBL Ventures, to invest in the creation of further start-up companies, and

> "Innovation is driven by excellent basic research"
> *Gábor Lamm*

after redeeming all past investment by 2004, was selected in 2008 to push forward the technology transfer activities of the University of Heidelberg's Medical Faculty and associated clinics in a consortium with the technology transfer arm of the German Cancer Research Centre (DKFZ).

As an important part of their activities, EMBLEM also offers training in technology transfer. "It's useful for young scientists to know what sort of ideas and results are commercialisable, what the criteria are for patentability and what the components of a successful start-up company are," says Deputy Managing Director Martin Raditsch. "Some inventors fear that patenting research results could prevent them from being published later in scientific journals, or that patents and copyrights hinder innovation. In fact, academic research is usually unaffected by patent protection."

You can browse EMBLEM's products and spin-out companies on the revamped website, **www.embl-em.de**, which offers new features such as a fast and easy download area for EMBL-developed software and a list of available technologies for commercial partners interested in licensing. Simply contact the team to find out more, whether you're a potential scientific inventor or industry partner or have an idea for a start-up company.

"Our process provides inventors and founders with all the tools and support required to rapidly develop and deploy their ideas, and we collaborate with more than 250 licensees of EMBL technologies and academic partners worldwide," says Gábor.

The shape of things to come

Little and large: there's quite a change afoot at the PDBe, with Gerard (right) taking over from Kim

In July Kim Henrick, team leader of the Protein Data Bank in Europe (PDBe), bid EMBL farewell after 13 years. He leaves a huge legacy: the PDB has made tremendous progress under his stewardship, and the battery of tools Kim developed promise to influence the development of structural biology for years to come. As EMBL-EBI Director Janet Thornton says: "The establishment of the global wwPDB, used by thousands of researchers today, reflect Kim's vision for a united scientific enterprise, his dedication and hard work."

The PDB started life in the early 70s in Brookhaven, USA as a repository of protein structure coordinates run by the Research Collaboratory for Structural Bioinformatics (RCSB) consortium. When Kim joined EMBL-EBI in 1996, the Macromolecular Structure Database (MSD) team had just been created to partner the RCSB to handle the increasing flood of structural data, with Japan coming on board later. There were just four members of the MSD team; across the pond, the global PDB database contained about 5,000 entries.

In the late 90s, the PDB moved to RCSB-Rutgers in New Jersey, and when Kim had taken over the leadership of MSD in 2001, he strengthened the collaboration between the sites, founding the Electron Microscopy Data Bank (EMDB) a depository for models and data from cryo-electron microscopy. A major milestone was the formation of the worldwide Protein Data Bank (wwPDB) in September 2003 by the three founding members: the RCSB, the MSD – now known the PDBe – and the PDBj (Protein Data Bank Japan). This provided a global repository of macromolecular structure data for experimental data and structures from crystallography (X-ray) and nuclear magnetic resonance (NMR) spectroscopy, providing comprehensive, integrated and publicly available data.

> "Kim will be a hard act to follow"
> *Gerard Kleywegt*

Since the creation of the wwPDB, the PDBe team has worked with its collaborators to improve the quality of the database by correcting inconsistencies and by creating a unified archive for all data from the three partners, as well as developing tools to assist researchers when submitting data. In addition, PDBe team efforts have improved integration with the not just the rest of EMBL-EBI's data sources but also external external databases such as UniProt, Pfam, InterPro, SCOP and CATH. Users can use the PDB – in which there are now more than 60,000 structures available – to perform complex queries and structural comparisons, visualise ligand binding and to explore protein interfaces, surfaces and assemblies.

Kim will be replaced by Gerard Kleywegt, who has just been appointed Professor of Structural Molecular Biology at Uppsala University, Sweden. Gerard's no stranger to the PDBe, having served on its Scientific Advisory Board and as a representative on the wwPDB Advisory Committee. "Kim will be a hard act to follow," he says. "I'm sure I speak for everyone when I thank him for all his work over the past 13 years."

Celebrating fruitful collaborations: inauguration of Bio-SAXS

On 15 June, EMBL joined ESRF Council representatives and staff in Grenoble for the official inauguration of the new Bio-SAXS station ID14-3, dedicated to solution scattering of biological macromolecules. The project was highly collaborative from the beginning, with staff from EMBL Hamburg working with colleagues at EMBL Grenoble and the ESRF to convert ID14-3 to a SAXS beamline to cope with heavy demand. EMBL Grenoble's Diffraction Instrumentation team, led by Florent Cipriani in collaboration with EMBL Hamburg, developed a faster and more efficient sample changer to allow optimal use of third generation synchrotron beams. This was based on an existing automated sample changer built under the supervision of Manfred Roessle and implemented at X33, which is run by the Svergun group at EMBL Hamburg. A working prototype at ID14-3 was demonstrated to the visiting guests.

Photo: Chantal Argoud, ESRF

To represent the collaborative nature of the project, the beamline was inaugurated by cutting two ribbons at the entrance to the experimental hutch by (l-r) ESRF Council chair Robert Feidenhans'l, head of EMBL Grenoble Stephen Cusack and ESRF DG Francesco Sette. The first official users collected data in November 2008 and results are already being published.

www.esrf.fr/UsersAndScience/Experiments/MX/About_our_beamlines/ID14-3

Where next after EMBL?

"To stay in academia, you have to be convinced about the topic you are working on, and be sure that it's going to motivate you for the next ten to fifteen years." This was the message from former EMBL Monterotondo group leader Walter Witke at the 'Where next after EMBL?' event at EMBL Heidelberg on the morning of the summer party. "Once you've chosen this path, be stubborn!"

Alumni based in Germany met to catch up with old friends and present their career paths after leaving EMBL, with speakers from academia and industry giving a fascinating insight into future options and some valuable career development tips. While Walter, now professor at the University of Bonn, was speaking for the academic route, Luca Toldo, principal research scientist at Merck and former EMBL staff scientist, promoted industry. "My motivation is driven by the goal to operate in a worldwide competitive business producing meaningful benefits for patients, doctors and the scientific community," he said.

Having been successful both in science and industry, Gábor Lamm, Managing Director of EMBLEM and former Gene Expression predoc, concluded that neither side can live without the other. "Industry creates devices for scientists, but requires their scientific input to get there," he said, going on to present EMBLEM's work.

EMBL alumni in Germany

The largest clusters of alumni live in Heidelberg (110), Dresden (43), Munich/Martinsried (38) and Berlin (34); they work at the University of Heidelberg (37), Dresden's MPI for Cell Biology (29) and DKFZ, Heidelberg (22).

Of the 68% alumni working in academia in Germany (328), 29% are at an MPI (95), 19 as directors.

Matthias Hentze talked about how proud EMBL is of its relationships: with current EMBL staff on the one hand, and its alumni through the Alumni Association on the other. He pointed out that the large staff presence amongst the fifty participants on the day was a direct result of the increasing efforts by the association to include staff in their activities, projects and services as early as possible.

Other speakers on the day were Werner Kühlbrandt, Director of the MPI for Biophysics in Frankfurt and former EMBL group leader and senior scientist, who's also chair of the Scientific Advisory Committee, Daniel Forler from Bayer Schering Pharma AG and Pavel Tomancak (see below).

The Alumni Association would like to thank all the speakers for their excellent contribution to this event. To view the programme of talks and participants, please check www.embl.org/alumni.

A model career

One of the interesting career paths outlined at the 'Where next after EMBL' event was that of former EMBL predoc Pavel Tomancak, now a group leader at the MPI for Molecular Cell Biology and Genetics (MPI-CBG) in Dresden. He has gained experience in three very different fields during his academic career. "Thanks to the freedom in Gerry Rubin's lab at Berkeley, where I was a postdoc, I was able to move from the bench to computational biology" he explains. "I made a final transfer to image analysis at MPI-CBG because it is so important – most primary data in biology are images."

As part of his work there, Pavel generated the Genomic Fosmid Library, which covers 90% of genes in the *Drosophila* genome. He also promotes a new image analysis open source project called Fiji (Fiji Is Just ImageJ). Though a world away from the PhD he completed in Anne Ephrussi's lab at EMBL on the genes involved in the establishment of the *Drosophila* oocyte polarity, he recalls his early days here with appreciation for the great start to his scientific life. "I was one of the first eastern European students to be accepted at EMBL, and I was known as 'Skodaman'," recalls Pavel, who comes from the Czech Republic. "It's when you leave that you realise there are people worldwide benefiting both professionally and personally from the EMBL networks they build. As soon as I got off the plane in California when I started my postdoc I met three people from EMBL! It makes you feel at home all over the world."

Photo: Christine Panagiotidis

At MPI-CBG, though, he's reminded of the old days all the time – the institute is known as the 'Dresden model', inspired by EMBL, and there are no fewer than 29 EMBL alumni currently working there. "The two share many principles: independence for young groups, competitive packages, locations in nice cities, excellent PhD programmes and state-of-the-art facilities – and, of course, the parties," Pavel says. "EMBL has changed the culture of science in Europe by exporting such ideas."

Where ITs @

It's thanks to EMBL's IT group that we can maintain contact with alumni via online registrations and updates – an interface which was set up in 2003 by Björn Kindler. Since his departure it has been enhanced by Matthias Helmling to carry out advanced searches and to import the records of all staff from the SAP-HR system automatically when they leave. We caught up with three alumni who chose the IT path precisely for the buzz of helping others: Björn, FACETS project administrator at the Kirchhoff Institute for Physics; Marc Hemberger, head of IT at BioQuant and Daniel Browne, systems administrator at Cellnetworks, all at Heidelberg University.

Björn, Marc and Daniel

Photo: Georgios Nikolis, BioQuant

How did you get into IT, and what do you like about it?

MH: After my PhD in physics I decided against more research and opted for a career in software development and later system administration. Communication, talking to people and providing solutions are my favourite aspects of the job. I like being proactive – seeing a need coming up and already having a solution to hand – which requires a good understanding of my 'customers' and their work.

BK: IT became a hobby when the first affordable computer system became available, but as I thought the world already had enough book-keeping programs, I did a PhD in biochemistry. During that time, I discovered my passion for extracting something meaningful from a lot of data and replacing repetitive work.

DB: I was one of those people who came across computers only when I started working. During a training course for WordStar the instructor recognised my talent for learning quickly and encouraged me to assist the others. That's when I realised that I enjoy supporting others as much as I do working with computers.

What did you do at EMBL?

MH: I was at EMBL from 2001-2006, responsible for the administration of mail and backup infrastructures and the general purpose compute cluster. After the departure of Hans Döbbling, I was interim head of IT, providing solutions for completely different user groups. What was particularly special was being able to try something out and getting it right before going to 'market'.

BK: As IT architect and programmer between 1997 and 2006, I maintained the EMBL webserver and was responsible for data integration applications, i.e. getting data from one system into another. I especially liked the contact with the customers and the opportunity to make their work easier or less repetitive.

DB: I was a desktop systems manager from 1997-2006, responsible for the installation of new computers and printers, hardware/software repairs and first level user support. We were the human face of IT, letting users know what the group was doing and passing on their feedback. The most challenging part was sacrificing our work schedule due to the sheer number and unpredictablity of the requests to IT!

How is your job different now?

MH: We're building a powerful infrastructure for high throughput and high content microscopy and next generation sequencing. Being at a university with user groups all over campus is very different to working at EMBL, and creating an IT setup at a new institute is exciting.

BK: I'm doing administration for the FACETS project – including, of course, webserver and self-written web applications as well as reporting to the EU. Our project works towards a concept for neuro-inspired computing. The challenging aspect is working with 15 groups in seven countries to strict deadlines.

DB: My responsibilities include project conception, realisation and maintenance. The most obvious difference is the pace of change. EMBL was always able to be at the forefront of IT trends due to its size and budget.

Is there life outside computing?

MH: Yes, I'm chair and swimming instructor for the Deutsche Lebens-Rettungs-Gesellschaft Schwetzingen, and spend the rest of my free time with my 18-month old son, Benedikt.

BK: I'm still a member of the EMBL dive club, and meet with current and former EMBL staff on our trips.

DB: I play golf with the EMBL golf club. I've been trying to lower my handicap but am only getting better at losing the balls!

Please mark your diaries:

- **2 October:** local chapter meeting at the University of Porto, Portugal.
- **16 November:** Application and nomination deadline, John Kendrew Young Scientist Award 2010.
- **14-15 December:** 14th Alumni Association board meeting, EMBL Hamburg. E-mail alumni@embl.org by 26 November with issues you'd like the Board to consider.

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

A good week for a field trip

Photo: Marietta Schupp

Adam Gristwood and Nicla Panciera take a well-earned break

The two journalists who got a taste of life at EMBL Heidelberg this year couldn't have chosen a better time – their stay coincided with Career Day, Lab Day and EMBLEM's tenth birthday celebrations.

Nicla Panciera and Adam Gristwood, who chose EMBL for their placement as part of a course run by the European Initiative for Communicators of Science (EICOS), went away with the impression that, as well as being Europe's hub of excellence in molecular biology research, EMBL is also Party Central.

"I'm certainly going to steal some ideas for my own institute, particularly Lab Day," says Nicla who, as well as contributing to Italy's *La Stampa* newspaper, is also press officer at the University of Trento's Center for Mind/Brain Sciences (CIMEC). "I was keen to visit EMBL because I wanted to see how such a large community of scientists gets along. I found it's almost like a big family – and the group leaders here are so young!"

The EICOS course, which is open to journalists from all over Europe and from all backgrounds, aims to improve communication between researchers and journalists and make the activities of scientists more intelligible to the public, so Nicla was especially impressed to witness first-hand the good communication skills of EMBL scientists. "In Italy our scientists often say they're too busy to talk about their work. They think it's a waste of time," she explains. "At EMBL, everyone's aware of the possibilities and opportunities that are opened up by presenting their research to the outside world."

Adam, who edits the UK's Public Service Review: Science and Technology and is based in Manchester, agrees. "All too often scientists are afraid to simplify complex theories," he comments. "Scientific communication can be like treading a very fine line."

"I get the impression that the scientists here are involved in something much bigger than just their science, which helps in all aspects of life," adds Nicla. "We've talked to some really fascinating people and collected almost too much material!"

> "I'm going to steal some ideas for my own institute, particularly Lab Day"
> *Nicla Panciera*

During the week, the journalists spent time with scientists from all units and career stages and heard about some of the main areas of research at EMBL. Adam found the institute's interdisciplinarity particularly inspiring. "There's such a diverse range of scientists here working with fantastic facilities in a whole host of different fields, and their integration opens up entirely novel possibilities in research," he says.

"One postdoc I talked to was saying that all the fields are represented within her own group, which is amazing," adds Nicla.

The journalists have taken away a wealth of ideas. "One of my articles is going to look at how the EMBL model could be used for a future centre for climate change," says Adam. "The scientists here seem to be encouraged to take risks, which is refreshing. Most institutes are too worried about cost."

As well as getting an overview of the science and outreach activities, Nicla and Adam, who picked EMBL from a choice of 15 other research institutes across Europe, were able to mingle even more at the social events on Wednesday, Thursday and Friday nights. "Is it like this all the time?" Adam was heard inquiring worriedly. "I'm not sure I could take the pace..."

Bright sparks

Photos: Hugo Neves

The Kinderhaus kids enjoyed learning all about fire and its dangers with a visit from the Kreis Bergstraße and Heidelberg fire brigades on 7 May. After a drill, during which their calm, unhurried evacuation in hand-holding pairs should have been an inspiration to the adults of EMBL at their own on 26 June, the children spent the rest of the morning tearing around on mini fire engines and fighting raging infernoes with the help of real firefighter Wilfried Staudigel and his colleagues, who also explained about emergency procedures and equipment.

Summer party

EMBL Heidelberg staff and their families enjoyed a day of rides, theatre and music at this year's Summer Party on 11 July. There were many activities for kids including pony riding, bouncy castles and face painting, as well as science games. Musical entertainment came from the Walldorf youth band, the Alptraumboys and the Freddy Wonder Combo. As ever, a wonderful array of dishes were prepared by Claus Himburg and his canteen staff. We'd like to thank the committee who helped make this year's event another success.

Thanks to your contributions to this year's tombola, we managed to raise €5,025 for the neighbouring Waldpiraten camp for children recovering from cancer. A cheque will be handed over in August.

– Catherine Floyd

Photos: Christine Panagiotidis

MMPU discovery may help fight major cause of heart disease

When was the last time you took a cholesterol test? Are you feeling guilty about that slice of cake or extra helping of chips? As we all know, high levels of cholesterol in the bloodstream seriously increase the risk of heart disease – but now the groups of Rainer Pepperkok at EMBL and Heiko Runz at the University Clinic Heidelberg have brought us a step closer to understanding how cholesterol levels are regulated by identifying 20 of the genes involved.

Despite its bad press, cholesterol is vital to the smooth running of our bodies; it keeps cell membranes flexible and is essential in many metabolic processes. Either made in the liver or taken up from the diet, it is transported around the body in the bloodstream and taken up by cells as they need it. It is when blood cholesterol levels get too high that we risk developing heart disease.

The researchers deprived isolated human cells of cholesterol and then looked at the whole genome to find genes that altered their expression in response, revealing hundreds that might be involved in cholesterol regulation. To check which ones were really important, they used RNA interference to systematically turn off each candidate gene, revealing which had an effect on cholesterol uptake and on cholesterol levels inside cells.

Of the 20 genes shortlisted, 12 were previously unknown. The teams are now trying to discover how these novel genes are involved in regulating cholesterol and whether they might be affected in patients. Besides giving scientists new leads to uncover the mechanisms behind cholesterol regulation, the discovery could open new avenues for developing targeted drug therapies for cholesterol-related diseases.

The research was conducted under the Molecular Medicine Partnership Unit (MMPU), a collaboration between EMBL and Heidelberg University. "It allowed us to use EMBL's technology to answer questions that first arose at the university, whose clinical aspects will now help in the follow-up," says Rainer.

Farewell sweet ladies

Photo: Hugo Neves

EMBL Heidelberg said goodbye to some very familiar faces on 30 June when EMBL's obligation to tender for cleaning services meant that the Gegenbauer company's tenure at the lab ended.

No one was more sad to leave than supervisor Anni Stenzel, who for 13 years has led the team of ladies in their invaluable work keeping EMBL spick and span. Anni, who's 62, was referred to as the 'Mother of nations' by the predocs she rescued in the EMBL laundry room with vital decisions regarding temperatures and settings for their laundry. Even though she can't speak English, Anni says she never had any problems communicating with staff and it was this aspect of life that she found terrific at EMBL, as well as the approachability of the people. However, though she says she has 'left her heart at EMBL', she won't miss cleaning up after the predoc parties – that was always 'a killer'!

Cleaning services at the lab have now been taken over by Breer, based in Heidelberg.

Heidelberg-on-sea

Postdoc Elia Benito Gutierrez and Hermann Weber from Building Maintenance tell Lucy Patterson about why – and how – they've brought a little bit of the beach to Baden-Württemberg

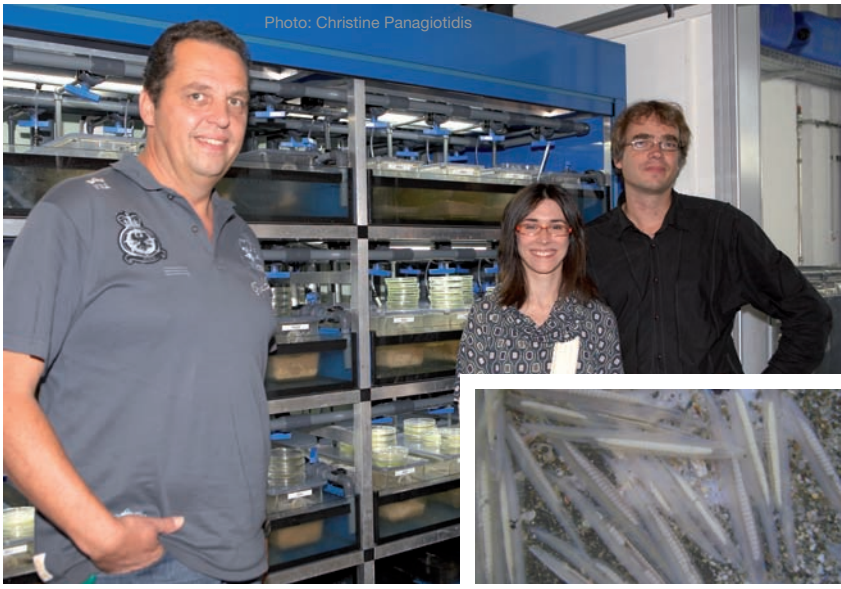


Photo: Christine Panagiotidis

Hermann Weber, Elia Benito Gutierrez and Detlev Arendt at the facility. Inset: amphioxus

When Elia Benito Gutierrez joined the Arendt group in February this year, she had quite a challenge on her hands. She and Detlev were embarking on a new project as a result of their shared interest in nervous system evolution which involved an unusual model animal, amphioxus. Though Elia had a long history with this worm-like cephalochordate as a student in Barcelona and during her postdoc at the NIMR in London, joining EMBL posed a new puzzle: no one had yet managed to keep a successful breeding colony in a lab.

All other attempts to raise amphioxus have been at facilities in coastal regions with good access to fresh seawater. Getting embryos has, until now, involved fishing daily during the 2-3 month breeding season in the hope of being there when the animals were ready to breed. "In the end you have just a couple of nights where you hope to get enough embryos for a whole year's research," explains Elia.

That's where Building Maintenance's Hermann Weber came in. "In Heidelberg we would have had big problems pumping the seawater in and out – we would need a very long pipe!" he says. Hermann, as Elia will tell you, has been crucial to the success of the introduction of amphioxus to EMBL – and it's thanks to the ongoing collaboration between Detlev's group and Hermann in developing and maintaining marine facilities that this important project was able to go ahead.

"A lot of my emails would start something like, 'Hermann, I know this might sound crazy, but…' and he just found solutions to everything," Elia remembers. Building Maintenance created a facility that runs on natural sea water which is filtered and

> "She dropped her things on the table and said 'I've got babies!' It was great!"

shipped in 2000 litre tanks all the way from Helgoland, just like the water for the Platynereis facility. It's then cooled to 8-13.5°C – which causes condensation problems – and has to be totally insulated from external light. As amphioxus only breed at sunset, it was necessary to shift the day/night cycle so that night falls in the afternoon. The facility simulates natural dawn and dusk with artificial lights, and a blue LED 'moon' provides moonlight for 6 days a month. The animals themselves were mostly brought by Elia herself in her hand luggage from a wild colony in the south of France, and despite the upheaval, they seem to be doing very well in Helgoland seawater.

For Hermann, such projects are quite a departure from the day-to-day business of building maintenance and he relishes the opportunity to put his technical expertise to a new use. It wasn't long before they had proof of their success. "I remember the day Elia came to find me in the canteen," he recalls. "She dropped her things down on the table and said 'I've got babies!' It was great!"

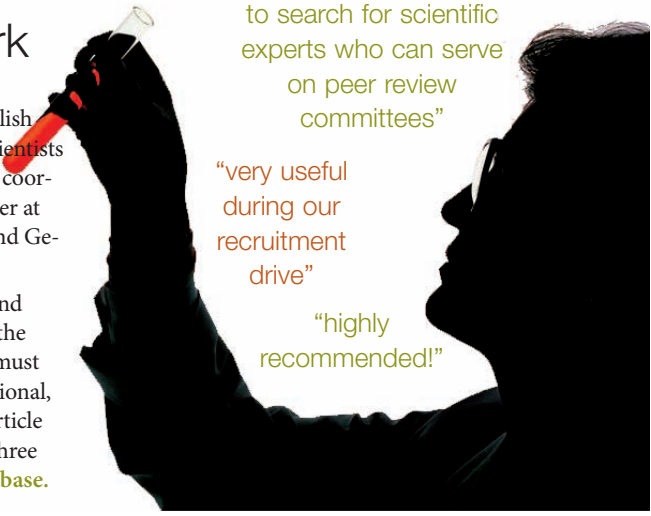
The amphioxus will help Elia and Detlev construct a detailed map of the brain as it develops, showing for the first time the positions of the different neurons and which mRNAs and proteins they express. As amphioxus is considered to be a 'living fossil' this will provide great insight into how brains in other species have evolved.

500 female biologists join expert network

Four years after its launch, the Women in Life Sciences (WiLS) database has grown to include 500 experts and is proving an invaluable networking tool, as the testimonials on the right demonstrate.

Initiated by the European Life Scientist Organization and supported by EMBO and the Federation of European Biochemical Societies (FEBS), the online public database promotes qualified women as candidates for professorships, advisory groups, as speakers at conferences and as manuscript reviewers, areas in which they are currently underrepresented. "The WiLS database helps all users – not just women – identify and establish contacts with accomplished female scientists belonging to their research area," says coordinator Karla Neugebauer, group leader at the MPI for Molecular Cell Biology and Genetics in Dresden.

Several of EMBL's senior scientists and many alumni are already included in the database. To be accepted, candidates must be based in Europe or a European national, and have published a basic research article as first or last author within the past three years. Check it out at **http://wils-database.embo.org/members_meet.php**.



In the mix

Photo: Christine Panagiotidis

EMBL DG Iain Mattaj addressing the audience at 26 June's official signing ceremony of the Unit for Virus and Host Cell Interactions Unité Mixte Internationale (UMI) between EMBL, CNRS and the Université Joseph Fourier in Grenoble. The international unit is a unique structure in France in the areas of biology and health, and will facilitate interdisciplinary research in structural and molecular biology. Head of EMBL Grenoble Stephen Cusack (seated, front right) will direct the unit for the first five years, and deputy head will be Rob Ruigrok, professor at the University Joseph Fourier.

Calling all chemists

On Lab Day this year group leaders Maja Köhn, Carsten Schultz and Edward Lemke asked 'what can chemistry do for biology?' during which they presented a new section of the EMBL website devoted to chemical biology (**www.embl.de/research/chemistry/index.html**).

The pages list the ten EMBL groups that incorporate different areas of chemistry into their research, such as chemical synthesis, spectroscopic and spectrometric methods, chemoinformatics, chemical docking and modelling, protein semisynthesis and engineering, and analytical and medicinal chemistry. There's also a area listing the related equipment that is available at all EMBL sites and one that lists upcoming events organised by the chemical biology community.

"One of the aims of the site is to raise awareness of how much chemistry is actually being done here, even though it's a molecular biology laboratory, and to encourage chemists at all career stages to apply," says Carsten.

ELLS' first visit to (not so sunny) Spain

When local education administrators in Castilla y Leon asked EMBL alumna Teresa Alonso to organise a course for biology teachers, she immediately came to EMBL's European Learning Laboratory for the Life Sciences (ELLS) for inspiration. Together with Rossana De Lorenzi, the ELLS officer based in Monterotondo, Teresa ran her course, 'New frontiers in research on genetic diseases: from the lab to the classroom', at the Instituto de Biología y Genética Molecular in Valladolid in April, with seminars in Spanish and practical activities in English.

The scientists and speakers who contributed to the course were Alfredo Moreno, Diego Sanchez, Ana Sanchez and Juan Jose Tellería from the host university, former EMBL postdoc Filip Lim, who now leads a group at the Autónoma University in Madrid, and former PhD student Felipe Mora, who's now at Dresden's Max Planck Institute of Molecular Cell Biology and Genetics.

"This first ELLS course in Spain was a big success, with a great atmosphere among the teachers and the scientists," says Teresa. "As a result, the teachers have set up a working network with a virtual platform to exchange useful ideas and teaching materials."

- Registration is now open for the following **EBI hands-on bioinformatics training course**: 'A dip into EBI resources: understanding your data' on 19-22 October (registration deadline 21 September). See **www.ebi.ac.uk/training/handson** to register and for programme details on courses to be held in 2010.
- Ramón Moreno, **Catalonia's General Director of the Research Centres Programme** (CERCA) Department of Innovation, Universities and Business, and Project Director Ramon Noguera visited EMBL Heidelberg on 10 July to discuss the ongoing collaborations between EMBL and the Catalan research organisations, including the CRG.
- In another visit from the Spanish peninula, representatives from the **International Iberian Nanotechnology Laboratory** came on 13 July to learn more about technology transfer, EMBLEM and EMBL.
- Maria Leptin will be the new **director of EMBO** from January next year. Maria, who works on cell shapes and immunity at the University of Cologne, will be the fifth director in the organisation's 45-year history.
- MMPU group leader and EMBL alumna **Martina Muckenthaler** has been been elected as Director of the International BioIron Society.
- EMBL again set up its stand to promote its activities and career opportunities at this year's **FEBS congress**, 'Life's Molecular Interactions', in Prague on 4-9 July (below). With more than 2,000 participants the FEBS congress is one of the largest in Europe. "We were excellently placed right next to the refreshment tables, so we had a constant stream of visitors," commented Head of Communications Lena Raditsch, who helped man the stand.

- EMBL researchers recently got together to organise a symposium spanning the entire gamut of structural and cell biology imaging and analysis techniques with the help of FP7's new Integrated Structural Biology Infrastructure (INSTRUCT) project. With funding from that and the Spine2-Complexes project, Edward Lemke, Christoph Müller and Rainer Pepperkok welcomed more than 130 participants to "**Light Microscopy meets Structural Biology**" at EMBL Heidelberg on 22-23 June, with 18 speakers covering topics such as imaging protein-protein interactions, correlative light-EM microscopy and super-resolution techniques. "The topics zoomed all the way in from imaging cell biology to atomic resolution techniques," says Edward. "This broad range meant that we got a lot of people together who wouldn't normally meet, which made the symposium particularly unique and interesting, and we received lots of positive feedback."
- EMBL's Non-scientific Training and Development is changing its name to the **General Training and Development Programme** in response to feedback. "We've gathered very positive input on the quality and range of the courses and see no need to alter the programme, just to improve on it," says Head of Personnel Ulla Böhme. "The name change aims to reflect the fact that the courses are useful for everyone at any level, and we'll aim to offer more advice about which training people should choose according to their career stage." Upcoming courses include:

Course	Date / site
Effective Writing 2	4 Sept (EBI)
Personal Effectiveness	16 Sept (HD)
Negotiating Skills	17 Sept (HD)
Conflict Management	18 Sept (HD)
Effective Team Leader 1	17-18 Sept (EBI)
Intro to Meetings, Events and Conferences	23 Sept (HD)

Please see **http://intranet.embl.de/personnel/training_development/index.html** for more information.

Alice in wonderland

From 21-23 July EMBL Heidelberg was host to the 23 participants of the 13th International Summer Science School Heidelberg (ISH), a chance for students to visit labs, take part in experiments and chat with scientists. The ISH runs for a month each summer and gives students, who come from Heidelberg's twin towns including Montpellier (France), Rehovot (Israel) and Simferopol (Ukraine) a real insight into how scientific research is conducted and a chance to see professional facilities close up.

ELLS officers Philipp Gebhardt and Julia Willingale-Theune organised the programme, which also involved two interns – of which I was one – and eight students from local schools. Activities involved seminars, practicals and a chance to interview a panel of EMBL scientists. Highlights were Francesco Pampaloni's 3D microscopy seminar and the visit to the *Xenopus* facility, both topics being something we hadn't necessarily associated with lab work (though you experts undoubtedly would!).

I wasn't sure what to expect from the ISH but was pleasantly surprised. The group was extremely friendly and together we learnt a lot (proving that practical work is always more fun than theory). The programme was quite tiring, especially for those without any experience of science taught in English, but overall the three days were fantastic.

– Alice Goldman, aged 17

Photo: Christine Panagiotidis

Students put their heads together to prepare samples for a PCR experiment

events@EMBL

4 September EMBL Monterotondo
EMBL Distinguished Visitor Lecture: Optogenetics: development and application. Karl Deisseroth, Stanford

8-9 September EMBL Heidelberg
Course: Joint EMBL/Genomatix Workshop on mRNA-Seq and ChIP-Seq: Comprehensive Methods for Next Generation Sequencing Data Analysis

9-13 September EMBL Heidelberg
Conference: EMBO Conference Series on Protein Synthesis and Translational Control

16 September Golf Hotel Stromberg
Faculty Retreat 2009

2-6 October EMBL Heidelberg
Conference: EMBO Conference Series on Morphogenesis and Dynamics of Multicellular Systems

8-16 October EMBL Heidelberg
Course: EMBO Practical Course on Current Methods in Cell Biology

15 October EMBL Grenoble
Heads of Units/Senior Scientists Meetings

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

Well done, athletes!

Several EMBL individuals and teams took part in 2 August's grueling HeidelbergMan triathlon, with some outstanding results. EMBL's star in the solo women's section was research technician Victoria McParland, who came 6th with a time of 2:37:00. Top EMBL participant of the men's solo race was predoc Tobias Stuwe, with a time of 2:36:50. Of the EMBL teams, postdoc Nadia Dubé's 'Zeroes' came in 39th with 2:35:34, closely followed by 'Cellzome 1', which comprised Bork group analyst Damian Devos and Cellzomers Mikhail Savistski and Toby Mathieson, who came in at 41st with 2:36:32. For the rest of the EMBL participants and the entire results tables, see www.heidelbergman.de/2009/main2009.html.

people@EMBL

Alexander Aulehla has joined EMBL Heidelberg's Developmental Biology Unit as a group leader. He qualified as a medical doctor from the Albert Ludwigs University in Freiburg in 2002 and performed research in Houston, USA and Freiburg, before holding a position as physician in Basel and then completing his PhD in Paris. He returned to the USA as a postdoc, and now his group at EMBL will study the timing of mammalian embryogenesis using mouse genetics, ES-cell technology and real-time imaging of mouse embryos.

Gwen Sanderson is the new face in EMBL's Courses and Conferences Office. Born in Venezuela, Gwen was educated in Wales and went to university in London, where she read Modern Languages and International Studies. She's been in Germany for 20 years and has worked in advertising and event management for SAS EMEA in Heidelberg and IDC in Frankfurt. In EMBL's international environment Gwen is looking forward to the chance to speak Spanish again – and she also hopes to find someone to help her with some DIY at home.

Happy birthday, Monterotondo

Photos: Doros Panayi

On 22 June EMBL Monterotondo celebrated its 10th anniversary with a scientific meeting featuring talks from various speakers including internationally renowned immunologist Klaus Rajewsky (right), who led the unit before current head Nadia Rosenthal (left, with (l-r) Liliana Minichiello, Pascale Beudin and Rossana De Lorenzi) took over in 2001. "EMBL has been an important addition to the Monterotondo campus and has contributed to developing and internationalising Italian biological and biomedical research," said Glauco Tocchini-Valentini, head of CNR-EMMA international activities on the Adriano Buzzati-Traverso campus. At 30 June's Council meeting, Iain Mattaj praised Nadia's leadership and said that she has ensured the mouse biology unit's successful integration into the EMBL community, with several students pursuing joint projects with EMBL-EBI.

awards&honours

Janet Thornton, Director of EMBL-EBI, has been awarded a Senior Scientist Award by the Fellows Programme of the International Society for Computational Biology. Janet was selected in recognition of her outstanding contribution to the fields of computational biology and bioinformatics. The award was presented at the combined 17th Annual International Conference on Intelligent Systems for Molecular Biology (ISMB) and 8th European Conference on Computational Biology (ECCB) 2009 held in June in Stockholm.

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