

A top ceremony for the Advanced Training Centre

25 September saw the latest milestone in the construction of the Advanced Training Centre: a traditional German 'Richtfest', or topping out ceremony, which usually celebrates the last beam being placed at the top of a building, was held for the builders, engineers, architects and VIPs. Earlier in the day, EMBL staff were invited to a presentation by the chief architect, Manfred Bernhardt of Bernhardt + Partner, Darmstadt. With the basic structure now finished, the next development will be the delivery of the 62 metal parts of the inner helical ramps on 31 lorries.

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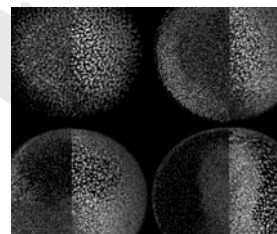
An EMBL reunion – in Japan!

EMBL scientists from Hamburg, Grenoble, Heidelberg and the EBI came together in Osaka, Japan in August for the 21st International Union of Crystallography Congress. The seven-day scientific programme included talks by many of them, and several PhD students and postdocs presented posters. The EMBL stand was in attendance in the exhibition area and attracted interest from many passing participants, ranging from Japanese students who'd never heard of EMBL to old friends of the Hamburg beamlines, and the scientists on the trip took turns to man the booth and answer questions.

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A picture's worth a thousand words

EMBL scientists have produced a complete developmental blueprint of a developing zebrafish embryo for the first time, with their results appearing in the 9 October issue of *Science*. Philipp Keller and Annette Schmidt used novel approaches to light microscopy and large-scale computing to reconstruct vertebrate embryogenesis at subcellular resolution. Because of the huge number of dynamic processes undergone by an ever-increasing number of densely packed cells during embryogenesis, reconstructions have only ever been achieved in simple organisms such as worms – until now.

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Adéquation seeks new leader

With the upcoming departure of Emmanuel Reynaud, Adéquation Germany is looking for a new president. Many scientists and staff have got involved with the EMBL-based charity, which collects equipment and scientific books for struggling labs in Eastern Europe and Africa and raises money by taking part in such events as the annual Heidelbergman Triathlon. Outgoing president Emmanuel, a project leader in the Stelzer group, is keen that Adéquation Germany's good work continues. "Formalising our efforts as a charity has helped us to have a much bigger impact," he says.

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Musical youth



EMBL-EBI PhD Student Diva Tommei was nominated by EBI Director Janet Thornton and selected from more than 200 outstanding students from all over Europe to take part in this year's Roche Continents programme, which brings together young academics from science and the arts.

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A top ceremony for the Advanced Training Centre

Thursday 25 September heralded the latest milestone in the construction of the new Advanced Training Centre (ATC) on the EMBL Heidelberg campus.

A traditional German 'Richtfest', or topping out ceremony, was held for the builders, engineers, architects and invited VIPs, including Bernd Stadel, First Mayor of Heidelberg, EMBL council delegate Paula Heppner and members of the local press.

EMBL Administrative Director Bernd-Uwe Jahn addressed the audience in the new canteen building with some history and facts and figures, and then the guests walked across to enter the main helix-shaped building to watch the ceremony, which usually celebrates the last beam being placed at the top of a building. As tradition dictates, a crown made of fir branches trimmed with ribbons was lowered into the building by a crane, while Dieter Weick from Leonhard Weiss, the construction

company, read the traditional 'Richtspruch' and held several toasts. Then it was back to the new canteen for food and several crates of beer.

Earlier in the day, EMBL staff were invited to a presentation by the chief architect, Manfred Bernhardt of Bernhardt + Partner, Darmstadt. He explained that the 79,229m³ building was originally the concept of local physicist and philanthropist Klaus Tschira, whose foundation has also donated funds for the construction. The work, which began in October 2006, involved the excavation of 50,000m³ of earth and the laying of 10km of cooling pipes and 20km of electricity cables, with up to 120 men working on the site at any one time.

When the roof is completed, and with the basic structure now finished, the next major development will be the delivery of the 62 metal parts of the inner helical ramps on 31 lorries later this month. The presentation

ended with a fascinating time-lapse video showing the construction of the ATC over the last two years. By November, all the windows will have been installed, after which most of the work will be focussed on the interior.

The EMBL people who will move into the ATC in late 2009 will be the EICAT groups and management, administration, and the Office of Information and Public Affairs (OIPA).

- **The Courses and Conferences Office is taking bookings for the Advanced Training Centre for 2009 and 2010.** If you'd like to book the auditorium for a conference or workshop, the computer, wet- or multi-purpose lab for a course or the roof terrace lounge for a corporate or private event, please contact Sally Davison at davison@embl.de.



Photos: Christine Panagiotidis



Illustration: Bernhardt + Partner



Main picture: Dieter Weick reads the 'Richtspruch' as the fir wreath descends; left, architect Manfred Bernhardt; above, how the building will look from inside

Legging it to Lisbon

This year's predoc retreat on 5-7 September in the Portuguese capital gave PhD students from all EMBL sites a chance to get together and talk science from their own perspective.

It also proved a good opportunity to discuss other issues of interest to EMBL's students. The overwhelming consensus was that the introduction of Helke Hillebrand as full-time Dean of Graduate Studies has been hugely beneficial, and that those who've had contact with her found her helpful and approachable.

It was also agreed that, to improve communication between EMBL management and the PhD community, predoc reps will have a regu-



Rozina Kardakar and Stella Lamprinaki take time out for some sightseeing

Photo: Evangelia Petsalaki

lar meeting with DG Iain Mattaj to keep him informed of important issues.

Other items on the agenda included the possibility of setting up a pension plan for PhD

students. Additionally, the organisers of the new web-based Predoc Forum, predocs.embl.org, encouraged everyone to make use of it to share ideas and information.

"This year's retreat was really well attended, with about half of EMBL's total predocs participating," says Xavier Heiligenstein, who oversaw the organisation of the event. "There was a great atmosphere all weekend – we were lucky with the weather, too – and the scientific talks were of a very high standard. I'd like to thank Martina Trokter, France Audrey Peltier, Kasper Dindler Rasmussen, Hubert Mayerhofer and Aliaksandr Shkumatau for all their help with the organisation, and also Alvaro Tavares and Silvia Portugal, the PI and PhD student from IMM Lisbon who gave talks."

No more cards! The library goes newfangled

EMBL Heidelberg's Szilárd Library is continuing its leaps and bounds into the 21st century with a brand new sign-out system and an easy-to-use catalogue search.

The sign-out system (pictured) lets you check out books without filling in those fiddly little cards. All you need is your name (or borrower number, if you can't remember your name) and an armful of lovely books and DVDs that you want to take home.

Use the Mac by the library entrance to enter your ID and your chosen items' access numbers (easily found on the Dolphin sticker inside the cover, or on the spine), select the loan term (four weeks for books, one day for DVDs), click 'Check Out' and you'll see exactly when you need to bring them back.

It's as simple as that! And it's going to get even simpler in the future, when a scanner will be installed, so there'll be no danger of signing the wrong book out by mistake.

Secondly, the new catalogue search (OPAC) at <http://library01/InmagicGenie/opac.aspx> makes searching the extensive selection even

quicker and easier. This you can do from the comfort of your own desk, too, without having to sign in. Simply enter words into the search fields (make sure you have a look at the 'Search tips' box to the right of the form – this explains the wild cards and symbols that you can use to narrow your search) and a list of items pertaining to your term will appear.

For much of the book collection, the table of contents is now searchable via the database. When you've found your record, clicking on 'Full Display' will show you where it's located, whether it's out already, and when it's due back.

You can enter titles into your 'cart' to either reserve them if they're not available, make a wish list for future reference or even to compile a list of titles to send to someone else using the e-mail function.

OPAC will be available to everyone, including the outstations. In November, Grenoble will be converted so that they can use the same automated checkout and renewal system, and their collection will be added to the database, so we'll see a bigger picture of library holdings throughout EMBL.

"The behind the scenes administrative work is much quicker and easier for us, and we can pass some of that on to you," says librarian Anne Barkworth. "For example, if you use OPAC to search for *Nature*, you'll find the last five issues received and a list of any missing ones. So if you're waiting for the latest issue, you can see at a glance if it's here yet. As soon as we receive it, we register it in the database.

"By the way, there are 264 items overdue at the moment. Can we have them back, please?"

Keep up the good work: Adéquation seeks new leader

With the upcoming departure of Emmanuel Reynaud, EMBL-based charity Adéquation Germany is looking for a new president.

Founded by Emmanuel along with Alessandra Bendiscioli, Richard Carmouche and David Ibberson in 2005, Adéquation Germany – which is part of a larger, France-based Non-Governmental Organisation, Adéquation et Développement – provides scientific equipment and training to scientists in need across the world by working in partnerships with local associations in developing countries.

Many EMBL scientists and staff have got involved with Adéquation Germany, whose

activities include collecting unused lab equipment and scientific books and journals for struggling labs in Eastern Europe and Africa, and raising money by taking part in such events as the annual Heidelbergman Triathlon.

The charity also helps laboratories in developing countries to pursue research projects by providing training and support, and works in association with local programmes including a health campaign in Mauritania aimed to prevent malaria, AIDS and infectious diseases and a school for women in Mali.

In addition, many universities and research

institutes in countries such as Albania, Ukraine, Brazil, Kenya, India, Cuba, Cameroon and Colombia have received unused scientific equipment collected and shipped by Adéquation Germany.

Outgoing president Emmanuel, a project leader in the Stelzer Group, has long been involved in humanitarian projects in Africa. As a PhD student he befriended a Mauritanian and helped prepare a report for a meeting of the village association in his home town, Khabou. In 2003 Emmanuel traveled to Mauritania with fellow postdoc Jez Simpson, where they helped build a health centre for the local community (see EMBL *cetera* issue 14), and he also started working with people in neighbouring Mali to raise awareness about healthcare.

From this, the idea for the initiative grew. "Formalising such efforts as a charity has helped us to make a much bigger impact," says Emmanuel. "For example, as Adéquation Germany we were officially able to raise funds to help us achieve our goals."

Though Emmanuel will continue to be involved in humanitarian projects from his new base of Dublin, he's keen that Adéquation Germany's good work at EMBL continues. If you're interested in getting involved at any level, please contact Emmanuel at reynaud@embl.de, or visit the website at <http://adequationgermany.embl.de> for more details.



Main picture: Adequation members Vibor Laketa, Stella Lamprinaki, David Ibberson, Emmanuel Reynaud, Gregor Reither, Guillem Casanovas and Claudia Chica; above, the situation in a typical Ivory Coast teaching lab, with dozens of students and only enough resources to do an experiment once

The hills are alive with the sound of music (and science)

EMBL-EBI's Diva Tommei was one of 100 lucky students chosen to spend a week in Salzburg at this year's Roche Continents youth arts and science programme, a one-week conference which brings together young academics from science and the arts.

Diva, a musician as well as a PhD student, was nominated by EBI Director Janet Thornton and selected from more than 200 outstanding students from 70 universities and research institutes all over Europe.

The meeting took place in Salzburg from 7-13 August to coincide with the annual summer music festival, and comprised an active schedule of scientific lectures and workshops aiming to uncover a common ground of creativity between the arts and science. Every night the participants also attended various festival concert performances throughout the city.

"I was thrilled to be selected for the programme, and the trip was amazing," says Diva. "It was so great to be around scientists with a strong background and interest in the arts, and vice versa.

"I've always felt that the arts and sciences share a lot in the ways they can be approached. As a musician and artist I'm drawn to patterns that I find aesthetically pleasing, and in my scientific career I draw on that exact same inspiration: interpreting seemingly chaotic processes to see patterns in their underlying organisation and behaviour.

"The morning workshops, which looked at the links between creativity in the arts and in



Diva enjoys one of the interactive workshops. Photo © F. Hoffmann-La Roche Ltd.

science, were very interactive. We composed music using drums and presented a 'molecular opera'. One of the highlights of the week was a talk by Gianni Gromo from Roche, 'How to stay curious, hungry and foolish', which was about what you actually need to be creative within science.

"The evening concerts were wonderful, too. The focus was on contemporary music, and each piece was introduced by its composer. One session was devoted to the work of the late Luigi Nono, who I wasn't familiar with, and to me his works sounded exactly like an orchestra tuning up! We also saw a puppet show by the Sicilian Marionette Theatre.

"In addition, I now have many more friends

from all over the world. It was such a fantastic experience."

At EMBL-EBI Diva is working on the large-scale analysis of massively parallel sequencing data, focusing on the discovery of novel small non-coding RNAs and their functional roles in the processes of cell differentiation and nuclear reprogramming. Her microRNA target prediction software for Windows has been adopted by the Genomics Core Facility at EMBL Heidelberg, and is used to support the analysis of the human datasets generated there.

"Diva really is a remarkable person. She plays two instruments, studied formal ballet until the age of 22 and paints – all while she was scoring top marks in her biotechnology studies and, now, doing excellent work in bioinformatics at the EBI," says Paul Bertone, her group leader.

Roche Continents, created for students and postdocs aged 20 to 29 from across Europe, is a project that has grown from the partnership between Roche, a leading research-focused pharmaceuticals and diagnostics group, and the Salzburg Festival. Former EMBL Heidelberg PhD student Jean-Baptiste Coutelis, now at the University of Nice, was picked to take part in their first joint programme last year, which, as Salzburg Festival President Helga Rabl-Stalder says, "brings together the future elite of life sciences and the arts".

For more information about Roche Continents, visit www.roche-continents.net.

Last ELSO meeting says goodbye to an era

After eight successful years of presenting cutting-edge molecular life science research with its annual meetings, the European Life Sciences Organisation (ELSO) held its final congress on 30 August to 2 September in Nice.

'Frontiers of cellular, developmental and molecular biology', which was organised for the first time in collaboration with EMBO, invited more than 150 speakers and attracted 600 attendees from all over Europe.

EMBL scientists involved in the programme of talks, minisymposia and subgroup meetings included Damian Brunner, Melina Schuh and Carolina Tängemo from EMBL Heidelberg, Daniel Panne from EMBL Grenoble and EMBLEM's Birgit Kerber. Gene Expression Unit group leader Asifa Akhtar was also there to receive her ELSO Early Career Award.

In the poster session, one particular entry that drew the crowds was Emmanuel Reynaud's hand-written one, done on the spot in just under 45 minutes with three different

coloured pens, about the positions of Golgi apparatus during cell migration. "I did it that way because we won last year and we couldn't top that, and I wanted to show that it wasn't necessary to spend weeks on a poster and have it expensively reproduced," says Emmanuel, a project leader in the Stelzer group. "It actually got the message across in a very precise and effective way, and was more interactive. People were taking pictures as I was doing it."

ELSO has been successful in its mission to establish an annual congress within Europe that provides a high-profile international forum for the field. However, operating on a shoestring with no permanent staff has made it difficult to expand further. "We need a structure that is more sustainable to carry the meeting forward into a new era," says ELSO Founding President and EMBL alumnus Kai Simons.

As a result, ELSO fuses at the end of 2008 with EMBO, which will launch a new series of meetings to build on and improve this valuable platform for life scientists (see box, right).



2009 will see the launch of The EMBO Meeting, a new platform for life scientists to meet and enjoy outstanding lectures, discussions, workshops and networking opportunities. EMBO aims to establish the meeting as *the* European life sciences conference, attracting around 2,000 scientists with an annual scientific programme of the latest research spanning a number of fields.

At the first meeting in Amsterdam on 29 August to 1 September, the focus will be on three major topics: the dynamics, maintenance and evolution of chromosomes, signalling pathways in development and cancer, and stem cells.

Visit www.the-embo-meeting.org for more details or to register.

Second round of Insight Lectures tackles genetics

Two top women scientists with links to EMBL were the invited speakers at the second round of the SET-Routes Insight Lectures, held at EMBL Heidelberg on 23 September.

SET-Routes, the FP6-funded collaboration between EMBL, CERN and EMBO that encourages young women to pursue scientific careers, invited Sabine Hentze, a genetics counsellor based in Heidelberg and

Mannheim, and Martina Muckenthaler, professor at the Zentrum für Kinder- und Jugendmedizin at Heidelberg University, to talk to the audience of 130 17-year-olds from two local schools.

Sabine, who was a visiting scientist at EMBL Heidelberg, now runs a lab for routine chromosome analysis (cytogenetics) and molecular diagnostics for heritable disease. She talked about the technologies behind genetic testing and the ethical implications of offering such services to her patients.

Martina, who did her postdoctoral research at EMBL and still has links to it as part of the Molecular Medicine Partnership Unit, talked about her group's research into one of the most

common hereditary diseases in northern Europe, haemochromatosis. She also explained how she developed the Iron-Chip, a microarray which helps scientists pinpoint the genetic defects responsible for the disease.

The Insight Lectures form part of SET-Routes' aim to present women scientists to young people, encourage more girls to take up science and dispel the myth that it is 'just for the boys'. SET-Routes will run six more such events split between EMBL Heidelberg and CERN, each based on a broad theme in science with top-class female speakers.

All the Insight Lectures will eventually be made available to watch on the website, www.set-routes.org.



Martina enlisted the help of a friend to explain haemochromatosis

Photo: Christine Panagiotidis

Dealings downtown

EMBL Heidelberg group leaders Rob Russell and Anne-Claude Gavin have started a collaborative project with local biotech company Graffinity, thanks to a substantial BioChance Plus grant.

The project's goal is to develop a fragment-based drug discovery process for the identification of small molecules by screening fragment libraries for protein-protein interaction targets.

Information about protein-protein interactions improves understanding of diseases and can provide the basis for new therapeutic approaches. The ability to target these interactions with small molecules represents a holy grail for chemical biology and offers the means to make much more subtle modifications of cellular processes.

While Graffinity, located at the university campus in Heidelberg, has developed a chemical array technology that allows binding of chemical fragments to be detected very rapidly, EMBL can offer its expertise to apply this technology to the specific problem of targeting protein-protein interactions.

The BioChance Plus Initiative of the German Federal Ministry of Education and Research (BMBF) supports research in biotechnology companies and enables collaborations with scientists in academia.

Meet and greet at the faculty retreat

It was the first faculty retreat for many new faces at the Golfhotel Stromberg near Frankfurt on 17-18 September.

With twelve group and team leaders having left EMBL during 2007-2008 – that's 14% of faculty – and 20 new ones hired, there were plenty of first-time meetings for everyone.

The two days of talks and networking were divided into four sessions, and new to this year's faculty retreat were extra breaks and an hour-long open discussion session before dinner on the first day. Many group and team leaders had requested this, because often the networking opportunities between scientific sessions are the most fruitful part, especially for newcomers.

"It was a great chance to meet everyone, especially those from the outstations," said Francesca Peri, who started as group leader in the Developmental Biology unit at EMBL Heidelberg in April. She gave a talk, 'Microglia: the guardians of the brain', in the Complex Systems session on day two. "It was clear that much of the great science at EMBL

emerges through collaborations, and the retreat offers a brilliant platform for keeping your eyes and ears open for potential new ones."

New Gene Expression team leader Jeroen Krijgsveld, who also presented his work, added: "Although at the time of the retreat I hadn't formally started at EMBL, it was a nice opportunity to introduce myself to the faculty and to get a glimpse of the work they're doing."

Francesca Peri, Darren Gilmour, Stefano de Renzis and François Spitz talk science in one of the new improved coffee breaks



Photo: Ernst Steitzer

Sign up for the first chemical biology retreat

Group and team leaders interested in the development and integration of chemical biology at EMBL are invited to sign up for the first ever Chemical Biology retreat in Heidelberg on 15-16 January 2009.

Organised by Carsten Schultz, the retreat will take place in the Atlantic Hotel, where outstation visitors will have the opportunity to stay. All participants will be invited to contribute short presentations, and the retreat will also allow time to discuss the opportunities chemistry offers to EMBL and to identify the future needs of the community.

It's a timely initiative, given the recent upsurge in chemistry-related activity across the EMBL sites. Gene Expression group leader Maja Köhn joined Carsten with EMBL Heidelberg's second chemistry-based research lab this year, and the EBI has expanded its activities with the new arrival of cheminformatics expert Christoph Steinbeck, with another due to start later in 2008.

If you'd like to attend the retreat, please contact Carsten (schultz@embl.de) or Sylvia Schattschneider (schattsc@embl.de).

Happy anniversary!

EMBL Heidelberg's Kinderhaus celebrated its 20th anniversary with a special summer party on 26 September.

The day involved activities for the children based around their newly named groups – bees, ladybirds, mice, rabbits, hedgehogs, butterflies, dragons and 'tiger-ducks' (Tigerenten) – and lots to eat and drink, some provided by the EMBL catering staff and the rest made up of national specialities brought along by the parents.

The sunny afternoon ended with a sing-song, including a ditty about EMBL sung to the tune of 'YMCA' with words by Kindergarten Assistants Janin Topaloglu, Diana Zach and Helene Schultz, and a trip to the top of the car park to release 100 colourful balloons into the sky.

"The Kinderhaus would never have been so successful over the past 20 years without the hugely motivated staff," said Kinderhaus Head Florence Beye. "There are also many other people to thank for their help and support, including Building Maintenance, Social and General Services, the Staff Association and the Parents' Panel, as well as many more."

• **Did you miss it?** A pictorial history is still on display in the Kinderhaus, and anyone is welcome to go and have a look.



Photos: Christina Panagiotidis

A EMBL-wide reunion – in Japan!

EMBL scientists from Hamburg, Grenoble, Heidelberg and the EBI got together on the other side of the world for a week in August for the 21st International Union of Crystallography Congress in Osaka, Japan.

With more than 2,600 participants representing 66 countries, the congress, which takes place every three years, is the biggest of its kind in the world. This year was particularly special, as the IUCr was celebrating its 60th anniversary, and as well as holding an Anniversary Ceremony, the congress included a display of photographs from previous meetings all over the world.

The congress opened with the presentation of the IUCr's Ewald Prize for outstanding contributions to crystallography, which went to veteran of the field David Sayre. The seven-day scientific programme included talks by EMBL faces including Michele Cianci, Inaki De Diego, Krisztian Fodor, Dmitri Svergun, Annette Faust, Manfred Weiss and Hamburg head Matthias Wilmanns, and several more of EMBL Hamburg's PhD students and postdocs presented posters. Santosh Panjikar gave a software demonstration on Auto-Rickshaw, and on

the EMBL Grenoble side, David Flot, staff scientist in the McCarthy Team, gave a lecture and a demonstration of his microfocus beamline ID23-2. EMBL Hamburg's Manfred Weiss, as new editor of *Acta Cryst F* and one of the national delegates of the German Society of Crystallography, was there to attend the IUCr General Assembly and Journal Commission Meetings; and Victor Lamzin, deputy head of the outstation and a member of the European Crystallographic Association, attended the



"Oh no – it looks like octopus again." Thomas Schneider and Jochen Müller-Dieckmann (HH), James Watson (EBI), Gleb Bourenkov (HH) and David Flot (GR) nervously await the next course

preparation meeting for next year's European Crystallographic Meeting (ECM-2009).

The EMBL stand was in attendance in the exhibition area and attracted questions from many passing participants, ranging from Japanese students who'd never heard of EMBL to old friends of the Hamburg beamlines. Many of the scientists on the trip generously gave some of their time to man the booth and answer some of the more challenging scientific questions.

All the European visitors took time to experience the sights and sounds of Osaka after the days of science. For some, the unofficial social programme even included a noisy visit to a typical karaoke bar.

"The congress was very stimulating and inspiring scientifically," commented ESRF director of research Sine Larsen, who is also the incoming president of the IUCr. "We are experiencing the growth of crystallography both scientifically and socially without loss of community feeling."

The next IUCr Congress will be held in Madrid, Spain, on 22–29 August 2011.

Speaking the same language

Biological relationships have long been depicted in a rather haphazard fashion. Interactions between genes and molecules, for example, are often presented according to the author's preferences, with different people using different notations for the same things. A plain arrow, for example, could mean 'stimulates', 'associates into' or 'translocates,' among other things.

Other scientific fields, such as engineering and physics, have long since developed accepted styles and nomenclature for depiction; elec-

trical circuits are a prime example of graphical standardisation.

Now, this is set to be the case in biology, too, due to the efforts of a community of scientists from around the world, coordinated by the EBI's Nicolas Le Novère, to develop Systems Biology Graphical Notation (SBGN). SBGN aims to standardise the graphical representation of essential biochemical and cellular processes, meaning that any process can be represented in a way that everyone – in particular, non-specialists – can understand.

Its development began three years ago and was initiated by Hiroaki Kitano at the Systems Biology Institute (SBI) in Tokyo, a Director of Sony CSL. Since then biochemists, geneticists, modellers, bioinformaticians and software developers have contributed to defining an accepted format. "SBGN really demonstrates what can be achieved when scientists come together," says Nicolas. "Without the input from a range of fields, it would have been impossible to define exactly what particular notations needed to do, and how to portray them in a way that is understandable to all."

SBGN is formed from three distinct but complementary languages; Process Diagrams, Entity Relationship Diagrams and Activity Flow Diagrams. Using these, a scientist can represent any network of biochemical interactions. "With a limited number of basic 'nodes' and connecting arcs, all of which mean something by their shape or other distinctive feature, it's easy to learn and unambiguous," says Nicolas. "It's an essential step towards the efficient communication of biological knowledge between different communities, something that's never been as important as with the current rise of systems and synthetic biology."

He and the team hope to promote SBGN with talks, papers and, primarily, getting publishers and tool developers on board to endorse its use.

You can find more information about SBGN, including example diagrams, at www.sbgng.org.



The public release on 23 August of the first level of SBGN at the International Conference on Systems Biology 2008 in Gothenburg. L-r: Michael Hucka (Caltech), Hiroaki Kitano (SBI, Tokyo and Sony), Katja Wegner (University of Hatfield), Nicolas Le Novère, Meran Owen (Springer), Falk Shreiber (IPK Gatersleben & MLU Halle), Stuart Moodie (Center of Integrative Systems Biology, Edinburgh) Anatoly Sorokin (University of Edinburgh), Huaiyu Mi (SRI international) and Yukiko Matsuoka (SBI, Tokyo). The graphic in the background shows SBGN in action, showing the catalysis of ERK phosphorylation by MEK in the growth factors signalling pathway.

First 'neuroschool' a success at Monterotondo

EMBL Monterotondo played host to social and neuroscientists from all over the world at an interdisciplinary 'neuroschool' focussing on

behavioural genetics from 29 September to 4 October.

It was the first such event of the European Neuroscience and Society Network (ENSN), a multidisciplinary forum about social issues surrounding the neurosciences, which was launched in London at the end of 2007.

The invited speakers and 15 attendees, who were mostly pre- and postdocs from several European countries and the US, took part in lectures and discussions examining current methodologies of experimentation in neuroscience and their implications in contemporary society.

EMBL Monterotondo's Cornelius Gross and Mumna Al Banchaabouchi and colleagues contributed to the event with talks and mouse behaviour practicals. External tutors were Silvia Mandillo from campus partner the Italian National Research Council (CNR), Klaus-Peter Lesch (University of Würzburg) and Nikolas Rose and Iliana Singh (both BIOS, London School of Economics). Their lectures

covered such diverse areas as the history of behavioural genetics, the latest scientific evidence in the field, and the history and sociology of psychotropic drugs.

The event was organised and run by Giovanni Frazzetto, an EMBL alumnus and visiting scientist to the Gross group, who with his double affiliations at EMBL and the BIOS Centre of the London School of Economics, was instrumental in setting up and seeking support for the ENSN.

"The students and postdocs were incredibly bright and engaged, and initiated some brilliant discussions," says Giovanni. "We got over 60 applications, which was a really good result for the first time."

The next neuroschool will take place in Würzburg in 2010, and the next event for the ENSN will be a workshop in Aarhus, Denmark, at the end of November, entitled 'Our Brains Our Selves'.

For more information, visit the website at www.neurosocieties.eu.



L-r: Cornelius Gross, ENSN Programme Coordinator Caitlin Connors and Giovanni Frazzetto (standing on chair) welcome the participants

All the tools you need and more on EMBL Hamburg's new goodies page

Structural biologists can now check out EMBL Hamburg's new Computational Facilities and Software webpage, www.embl-hamburg.de/services/comp, and access all the outstation's essential platforms and software packages with a few clicks of the mouse.

Here you'll find EMBL Hamburg's major success stories such as Auto-Rickshaw and ARP/wARP, as well as more recent developments that are also expected to play a key role in structural biology research in the future – and they're all free for academic users.

It also includes facilities for remote computing on the EMBL Hamburg computer cluster, which means that the user can access the programs – in their most up-to-date versions – without having to download software onto a local PC.

The downloads and facilities available are:

- **Auto-Rickshaw**, a platform for automated crystal structure determination. Since April this year, when this service was first made accessible to academic users on the web, usage has risen to 310 users from 150 labs.
- **ARP/wARP**, a software suite for the improvement and objective interpretation of crystallographic electron density maps and automatic construction, as well as the refinement of macromolecular models. It now has 690 users from 340 labs.
- **ATSAS**, a program suite for small angle scattering data analysis of biological macromolecules.
- **ABRA**, which enables automated analysis of EXAFS data.

- **Rapido**, which allows the 3D alignment and superposition of protein structures and identification of rigid domains.
- **BEST**, which aims to optimise X-ray data collection from protein crystals.
- **XREC**, designed for automated crystal recognition.

This web service represents one of the first of its kind in the field of macromolecular crystallography, with users situated around the world. "Clearly, free remote access to these programs offers the user community many possibilities and can only serve to promote and support structural biology research," says EMBL Hamburg team leader Manfred Weiss.

"It is safe to say," Victor Lamzin, developer of ARP/wARP, adds, "that this is a major step towards large shared computer infrastructure."

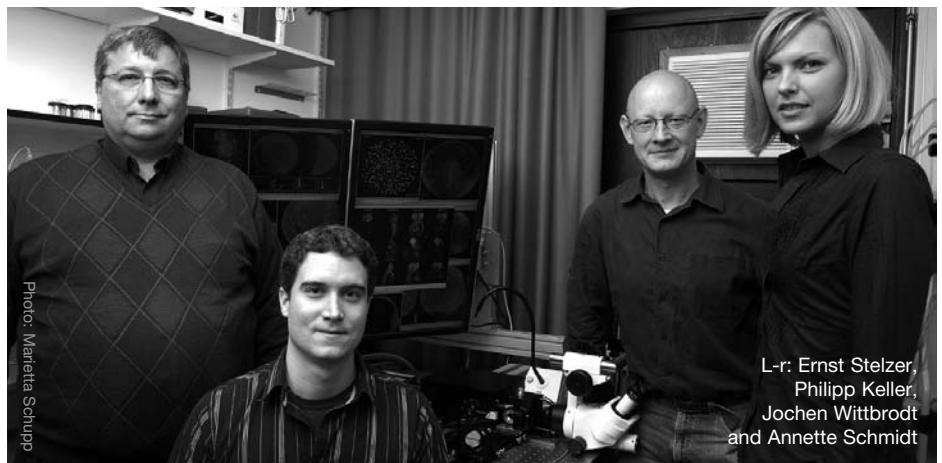
A picture's worth a thousand words

With a story that has made headline news across the world – with its accompanying video getting a five-star rating and endless hits on YouTube – EMBL scientists have reconstructed vertebrate embryogenesis at subcellular resolution for the first time.

Philipp Keller (Stelzer group, EMBL) and Annette Schmidt (Wittbrodt group, EMBL/University of Heidelberg/Karlsruhe Institute of Technology (KIT)) produced a complete blueprint of a developing zebrafish embryo using novel approaches to light microscopy and large-scale computing, and their results appear in the 9 October issue of *Science*.

Because of the huge number of dynamic processes undergone by an ever-increasing number of densely packed cells during embryogenesis, reconstructions have only ever been achieved in simple organisms such as worms. But with a newly developed microscope, the researchers could track the positions, movements and divisions of all cells for the first 24 hours of life. The data was then reconstructed into a 3D digital representation of the embryo up to the stage at which it contains 20,000 cells.

The study provides countless new insights into embryonic development. The underlying database of millions of cell tracks, positions and divisions are publicly available at www.digital-embryo.org and provide a novel resource for research and teaching. "These movies allow anyone a direct and intuitive access to developmental biology; a non-text-book way to understand how an animal takes



L-r: Ernst Stelzer, Philipp Keller, Jochen Wittbrodt and Annette Schmidt

shape," says Annette Schmidt.

One key to the breakthrough was the development of the new Digital Scanned Laser Light Sheet Microscope (DSLM). "With this, we obtain high-resolution 3D data without harming the embryo, by using an extremely low level of laser light. The microscope rapidly scans a living organism along different directions so that a computer can assemble a complete 3D image," explains Ernst Stelzer.

The DSLM simultaneously followed all cells in a living zebrafish embryo from the single cell stage up until its heart started beating. With more than 400,000 images per embryo, terabytes of data arose from each DSLM recording and were reassembled into a digital 3D representation of the complete developing embryo on the computers at EMBL and KIT.

"The digital embryo gives an overview of everything that happens in the first 24 hours, incorporating and representing the dynamics of development, and allows you to zoom in on

all of the fascinating cellular and subcellular details," says Jochen Wittbrodt.

With the help of the digital embryo the scientists found that the fundamental cell movements that go on to shape the organs are quite different than previously thought. They also discovered that the position of the head-tail body axis is not induced by the embryo itself but by signals to the egg by the mother.

The new microscopy technology is also applicable to mice, chickens and frogs and a comparison of digital embryos of these species is likely to provide crucial insights into basic developmental principles and their conservation by evolution.

Philipp Keller says: "I am convinced that the fusion of traditional fields such as physics, informatics and biology will become key to major scientific breakthroughs in the 21st century."

➔ Take a look at www.embl.org/presscoverage to see how this and other EMBL science stories have hit the headlines.

The study provides countless new insights into embryonic development

Training for a brighter future

The Non-scientific Training and Development Programme's latest brochure is even more chock-a-block full of courses for the next few months. There's something for everyone, from soft skills training to IT and language classes, and the courses are suitable for scientists and non-scientists alike at any career stage. Brand new courses starting the next few months include Personal Effectiveness, Coaching and Performance Management, Project Management and Leadership skills.

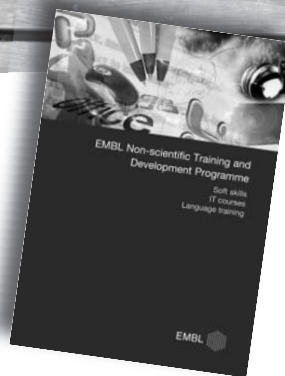
Many of the soft skills courses, which include interviewing and management skills, effective writing, Train the Trainer and the Effective Team Leader, are taught by Frances Scott. She began her career as a geneticist, working for the UK's Medical Research Council and the University of London, among others. After moving into careers advice and then spending some time working in graduate recruitment at BA systems, she became a full-time trainer in 2000.

"I always really enjoyed the part of my work that involved teaching and training, so I eventually decided to concentrate on that instead of continuing with science," she explains. "Now, working with EMBL, I get to interact with scientists again, so it's the best of both worlds!"

Frances, who spends up to a week at a time at each outstation, believes everyone can benefit from the courses. "All my courses are about transferable skills – management and commu-



Above: soft skills trainer Frances Scott; right, the new brochure, available soon



nication – which are useful for people in all fields, no matter what their career stage," she says. "They can be essential for people who are just about to leave EMBL and want to make sure they're competitive in the job market, and they're also useful for those who want to

expand their skill set and gain experience while they're still here.

"A mix of people from different departments – scientific and non-scientific – can be very beneficial for everyone on a course, offering different perspectives. It's also a great way of meeting new people!"

However, the proof of the pudding is in the eating, as they say, and who better to testify than colleagues who've already taken the courses? Andreas Jaedicke, a postdoc from Iain Mattaj's lab at EMBL Heidelberg, took the Advanced Presentation Skills course back in early 2008. "We taped each other doing presentations and it was really helpful to see where we were going wrong," he says. "I learnt that I need to maintain eye contact and engage with the audience a bit more.

"The course was useful and fun, and we learnt many tips and tricks that can be applied to all sorts of situations and audiences. I would definitely sign up for other courses."

EMBL-EBI group leader Nick Luscombe took the presentation skills and media skills courses with another trainer, Ali Sargent. "I found the presentation course extremely helpful and relevant to my immediate needs," he says. "The media course was really good fun, but I haven't had a chance to use what I learnt yet!"

Visit the website at www.embl.org/staffonly/personnel/training_dev/index.html for more details about upcoming courses.

Click and learn with EMBL-EBI

The EMBL-EBI's eLearning portal has just released its first wave of eLearning tutorials on the use of core EBI resources – one on the Ensembl genome browser and the other covering transcriptomics using the ArrayExpress resource.

The Ensembl course provides a glimpse into the genes and annotation of more than 39 species, introducing the themes of comparative genomics and genetic variation. The transcriptomics course familiarises the participant with various microarray applications, how to optimally design a microarray experiment, and subsequent steps of data analysis and linking to other resources.

Both courses build upon the core eLearning structure established by the three initial courses; exploring the EBI's data and resources, sequence searching and patent searching. They all incorporate a variety of different learning methods, com-

binning video tutorials, guided tours through screenshots and reflective tasks.

The complete suite of eLearning modules are free, but users need to sign up to receive a username and password from www.ebi.ac.uk/training/elearning. Of course, users are free to follow the courses when and how they want; one of the main objectives of the eLearning materials is to overcome financial and time restrictions that prevent users from attending scheduled training events.

Further modules are in development and users will also soon be able to benefit from training on the UniProt resource and structural biology (including MSD).

We are keen to gather feedback from beta-testers to improve the existing eLearning experience wherever possible and welcome any comments.

– Louisa Wright

Upcoming free courses in the EMBL Non-Scientific Training and Development Programme include:

Course	Date
Interviewing Skills	20 Jan
Photoshop Basics	21-22 Jan
How to deal with stress and pressure	22 Jan
Presentation course	29 Jan
Access Beginners	3-4 Feb
Effective Team Leader – Part 1	17-18 Feb
Effective Writing Part 1	19 Feb

New courses for 2009:

Personal Effectiveness
Coaching and Performance Management
Project Management
Leadership skills

E-mail td@embl.de or visit www.embl.org/staffonly/personnel/training_dev/index.html for more details.

From EMBL's member states, Sweden has the 7th largest body of alumni (87)

Should I stay or should I go?

EMBL alumni encourage Swedish scientists to research abroad



The event offered plenty of networking opportunities

“Your mothers and fathers paid for EMBL – so use it!” This was the message from EMBL DG Iain Mattaj to more than 120 young Swedish scientists on 19 September at the Royal Swedish Academy of Sciences (RSAS).

The event, initiated by RSAS and funded by the Swedish Research Council (SRC) and the Alumni Association, addressed the hot topic of mobility amongst young Scandinavian scientists. It's such an issue in Sweden that over 30% of the participants traveled more than 75km to attend the meeting, appropriately called 'EMBL – a jump

start to an international career in molecular biology’.

The other speakers, Håkan Billig (SRC), Lennart Philipson (RSAS, EMBL), Bernt-Eric Uhlin (the Laboratory for Molecular Infection Medicine Sweden, Umeå University) and Carl-Henrik Heldin (RSAS, Ludwig Institute for Cancer Research), stressed the importance of research abroad for a jump start to a career back home, referring to their own success in Sweden after research at EMBL (Philipson) or EMBL's node at Umeå University (Uhlin). Dr. Billig went further by pointing out that from the

experience of the SRC, Swedes who have researched abroad are more successful in securing national funding back in Sweden.

Finally Carl-Henrik Heldin, former EMBL Scientific Advisory Committee chair, encouraged all the young scientists to “just do it” for the sake of new scientific knowledge, as well as personal adventure!

Former EMBL pre- and postdocs Linda Sandblad, Klas Kullander and Johan Kreuger, together with EMBL predoc Carolina Tängemo – all Swedish – led a panel discussion on the significance of EMBL to their career and personal lives. Most of the discussion focused on the Swedish social security system as a reason for immobility amongst young scientists. In Sweden, parents are entitled to share 14 months paid leave between them, this benefit being lost if they spend more than 12 months abroad. As most Swedes are between 25 and 30 when they start their predoctoral research, raising a family is a major issue which they do not wish to jeopardise through a career abroad.

Linda Sandblad, mother to 4-year old Lea, closed this discussion with a noteworthy consideration. “Doing good research at EMBL is an investment in your future career. This is the best social security you can have for yourself and your child.”

EMBL and the Alumni Association would like to thank EMBL alumna Anna Ledin for making this event happen, the Royal Swedish Academy of Sciences for hosting it, the Swedish Research Council for their generous funding, and all alumni for attending and inspiring scientists to come to EMBL.

– Mehrnoosh Rayner & Anna Ledin

- A SRC interview with Iain Mattaj can be found at www.vr.se/english/embl.

EMBL's best perk turns 20!

Career or family? At EMBL you can have both thanks to the fantastic childcare facilities established in Heidelberg in 1988 by former Head of Personnel Konrad Müller.

As the Kinderhaus celebrates its 20th anniversary (see page 6), Ilse Engelmann, its first Head, looks back on how it has grown.

“It was a rough start, but it got better every year,” remembers Ilse who, at the beginning, decorated the rooms and cooked for the children while providing hands-on childcare.

This changed within the first six months as the number of staff leapt from two to ten to deal with the dramatic increase in children – from eight to 34!

Today, the Kinderhaus has 29 staff and 98 children. Despite its huge expansion in the last 20 years, conditions have stayed largely the same, as Ilse points out. The staff-parent relationship is still very personal, and the Kinderhaus continues to boast the longest opening hours in town (Monday–Thursday 8:30–18:00; Friday 8.30–17.00) as well as the broadest age range amongst its children: from three-month-old babies to six-year-olds. Additionally, its location next to the parents' workplace, with the possibility for mothers to nurse their babies, makes the Kinderhaus second to none.

Ilse retired from the Kinderhaus in 1996. “I loved the work with my heart and soul, until my very last day,” she says.

– Mehrnoosh Rayner



Photo: C. Paragoudis

Please mark your diaries:

- **3 November 2008:** Alumni Association Board meeting. If you have any issues you would like the Board to consider, please send these to alumni@embl.org by 24 October. The board election results will be available at www.embl.org/alumni from 4 November.
- **28 November 2008:** 4th Spanish and Portuguese Local Chapter Meeting at the CNIO, Madrid. More details from www.embl.org/alumni.

science&society

First E4S is a hit with participants

“Extremely enjoyable and worthwhile”, “exceeded my expectations” and “surprising and inspiring” was just some of the praise heaped upon the first European Science & Society Summer School (E4S) held in Heidelberg on 25-30 August.

Jointly organised by PhD students and faculty from EMBL, the European School of Molecular Medicine (IFOM-IEO) and Harvard Kennedy School of Government, E4S brought together 20 PhD students and postdocs from the life sciences, humanities and social sciences to examine the topic ‘Deconstructing and Reconstructing Life: From Classification to Design’ with lectures and discussion sessions.

Under two major themes, ‘Deconstructing and ordering living organisms’ and ‘Re-making life: new bioentities and their meanings’, the interdisciplinary summer school explored how new knowledge and technologies emerging from the biological sciences are forcing society to examine its world view and perception of living organisms, species boundaries and the nature of life.

“For me, E4S opened up refreshing new ways of thinking about problems I have been examining in my own research,” said one participant. “It instilled a culture of reflection that should help me frame my own future work with more of the literature in the social sciences,” said another.

Science & Society Programme Manager Halldór Stefánsson, who organised the event together with EMBL scientists and staff Claudia Chica, Matthias Haury, Christian Hentrich, Corinne Kox, Britta Schlaeger and Melanie Stefan, was also pleased with the result. “The summer school brought together members from the proverbial ‘Two Cultures’. But a sentiment that was explicitly expressed by many participants during the week was that if there was a gap in the beginning it gradually got filled up, and a ‘Third Culture’, common to both sides, started to emerge,” he said.

Thanks are also due to EMBL Heidelberg group leader Detlev Arendt, who gave a talk on species classification in animal evolution, and alumnus Giuseppe Testa, who talked about the scientific and political production of lineages.

Smile, you're on TV

The EMBL Heidelberg diving club made it to the small screen recently when their annual dive with the Waldpiraten camp for children recovering from cancer was filmed for the Premiere TV programme ‘Focus Gesundheit in vivo’.

The day of watery fun at Ketsch swimming pool near Heidelberg involved around 15 children and Diving Club members Pete Everitt, Corinna Gorny, Rachel Mellwig, Annabel Parret, Olga Kalinina, Fatima Verissimo and Paolo Alves.



Diving Club leader Peter Everitt shows a young beginner the ropes

from the Staff Association

Make a note in your diaries: Saturday 13 December is the first-ever **EMBL Christmas Party**. Freddy Wonder will be playing and it'll be just right to get you into the Christmas spirit! Tickets will be on sale soon; please look out for the posters.

Janine Rivals, a representative from **AMFIE** (a credit union for international civil servants), will be visiting Heidelberg on 29 October to give a presentation in the Small Operon at 12.30pm. Everyone working at EMBL and EMBO is eligible to open an

account. The rest of the day will be free for individual meetings in room 208. Please make an appointment by e-mailing jr@amfie.org.

If you would like to plan a **themed party** for all staff in Heidelberg, please contact Catherine Floyd at the SA office.

The Staff Association covers all categories of staff and has representatives at all outstations. Keep up-to-date at www.embl-heidelberg.de/~staff/ and www.embl-heidelberg.de/~staff/pensioners/.
– Catherine Floyd

newsinbrief

Registration is now open for the EBI's hands-on bioinformatics training courses on Programmatic access in Java: webservices & work flows (24-27 November) and the 2009 programme starting with Transcriptomics (19-22 January) and Understanding protein structures (23-26 February). Visit www.ebi.ac.uk/training/handson for more details and to register.

EMBL spin-out drug discovery company Cellzome has signed a worldwide strategic alliance with GlaxoSmithKline (GSK) to discover, develop and market novel kinase-targeted therapeutics to treat inflammatory diseases. The alliance gives GSK access to Cellzome's significant expertise in identifying and developing selective kinase inhibitors and its Kinobeads™ technology.

A delegation from Sony Research Labs in Japan visited EMBL Heidelberg on 26 September, initiated by Hiroaki Kitano, the Director of Sony CSL, who is a member of EMBL's Scientific Advisory Committee (SAC). They were here to look into the potential contributions of their technology, including imaging detectors and micromachines, in biology and biotechnologies.

In other visits, the Department of Innovation, Industry, Science and Research from Canberra, Australia, toured EMBL Heidelberg on 24 September, and on 1 October, Professor João Sentieiro from Portugal's Fundação para a Ciência e a Tecnologia, was here.

EMBL and EMBO were in attendance at the second SOURCE Event, the UK's leading science career fair, in London on 26 September. “Everyone commented that our stand was the busiest!” says Personnel's Laura Minnich, who manned the booth together with EMBO's Sabine Rehberger-Schneider and help from Jennifer Deegan and Vicky Schneider from the EBI. “Interestingly, there was a lot of interest in non-traditional jobs such as outreach and editing.” In addition, Dean of Graduate Studies Helke Hillebrand was there with information about the PhD programme, and EICAT Coordinator Matthias Haury gave a talk, ‘How to set up a lab and manage it’, aimed at postdocs.

The 20th European Union Contest for Young Scientists (EUCYS) in Copenhagen on 19-26 September included a talk by Gene Expression group leader Maja Köhn, and Ioannis Legouras from the Nédélec group talked about his life as a PhD student at EMBL in a live video link. The winner of the EIROforum special award of a short internship at EMBL next year is Cecilia Engel Thomas from Denmark.

people@EMBL



New EBI group leader **Anton Enright** was born in Dublin and studied genetics at Trinity College. In 1998 he joined EBI to do his PhD under Christos Ouzounis, focusing on computational prediction of protein function and interactions. After a postdoc at the Memorial Sloan-Kettering Cancer Center, NY, where he worked on prediction of microRNA targets and their function, Anton returned to Cambridge in 2004 to start a lab at the Sanger Institute. At the EBI his group will work on computational RNA genomics of microRNAs, piwi associated RNAs and other small functional RNAs in a variety of species.

New team leader **Jeroen Krijgsveld** completed his PhD at the University of Amsterdam in 1999. He did postdoctoral work at Utrecht University and Harvard Medical School, and returned to Utrecht as a staff scientist. He now joins the Gene Expression unit to lead the proteomics group, where he will use mass spectrometry as a central tool to study the dynamics of protein expression in developmental processes, with a special interest in stem cells. Approaches will focus on large-scale quantitative analyses as well as on detailed characterisation of individual proteins.



New Gene Expression group leader **Jan Korbel** is no stranger to EMBL, having completed his PhD on the development of computational approaches for protein function prediction in prokaryotes in Peer Bork's group in 2005. He then carried out postdoctoral research on the mapping and analysis of genomic structural variation in humans using ultra-fast DNA sequencing technology at Yale University. Jan's new lab at EMBL will study the extent and impact of genomic structural variation in humans, combining experimental and computational approaches.

awards&honours

Michele Cianci, Project Leader in the EMBL@PETRA-3 team at EMBL Hamburg, has been awarded the Nardelli Prize 2008 by the Italian Association of Crystallography (AIC) for his contribution to macromolecular crystallography. The AIC has awarded a prize every year since 1998 to a young Italian scientist who has achieved outstanding results either by applying or developing crystallographic methods, and Michele is the first EMBL recipient of this prestigious award.

Beatriz Rosón, a visiting student in Paul Bertone's group at EMBL-EBI, has been awarded a PhD fellowship from the Spanish regional government of Castilla y León. Recipients are selected on a competitive basis from an applicant pool of outstanding recent graduate students. Beatriz received a bachelor's degree in Biological Sciences from the University of Salamanca and a master's degree in Molecular and Cellular Biology from the international SEK University in Segovia.

PhD student **Linda Schuld** recently won the prize for the best presentation at the 11th Heart of Europe meeting on biocrystallography, held in Greifswald on 25-27 September. Linda, who is from Manfred Weiss's team at EMBL Hamburg, presented the "Three-dimensional crystal structure of DapD from *M. tuberculosis*". The panel selecting the talk consisted of Kristina Djinovic-Caruogo from the University of Vienna, Pavlina Rezacova from the Institute of Molecular Genetics in Prague and Norbert Straeter from the University of Leipzig.

Match point



Intern Remy Clement finished his six-month assignment to EMBL-EBI's Huber Group in style on 19 September when he won the annual Wellcome Trust Genome Campus tennis cup. As well as being this year's men's singles champion, Remy was also in the winning pairs for both the mixed doubles and the men's doubles. "The tournament was really well organised by David Saunders from the Sanger Institute, and there was fair-play all round," says Remy, who returned to l'Ecole Centrale de Nantes at the end of September.

events@EMBL

19-26 October EMBL Hamburg

Course: EMBO practical course on solution scattering from biological macromolecules. D. Svergun, M. Roessle, M. Petoukhov, P. Konarev

21 October EMBL Heidelberg

EMBL Distinguished Visitor Lecture: Not adhering to dogma: New insights into cell-cell adhesion and implications for development and disease. W. James Nelson, Dept. of Biological Sciences, The James H. Clark Center, Stanford University, USA

22-24 October EMBL Monterotondo

Course: ELLS LearningLAB: Conoscere il sistema nervoso

23-25 October EMBL Heidelberg

Conference: 10th International EMBL PhD Student Symposium: Decision Making in Biology – Nature at the Crossroads

29 October EMBL Heidelberg

Presentation by the Credit Union for international civil servants, "AMFIE"

7-8 November EMBL Heidelberg

Conference: 9th EMBL/EMBO Joint Conference on Science and Society: Systems and synthetic biology: scientific and social implications

15-18 November EMBL Heidelberg

Conference: 4th EMBO Conference: From functional genomics to systems biology. P. Bork, E. Furlong, F. Holstege, M. Vidal

24-27 November EMBL-EBI

Course: Programmatic access in Java: webservices and work flows. Outreach & Training Team

24-27 November EMBL-EBI

Winter Council Meeting

3-5 December 2008 EMBL Heidelberg

Course: Exploring modular protein architecture. A. Budd, T. Gibson

4-5 December 2008 EMBL-EBI

Heads of Units Meeting
Senior Scientists Meeting

11 December EMBL Heidelberg

EMBL International PhD Programme Graduation Ceremony

13 December EMBL Heidelberg

EMBL Christmas Party

15-16 January Atlantic Hotel, Heidelberg

Chemical biology retreat

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