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EMBO to celebrate 50th anniversary in 2014

2014 is the 50th anniversary of EMBO and a full programme of events and activities are planned throughout the year. The 50th anniversary is an opportunity to look back on achievements and reflect on progress. It is also a time to celebrate and take a glimpse into the future.

EMBO, which was founded in 1964, will celebrate its 50th anniversary in 2014. Diverse activities and events are planned to highlight the contributions that EMBO has made to the life sciences over its 50 years of existence – from talks and meetings to interviews and publications. The intention is to promote the achievements of EMBO to a wider community.

2014 is also an anniversary year for other organizations in the life sciences. The European Molecular Biology Conference (EMBC) will be 45 in 2014 and EMBL will be 40. A joint EMBO|EMBC|EMBL Science Policy Meeting, which will be held on the 2nd and 3rd of July 2014 in Heidelberg, will highlight the contributions that EMBO, the EMBC and EMBL have made to European science and take a look at the growing role of EMBO in science policy in Europe.

2014 is also the 50th anniversary of FEBS, and its French member society, the Société française de biochimie et de biologie moléculaire (SFBBM), will be 100 years old. Instead of holding separate annual conferences, FEBS, EMBO and SFBBM will celebrate together in 2014 by holding a jointly organized large conference that will take place at the Palais des Congrès in Paris from August 30th to September 4th.

A special membership meeting and party will take place in October in Heidelberg for all EMBO Members. As in previous years, newly elected EMBO members will be welcomed who, in 2014, will also include members from the anniversary list of scientists for underrepresented research areas.

Anniversary events for the EMBO programmes and other special projects are also planned. One

of these projects is a collection of interviews with 10 scientists who have witnessed and influenced the history of molecular biology and EMBO. Science writer *Georgina Ferry* will conduct and write up the interviews. She is the author of such books as *Max Perutz and the Secret of Life* and *The Common Thread: A story of science, politics, ethics and the human genome*. The interviews, which will in part take a look at the early days of EMBO, will include contributions from scientists such as *Sydney Brenner*, *Luigi Luca Cavalli-Sforza* and *James Watson* as well as the directors of EMBO. These personal accounts will be an opportunity to collate engaging information about the formative years of molecular biology and also to anticipate some of the future directions of the life sciences.

Further information will be made available about the timing and full programme of anniversary events later in the year.



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EMBO | EMBC | EMBL Science Policy Meeting

2–3 July 2014

EMBL Advanced Training Centre
Heidelberg | Germany

The FEBS–EMBO Conference 2014

30 August – 4 September 2014

Palais des Congrès | Paris | France

Special EMBO Membership Meeting

October 2014 (dates to be confirmed)

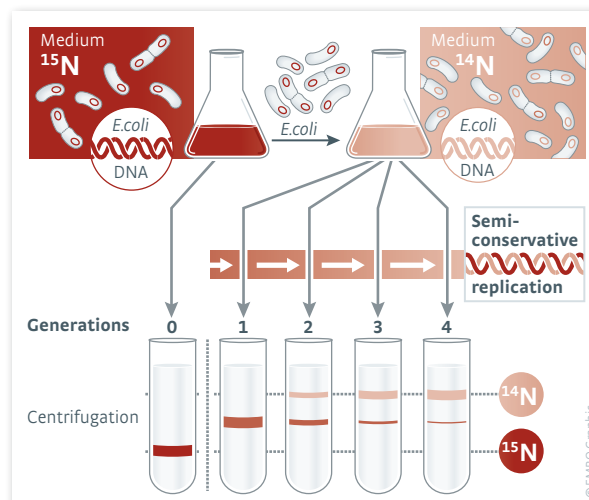
Heidelberg | Germany

10 papers that changed molecular biology

As part of its 50th anniversary activities in 2014, EMBO is interested in producing a collection of commentaries on classic scientific publications entitled 10 papers that changed molecular biology.

The idea is to define a collection of scientific papers that have had an extraordinary impact on the science of molecular biology and to invite members of the EMBO community to write short commentaries on the wider impact of these papers.

The experiment that demonstrated the semi-conservative replication of DNA is an example, often referred to as “the most beautiful experiment in biology”. However, the publications need not to be the most known or most cited but they should be amongst the



most influential. The proposal of “hidden classics” is strongly encouraged.

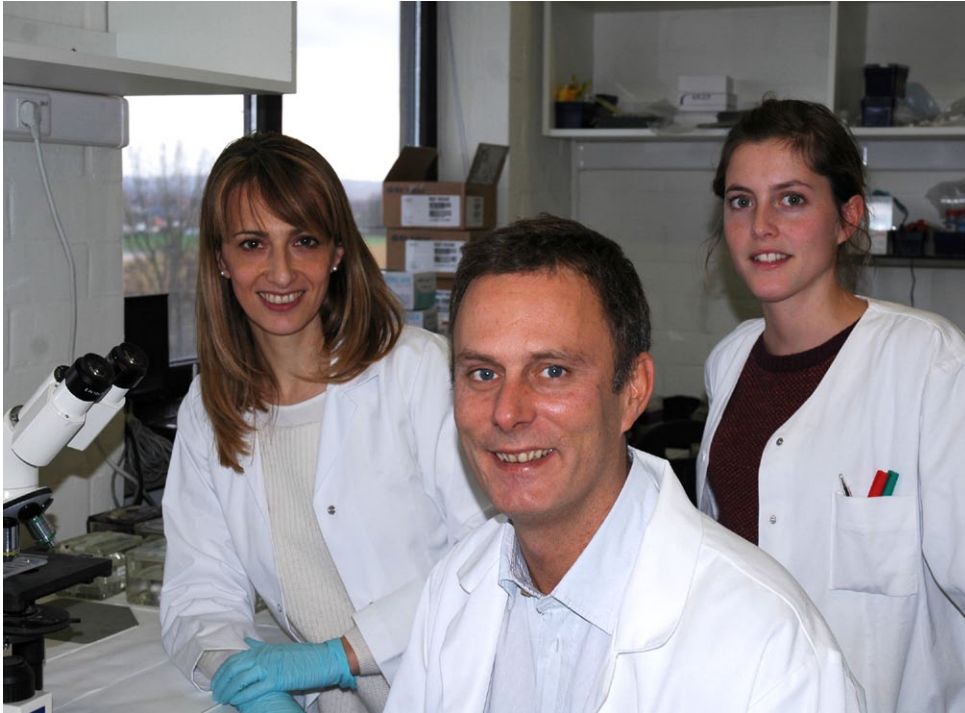
The publications should cover the time period from 1950 onwards, including the early years of EMBO (circa 1962 to 1969). Provocative and contentious suggestions are permitted but must be supported by a strong case for inclusion. If there is an EMBO connection, it should be highlighted.

Please send your suggestions for papers and possible commentary writers by e-mail to barry.whyte@embo.org

An insatiable curiosity

CÉDRIC BLANPAIN is a professor of stem cell and developmental biology at the Free University of Brussels. His original approach to science has earned him a series of awards and resulted in several high-profile papers in 2012. In EMBOencounters, he talks to Yvonne Kaul about his career and his work on stem cells and cancer.

Cédric Blanpain and colleagues in the laboratory



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Cédric, 2012 was a great year for you – you published two *Nature* papers and a study in *Cell*, were elected a Member of EMBO, and chosen as one of “*Nature’s 10*”, a group of “*ten people who matter*” selected by *Nature* magazine editors. What factors contributed to your success?

In science, there is always some kind of momentum, when things reach maturity at the same time. That was the case for me. Many of our projects were initiated many years ago. *Nature* for example selected me to their list because of the key study about lineage tracing in tumours. It describes a new technique to look at cancer stem cells in their natural environment during tumour growth. This approach opened up a whole new way of looking at cancer. Now other scientists use the same technique to look at the resistance of cancer cells to drug therapy for example.

In 2012, by using the cell-tracking method, we looked at the damage and the repair of skin and proved that there is a pool of stem cells that are important for skin repair. This is important as it opens up new paths for drug development.

Can you describe your ongoing projects?

My laboratory can be divided into two parts: stem cell biology and cancer biology. In the first area of interest, we are trying to identify more precisely the stem cells that control the development of the mammary tissue, prostate tissue and the skin epidermis. We want to understand better the role of stem cells in cancer and how they can go wrong with oncogene expression.

For cancer stem cells, we are looking more precisely at the mechanisms that regulate these cells in different skin cancers. Can we block the renewal of skin cancer stem cells? Are they responsible for cancer relapse and can we develop therapies that make cancer cells differentiate into non-dividing cells?

With more than 30 lab members, your team is relatively large. How do you manage all the different projects?

They are all very good people that at least partially self-manage themselves. We have regular meetings and I form subgroups. There are always at least two or three people who work on the same project, help each other and share the same goals. When travelling, I can be reached by email, skype and telephone. And I practice an open-door policy. My lab members can always come to discuss their ongoing projects or call me any time, even at night or at the weekend.

You have been an EMBO Young Investigator since 2009 and you were elected to the membership this year. How has EMBO support affected your work?

It has been a great help. When you are a Young Investigator it has very practical benefits. Almost all scientists in the network know each other, form subgroups, and take part in sectoral meetings. It is extremely useful to be in touch with the best researchers in Europe. EMBO membership is great recognition for a scientist. I am also member of the editorial advisory board of *The EMBO Journal*, which is publishing increasingly more stem cell and cancer stem cell papers recently. The organization is key in my career and I am proud to be part of it.

What is unique about your working style?

The use of clonal analysis and lineage tracing in different ways to obtain new information was really unique. When I started with lineage tracing to decipher the cellular origins of cancer, no-one else was using this approach. Skin tissue was the first organ we studied. We subsequently used this technique to look at breast and prostate cancer in a completely novel way. Again, we were pioneers. But now many other people do similar studies.

What is your personal style of work?

To understand things, I need to see them. Looking at something with my own eyes is key to me. I tend to be impatient and I do not like to wait too long but this reflects my enthusiasm. I often press for results and demand to know the outcome of an experiment as quickly as possible.

When do you get the best ideas?

It is not in a rush or in a meeting, but when I am alone, by myself. Often at night, I rethink my day and try to figure out what would be the next experiment. The best ideas come when I am in my car on the way home.

Did you have a key experience that set direction for your career?

It was definitely my postdoctoral time at the Rockefeller University in New York. The Free University of Brussels, where I studied, is a rather small university. Coming to Rockefeller and seeing all the superstars that published one paper after another, and all the smart postdoctoral researchers left a lasting impression. This extremely stimulating environment reinforced my taste for excellence.

What are the next milestones for your research?

Looking ahead, we want to identify the mechanisms that regulate cancer stem cells and to develop a new approach to block the growth and proliferation of these cells, a strategy that would be effective in treating cancer. For stem cells, I would like to understand better what determines the balance between renewal and differentiation during the normal life of a cell. We also want to see how these cells change the way they divide during tissue repair.

EMBO Young Investigators

selected in 2012

Claus Maria Azzalin Non-coding nuclear RNAs CH ETH Zurich	Massimo Lopes DNA replication stress CH University of Zurich
Renata Basto Centrosomes in development and disease FR Institut Curie, Paris	Guillermina López-Bendito Cellular & molecular mechanisms of brain wiring ES Institute of Neuroscience, CSIC, San Juan de Alicante
Andrew Carter Structure and mechanism of dynein UK MRC Laboratory of Molecular Biology, Cambridge	Ron Milo Synthetic metabolic pathways for carbon fixation IL Weizmann Institute, Rehovot
Sonia Garel Forebrain morphogenesis and wiring FR École Normale Supérieure, Paris	Bruno Reversade Genetics of identical twinning SG Institute of Medical Biology (IMB), A*STAR, Singapore
George Garinis DNA repair in development and disease GR Institute of Molecular Biology and Biotechnology (IMBB-FORTH), Heraklion	Thomas Richards Evolution of endosymbiosis UK Natural History Museum London
Ilona Grunwald-Kadow Neural basis for olfaction in insects DE Max Planck Institute of Neurobiology, Martinsried	Rickard Sandberg Single-cell transcriptomics SE Karolinska Institutet, Stockholm
Jacob Hanna Epigenetic reprogramming IL Weizmann Institute, Rehovot	Melina Schuch Meiosis in mammalian oocytes UK MRC Laboratory of Molecular Biology, Cambridge
Eva Hoffmann Chromosome segregation mechanisms in meiosis UK University of Sussex, Brighton	Evanthia Soutoglou Nuclear architecture in DNA repair FR Institute of Genetics and Molecular and Cellular Biology (IGMC), Illkirch Cedex
Jacqueline Jacobs Chromosome end protection by telomeres NL Netherlands Cancer Institute, Amsterdam	Alexander Stark Decoding regulatory sequences AT The Research Institute of Molecular Pathology (IMP), Vienna
Gregory Jefferis Olfactory perception in the fruit fly UK MRC Laboratory of Molecular Biology, Cambridge	Itai Yanai Evolution of developmental gene pathways IL Technion-Israel Institute of Technology, Haifa
David Keays Molecular and cellular basis of magnetoreception AT The Research Institute of Molecular Pathology (IMP), Vienna	Raz Zarivach Structure-function of magnetosome associated proteins IL Ben-Gurion University of the Negev, Beer Sheva

EMBO Installation Grantees

selected in 2012

Can Alkan Computational methods to analyze genetic variation TR Bilkent University, Ankara <i>Moving from:</i> US University of Washington, Seattle	Michał Komorowski Optimizing experimental protocols with microfluidic devices PL Institute of Fundamental Technological Research Polish Academy of Sciences, Warsaw <i>Moving from:</i> UK Imperial College London
Deniz Atasoy Neuronal activity and behaviour TR Yeditepe University, Istanbul <i>Moving from:</i> US HHMI Janelia Farm Research Campus, Ashburn	Tamer Önder Histone methylation in somatic cell reprogramming TR Koç University, Istanbul <i>Moving from:</i> US Children's Hospital Boston
Sandra Fonseca Regulatory mechanisms of the plant hormone jasmonic acid PT ITQB – Instituto de Tecnologia Química e Biológica, Oeiras, Lisbon <i>Moving from:</i> ES Spanish National Centre for Biotechnology (CNB), Madrid	Kerem Pekkan Biomechanics in embryonic cardiovascular development TR Koç University, Istanbul <i>Moving from:</i> US Carnegie Mellon University, Pittsburgh
Reto Gassmann Dynein regulation PT Institute for Molecular and Cell Biology, Porto <i>Moving from:</i> US Ludwig Institute for Cancer Research, San Diego	Erdal Toprak Evolution of antibiotic resistance TR Sabanci University, Istanbul <i>Moving from:</i> US Harvard Medical School, Boston
Ivar Ilves CMG helicase complex in DNA damage response EE University of Tartu <i>Moving from:</i> US University of California, Berkeley	Lukáš Trantírek <i>In vivo</i> NMR of nucleic acid structures CZ Central European Institute of Technology, Masaryk University, Brno <i>Moving from:</i> NL Utrecht University

Congratulations!

Forty-three EMBO Members and three EMBO Young Investigators were awarded European Research Council (ERC) Advanced Grants in 2012.

The list of the latest awardees is available at:
<http://erc.europa.eu/press-releases>

Upcoming deadlines

Joint ERS EMBO Long-Term Fellowships 15 February	EMBO Plenary Lectures 1 March
EMBO Long-Term Fellowships 15 February	EMBO Young Investigators 1 April
EMBO Courses & Workshops 1 March	EMBO Installation Grants 15 April

Next issue

EMBOencounters

The next *EMBOencounters* issue – **Summer 2013** – will be dispatched in **July 2013**. Please send your suggestions, contributions and news, to communications@embo.org by **6 May 2013**.

Editorial

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US Fellows' Meeting at Rockefeller University

120 past and present **EMBO FELLOWS** came to the three-day meeting held in New York in November 2012. This biennial US meeting brings together fellows in a friendly atmosphere to share experiences and establish new collaborations and contacts.

Around one third of the approximately 250 EMBO Long-Term Fellowships given every year are awarded to European post-doctoral researchers going to a non-EMBC member state. The majority of those go to North America. The high numbers show that the United States and Canada are still popular destinations for young, aspiring life scientists. To make them aware of the job opportunities back in Europe and to set up a platform for communication and exchange, the EMBO Fellowship programme organized a meeting at the Rockefeller University in November 2012 – the fifth US Fellows' meeting. 120 past and present fellows came to the event and enjoyed two full days of excellent presentations and social events.

Scientific presentations by EMBO Fellows on their ongoing research filled the major part of the meeting. Neurosciences, epigenetics, RNA biology, molecular medicine, plant biology, stem cell biology, computational biology – the wide range of topics showed that the fellowship programme supports well-established but also emerging fields. The fifteen-minute presentations were

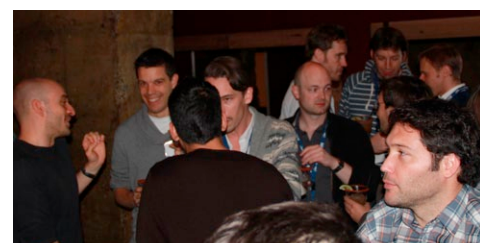
complemented by talks on scientific publications, science policy and career opportunities. *Donald Dingwell*, Secretary General of the European Research Council (ERC) spoke about the funding opportunities at the ERC. The ERC starting grants aim to attract and retain the next generation of independent research leaders.

Former fellows who returned to Europe after pursuing a career in the US spoke about how they benefitted from swapping continents. "It was good to hear the individual stories of young group leaders and how they decided on their personal priorities when coming back to Europe," said *Sebastian Pechmann* from Stanford University. "I particularly liked *Nuria Flames Bonilla's* and *Harald Janovjak's* talks," commented *Mehmet Somel*, a postdoctoral researcher at the University of California in Berkeley. "Both speakers emphasized how important it is to create a prosocial lab environment and to be most careful when choosing initial team members." Janovjak from the Institute of Science and Technology in Austria spoke about his transition from a postdoctoral researcher in the US to assistant professor in

Europe. *Flames Bonilla* from the Institute of Biomedicine in Valencia, Spain, gave a talk on Conserved regulatory logic of dopaminergic differentiation and also told the story about her move from New York City to Valencia.

Former EMBO Fellow *Thomas Schwarz-Romond* from *The EMBO Journal* gave a glimpse behind the rationale of scientific publishing from the perspective of a not-for-profit science-funding organization. His talk focused on the editorial processes developed at EMBO publications, recent innovations such as the *Transparent Editorial Process* and EMBO efforts to improve the reliability and availability of original source-data. He also contrasted the business model of highly selective titles with recent trends towards mass publication or fully subsidized publications. During a lively discussion Thomas answered questions regarding editorial policies, author/referee confidentiality and the general impact of Open Access.

"The quality of scientific talks and posters was excellent and we received extremely positive feedback from the participants," concluded *Andrea Hutterer*, fellowship programme manager and meeting organizer. "This forum is important as it enables current and previous EMBO fellows to network and keep ties with European research," she added.



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European Commission science advisor visits Heidelberg

Left to right:

Silke Schumacher, Director of International Relations, EMBL

Iain Mattaj, Director General of EMBL

Anne Glover, Chief Scientific Advisor for the European Commission

Maria Leptin, Director of EMBO

Didier Schmitt, Scientific Advisor and Foresight Coordinator, European Commission

Anne Glover, Chief Scientific Advisor to José Manuel Barroso, the President of the European Commission, met with members of EMBL leadership and the EMBO management team on a recent visit to Heidelberg, Germany. Glover is the first scientific advisor to be appointed in the office of the President of the European Commission.

EMBO Director *Maria Leptin* provided an overview of EMBO programme areas and activities. Discussions ranged from how to advance science policy in Europe to the steps needed to make scientific data published in papers more transparent and useful to the scientific community. The metrics needed for research assessment were also a topic of discussion.

The visit took place on 9 January and included a tour of the Advanced Training Center building on the EMBL campus.



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EMBO, EMBC and the National Science Council of Taiwan sign cooperation agreement

New ways of global scientific interaction have been created following a cooperation agreement between EMBO, its inter-governmental funding body, the European Molecular Biology Conference (EMBC), and the National Science Council of Taiwan (NSC). The agreement will allow Taiwanese scientists to participate in EMBO training programmes and activities. It also means that EMBO Courses & Workshops can take place at Taiwanese research institutes.

Under the terms of the agreement, scientists can apply for EMBO Short-Term and Long-Term

Fellowships. Young Taiwanese group leaders will be eligible to benefit from the EMBO Young Investigator Programme.

Taiwanese scientists and EMBO will also cooperate in the organization of EMBO Courses & Workshops, which will help to spark collaborations. Last year, Academia Sinica and EMBO jointly organized the lecture course *Logic of Regulatory Circuits in Life Sciences* in Taipei City.

Conference organizers can apply for funding for plenary lectures given by EMBO Members or lectures given by EMBO Young Investigators

at Taiwanese institutes and universities. Travel stipends will be available for Taiwanese scientists to attend EMBO Courses & Workshops and *The EMBO Meeting*.

This is the first cooperation agreement of its kind between EMBO, EMBC and Taiwanese scientists, represented by NSC and Academia Sinica. Together with the cooperation agreement with Singapore signed in 2011, it further increases interactions between Asian and European life scientists.

Making scientists better managers

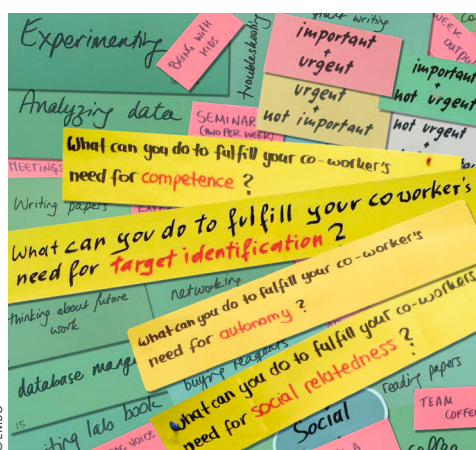
Since 2004, **EMBO LABORATORY MANAGEMENT COURSES** have delivered benefits to almost a thousand young scientists. These increasingly popular courses are helping scientists to improve their management skills in a wide range of research situations.

A typical lab situation: A group leader is demanding the results of an experiment to be presented at the next team meeting. Yet the postdoctoral researcher needs another week to prepare them – and leaves his boss perplexed. Is it better to stay rigorous and insist on seeing the results or rather to accept the delay and grant an extension?

Managing people, producing results, building a reputation – starting an independent research group involves a lot of pressure for aspiring group leaders. Many of them feel ill-prepared and overwhelmed by the challenges they face. Training tailored to their particular needs is scarce.

This is where EMBO Laboratory Management Courses come in. Over the last nine years, nearly a thousand young group leaders and postdoctoral researchers completed the workshops developed by EMBO. They have been taught how to build and manage a team, how to communicate with their team members in a constructive manner and support them to become independent scientists, how to manage their time and stress levels, hire people and build and maintain collaborations. “Such training is not widely embedded in university study or in postdoctoral programmes, the courses have therefore an important role in the career development of scientists,” says *Anne-Marie Glynn*, programme manager. The length of the courses and the scope of topics have developed since its inception in 2004. Initially conceived for EMBO Young Investigators, they are now offered to group leaders and postdoctoral researchers too. Most of the participants are from European countries, but some travel from destinations in South America, Asia, Africa and Australia. The interest is growing each year:

“(the courses) are relevant for anyone who will have leadership or management responsibilities”



Since most of the courses scheduled for 2013 are oversubscribed, additional courses may be added later this year.

EMBO is successfully filling a gap. Last December, the organizers conducted a survey among postdoctoral researchers and group leaders who attended the workshops between 2010 and 2012. The results were overwhelmingly positive. 95 percent of the nearly 200 surveyed group leaders would recommend the course to their colleagues – or have done so already. 94 percent think that their performance as a group leader has improved after the course. And 93 percent say that the course met or exceeded their expectations.

EMBO is the only organization worldwide to offer regular laboratory management courses to hundreds of scientists annually. The successful format has been adopted by other institutes in Europe and beyond. The Gulbenkian Institute of Science in Portugal and the Weizmann Institute of Science in Israel, among others, have hired the EMBO trainers to teach similar courses on site. Many institute and department heads strongly recommend taking management training to their newly recruited group leaders. Also senior scientists from the United States appreciate the high standards: “The EMBO Laboratory Management Courses provide an invaluable opportunity for young scientists to learn the skills that are necessary for running an independent laboratory,” comments *Ron Vale*, Howard Hughes Medical Institute Investigator at the University of California in San Francisco and EMBO Associate Member.

Recurring topics. When asked about what they perceive as the biggest challenges as group leaders, most of the surveyed scientists mention three recurring topics: motivating group members, time management and dealing with personnel issues within the group. *Hilde Janssens*, herself an active scientist at the Centre for Genomic Regulation in Barcelona and one of the course trainers, confirms the tendency. “Better people management and social skills combined with some business knowledge increase the chances for a successful career; whereas twenty years ago a good scientific idea seemed to be enough.” For her, creating a stimulating atmosphere is key for the success of a research lab.

“Topic selection was excellent. I especially liked how the presenters tailored the topics based on participant feedback.”

The course programme is expanding its scope further: For the first time this year, EMBO is offering a course specifically tailored to the needs of female leaders in science. Participants will learn to identify and build the tools that will help them to lead a research group in a traditionally male dominated environment.

INFO

In 2013, EMBO offers five lab management courses for group leaders and seven for postdoctoral researchers all of which are currently fully subscribed. To see the exact schedule go to:

www.embo.org/programmes/courses-workshops/lab-management-courses.html

“Allowed me to better analyze and understand myself as a leader and a manager...”



New fellowship opportunities

EMBO and the European Respiratory Society (ERS), offer joint fellowships for clinicians.

Financial resources for young clinicians who want to try their hands at basic research have been drastically reduced over the last few years, mainly due to the economic crisis that also affected the national health systems. “The number of European physicians spending time at the bench has continually decreased,” says Robert Bals,

research director of the European Respiratory Society (ERS), the leading European society of nearly 10 000 physicians and clinical scientists working in the field of respiratory diseases. To tackle this problem, the ERS approached EMBO last year with the idea of establishing joint fellowships that would be financed and managed by both organizations. “EMBO is a natural partner for us as it offers a highly differentiated fellowship programme for basic researchers,” says Bals.

As a result, EMBO and ERS launched a joint fellowship programme designed for clinicians who work in the field of respiratory medicine last December. The goal of this initiative is to encourage collaboration and to bring more clinicians into basic science – at least for a few months. “It is in the interest of EMBO to attract clinicians to

basic research,” says Andrea Hutterer, fellowships manager at EMBO. “Partnership with a large medical society like the ERS will not only enhance exchange between clinicians and researchers, but also raise our visibility within the clinical community.”

Two long-term fellowships for up to one year and four short-term fellowships for one to three months will be offered each year. Programme details can be found at: www.embo.org/programmes/fellowships/ers-embo-fellowships.html



Dominik Hartl

INFO BOX | A CAREER AS CLINICAL SCIENTIST

With translational research gaining momentum, the need for clinical scientists who are trained in basic research and medicine is increasing. “Physicians and basic researchers who often work side by side in translational research centers do not necessarily speak the same language,” says Dominik Hartl, professor and head of a research group at the University of Tübingen. After obtaining a

degree in medicine, Hartl received a fellowship from the German Research Foundation and spent two years at Yale University in the United States, where he gained experience in state-of-the-art techniques in pulmonology and immunology. Back in Germany, he started his own research group and was appointed research professor at the University of Tübingen. The 35-year-old says that the time he

spent at Yale reinforced his desire to be an independent researcher. Nowadays, however, the extra time required for well-designed research projects that encompass clinical education is often a matter of tedious negotiations and requires a lot of motivation. “Yet this is the way to go,” he is convinced. “Physician scientists are indispensable for translational research projects.”

Cancer focus group

EMBO YOUNG INVESTIGATORS met recently for a sectoral meeting in Heidelberg. The meeting was an opportunity to discuss some of the latest developments in cancer research.

The EMBO Young Investigator Programme funds a number of specialized meetings every year. Members of the network form focus groups and get together to discuss their ongoing research

in systems biology, genomic instability, cancer and other topics. The informal sectoral meetings bring together scientists who work in the same fields but who are investigating different research

areas. They also unite scientists who work on different model systems and employ a wide range of techniques.

The latest meeting was held in November 2012 and organized by *Eric So*, professor and chair of Leukaemia Biology at King’s College in London. Thirteen group leaders from all over Europe came to Heidelberg to present their latest results in areas such as new therapeutics to target leukaemias, signalling aspects in cancer development and global approaches to examine the inflammatory in the control of cellular senescence. *The EMBO Journal* editors *Bernd Pulverer* and *Thomas Schwarz-Romond*, who also attended the meeting, answered questions about general editorial policies and the possibility to submit papers or specific reviews.

“The meeting benefited from the useful input of *The EMBO Journal* editors and has triggered many fruitful collaborations among the participants,” commented Eric So. The results presented by *François Fuks* from the Free University of Brussels were subsequently published in *The EMBO Journal* at the end of January. (doi: 10.1038/emboj.2012.357)



Evening dinner after cancer sectoral meeting



Charité clinic (left)
and the Laboratory for
Medical Research at
MDC (top right)

Walter Rosenthal,
Scientific Director of MDC



Under one roof

The newly founded **BERLIN INSTITUTE OF HEALTH** is poised to be one of the leading institutes for health research in Europe.

It is a marriage of giants: Charité, Germany's largest university clinic, and the Max Delbrück Center for Molecular Medicine (MDC), one of the biggest life science institutes in Berlin, will combine their research under one roof. The new structure will operate under the name Berlin Institute of Health (BIH) and will focus on systems medicine – a holistic and interdisciplinary approach that investigates the molecular mechanisms of disease. The new institute will receive significant funding of up to 300 million euros between 2013 and 2018 and 80 million euros per year afterwards from the German government.

“We have brought together the research of two institutions with complementary expertise,” comments *Walter Rosenthal*, Scientific Director of the MDC. The MDC has always worked to link basic research and clinical applications; and Charité is a strong clinical partner with access to its own research department and the clinical data of three thousand patients. “It makes a lot of sense to have this joint institutional roof,” explains Rosenthal.

The MDC, which celebrated its 20th anniversary last year, has achieved a reputation as one of Europe's leading centers for biomedical research. Several EMBO Members have joined the institute in its relatively short history and established research groups there (see also *EMBOencounters* Winter issue 2010/2011). The spirit of collaboration with Charité goes back a long way. From the beginning, scientists from both institutions have worked hand in hand on projects related to cardiovascular and metabolic diseases, cancer, as well as on diseases of the nervous system. Since 2007 much of this work has been carried out as part of the jointly funded Experimental and Clinical Research Center.

BIH is expected to take on a pioneering role in Europe bringing translational and basic research together. But what does systems medicine look like in practice? “The starting point for studying complex diseases will be at the level of molecular systems and clinical observation or diagnosis of diseases and conditions such as heart failure, cancer or multiple sclerosis,” explains Walter Rosenthal, Scientific Director of the MDC. “The goal is to identify molecular signatures that are common to many different diseases. Systems medicine rejects the idea of *one disease–one mechanism* and instead centers on the more complex notions of *one disease–several mechanisms* and *one mechanism–several diseases*.” By looking at molecular signatures, for example five or ten parameters and not just one, the scientists hope to reduce failures in the treatment of cancer and other diseases and to minimize potential side effects in patients.

Finances and future investments. Bringing both partners together also has financial advantages. The German constitution does not allow universities to receive institutional funding from the national government and institutional support has to come from the states. Charité, a university clinic, can therefore benefit from national funding via the merger with MDC, which belongs to the Helmholtz Association of National Research Centres and can receive support from the national government.

The focus will be on quality for research projects and employed staff. Researchers in both institutes will be entitled to apply for the additional funding in competition with external candidates – provided they conduct research on systems medicine. Every five years, all group leaders will have to give an account of their research and justify funding for another round of five years – similar to the approach of the Howard Hughes Medical Institute in the United States.

Significant resources will be invested in diverse -omics technologies, such as proteomics, genomics, and metabolomics. Large-scale automated biobanking is still needed. There is also a need for a bioinformatics platform, clinical informatics, and a clinical research unit where in- and outpatients are treated. “Substantial investments in buildings, space for infrastructure, and people also have to be made,” says Rosenthal. Asked for a similar example on the international stage he mentions the renowned Broad Institute of Harvard and MIT in Boston, United States. Berlin definitely has the capacity to be another first-class player in the international league.

Practical Courses

Metabolomics bioinformatics for life scientists
UK-Hinxton, 25 February–1 March

High-throughput RNAi and data analysis
DE-Heidelberg, 3–8 March

Postgenomic phylogenetics
IT-Erice, 10–17 March

Imaging infection and immunity
ZA-Pretoria, 20–30 March

Advanced optical microscopy
UK-Plymouth, 3–13 April

Analysis of small non-coding RNAs: From discovery to function
DE-Heidelberg, 6–12 April

Phosphoproteomics
DK-Odense, 14–19 April

Metagenomics: From the bench to data analysis
DE-Heidelberg, 14–20 April

Computational structural biology: From data to structure to function
DE-Hamburg, 15–19 April

Small angle neutron and X-ray scattering from proteins in solution
FR-Grenoble, 6–10 May

Super-resolution and single molecule microscopies in living cells
FR-Montpellier, 13–19 May

High-throughput protein production and crystallization
UK-Harwell, 15–23 May

Exploiting anomalous scattering in macromolecular structure determination
FR-Grenoble, 10–14 June

Electron microscopy and stereology in cell biology
DE-Heidelberg, 16–26 June

Single-cell gene expression analysis
DE-Heidelberg, 29 June–5 July

Developmental neurobiology: From worms to mammals
UK-London, 30 June–13 July

Marine animal models in evo-devo
SE-Fiskebäckskil, 1–12 July

Intravital microscopy, flow cytometry and cell sorting
DE-Berlin, 7–13 July

Multi-level modelling of morphogenesis
UK-Norwich, 14–26 July

Structure, dynamics and function of biomacromolecules by solution NMR
CH-Basel, 20–27 July

Two-photon imaging of brain circuit function
CH-Zurich, 1–7 September

Image processing for cryo-electron microscopy
UK-London, 3–13 September

Imaging of neural development in zebrafish
DE-Karlsruhe, 8–15 September

Current methods in cell biology
DE-Heidelberg, 26 September–4 October

and more!

Workshops

Dr Jekyll and Mr Hyde: Macrophages in inflammation and immunity
FR-Marseille, 17–19 January

Cycling to death
AT-Obergurgl, 23–27 January

The Planctomycetes-Verrucomicrobia-Chlamydiae superphylum: Exceptions to the bacterial definition?
DE-Heidelberg, 28 February–2 March

Physical biology of cancer
IT-Candiolo, 7–10 March

Glycoproteins: From structure to disease
ES-Palma de Mallorca, 24–26 April

Membrane shaping and remodelling by proteins
CN-Xi'an, 16–19 May

Liver and pancreas development, function and disease
GR-Sounion, 26–30 May

Oocyte maturation and fertilization: Lessons from canonical and emerging models
FR-Banyuls-sur-mer, 12–15 June

RUNX transcription factors in development and disease
DE-Wilsede, 16–19 June

Chromosome segregation and aneuploidy
NL-Breukelen, 22–26 June

Integrating omic approaches to host–pathogen interactions
UK-Liverpool, 25–27 June

The molecular life of diatoms
FR-Paris, 25–28 June

Morphogen gradients
UK-Oxford, 26–29 June

AIDS-related mycoses
ZA-Cape Town, 3–5 July

Plant viruses: Green viruses, from gene to landscape
FR-Hyères, 7–11 September

Drosophila cell division cycle
UK-Totnes, 12–16 September

Molecular mechanisms of muscle growth and wasting in health and disease
CH-Ascona, 15–20 September

AAA+ proteins: From mechanisms and disease to targets
DE-Neuss, 16–19 September

RNA 3' ends: Mechanism and biological function in eukaryotic genomes
UK-Oxford, 25–29 September

Mitochondria, apoptosis and cancer 2013 (MAC-2013)
SE-Stockholm, 10–12 October

Semaphorin function and mechanism of action
FR-Cernay-la-Ville, 29–31 October

Cell–cell fusion
IL-Kibbutz Ein Gedi, 3–7 November

Complex systems in immunology
SG-Singapore, 2–4 December

For an up-to-date list of EMBO events please go to events.embo.org

Conferences

Protein transport systems: From structure to function of translocation machines
HR-Dubrovnik, 13–17 April

Eukaryotic RNA turnover: From structural insights to diseases
FR-Strasbourg, 21–24 April

Spatial 2013: From spatial signalling to sensing spatiality
IL-Dead Sea, 24–28 April

Autophagy: Molecular mechanism, physiology and pathology
NO-Hurtigruten, 5–9 May

Chromatin and epigenetics
DE-Heidelberg, 8–12 May

Allosteric interactions in cell signalling and regulation
FR-Paris, 14–17 May

The biology of molecular chaperones: From molecules, organelles and cells to misfolding diseases
IT-Santa Margherita di Pula, 17–22 May

Fission yeast: Pombe 2013
UK-London, 24–29 June

Europhosphatase 2013: Protein phosphatases in health and disease
IL-Rehovot, 7–12 July

Molecular and population biology of mosquitoes and other disease vectors: From basic vector biology to disease control
GR-Kolymbari, 15–19 July

Helicases and nucleic acid translocases: Structure, mechanism, function
UK-Cambridge, 4–8 August

Protein synthesis and translational control
DE-Heidelberg, 8–12 September

Aquatic microbial ecology: SAME13
IT-Stresa, 8–13 September

Meiosis
DE-Radebeul, 14–19 September

Membrane dynamics in endocytosis: Systems dynamics in the endocytic pathway
CH-Villars-sur-Ollon, 29 September–4 October 2013

Ubiquitin and ubiquitin-like proteins: From structure to function
IT-Lucca, 1–5 October

Nuclear structure and dynamics
FR-L'Isle-sur-la-Sorgue, 2–6 October

The DNA damage response in cell physiology and disease
GR-Athens, 7–11 October

Comparative genomics of eukaryotic microorganisms: Complexity patterns in eukaryotic genomes
ES-Sant Feliu de Guixols, 19–24 October

Funding for plenary lectures

EMBO supports plenary lectures given by EMBO Members at major international scientific meetings

EMBO Plenary Lectures deadlines
1 March, 1 June, 1 September,
1 December

ESF | EMBO Symposia

Bacterial networks (BacNet13)
PL-Puutusk, 16–21 March

Molecular bioenergetics of cyanobacteria: Shaping the environment
PL-Puutusk, 15–20 April

Molecular perspectives on protein–protein interactions
PL-Puutusk, 25–30 May

B cells: From bedside to bench and back again
PL-Puutusk, 2–7 September

Integrated insect immunology: From basic biology to environmental applications
PL-Puutusk, 23–28 September

EMBO | FEBS
Lecture Courses

Biomembranes: Molecular architecture, dynamics and function
FR-Cargèse, 10–20 June

Host–microbe interactions
GR-Spetses, 30 August–7 September

Protein interactions, assemblies and human disease
GR-Spetses, 16–26 September

EMBO | EMBL Symposia

New model systems for linking evolution and ecology
DE-Heidelberg, 1–4 May

Cardiac biology: From development to regenerative medicine
DE-Heidelberg, 7–10 June

Seeing is believing: Imaging the processes of life
DE-Heidelberg, 3–6 October

The non-coding genome
DE-Heidelberg, 9–12 October

New approaches and concepts in microbiology
DE-Heidelberg, 14–16 October

Other EMBO events

Lab Management Courses
DE-Leimen, Various dates

The EMBO Meeting 2013
NL-Amsterdam, 21–24 September

EMBO Members Meeting
DE-Heidelberg, 23–25 October

14th EMBO | EMBL
Science and Society Conference
Public and private health: Genomics, medicine and society
DE-Heidelberg, 7–8 November

For further information, please go to
EMBO Courses & Workshops
www.embo.org/programmes/courses-workshops/

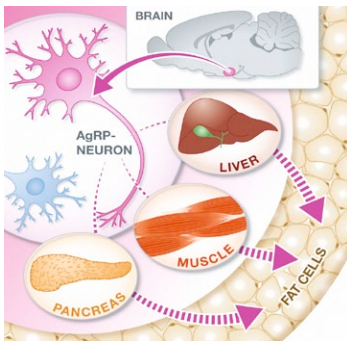
**Organizers
Apply now for
2014 funding
Bi-annual deadlines
1 March, 1 August**

RESEARCH ARTICLE

Brain neurons and diet influence onset of obesity and diabetes in mice

The absence of a specific type of neuron in the brain can lead to obesity and diabetes in mice. However, the outcome depends on the type of diet that the animals are fed. A lack of AgRP-neurons, brain cells known to be involved in the control of food intake, leads to obesity if mice are fed a regular carbohydrate diet. Animals that are deficient in AgRP-neurons but which are raised on a high-fat diet are leaner and healthier. The differences are due to the influence of the AgRP-neurons on the way other tissues in the body break down and store nutrients.

“Susceptibility to obesity and other metabolic diseases is mostly thought to be due to complex genetic interactions and the radical



environmental changes that have occurred during the last century. However, it is not just a question of what you eat and your genetic makeup but also how the body manages to convert, store and use food nutrients,” commented *Serge Luquet*, lead author of the study and a researcher at the French Centre National de la Recherche Scientifique (CNRS) Unit of Functional and Adaptive Biology, Université Paris Diderot, Sorbonne Paris Cité.

Hypothalamic AgRP-neurons control peripheral substrate utilization and nutrient partitioning

Aurélié Joly-Amado, Raphaël GP Denis, Julien Castel, Amélie Lacombe, Céline Cansell, Claude Rouch, Nadim Kassis, Julien Dairou, Patrice D Cani, Renée Ventura-Clapier, Alexandre Prola, Melissa Flamment, Fabienne Foufelle, Christophe Magnan, Serge Luquet

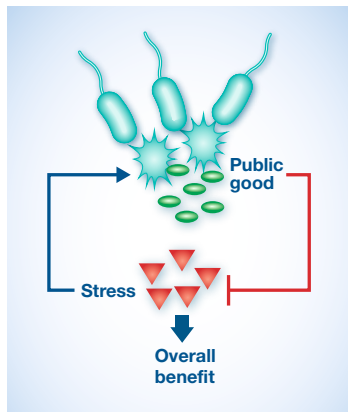
The EMBO Journal

Read the paper:
doi: [emboj.2012.250](https://doi.org/10.1093/emboj.2012.250)

RESEARCH ARTICLE

Engineered bacteria can make the ultimate sacrifice

Scientists have engineered bacteria that are capable of sacrificing themselves for the good of the bacterial population. These altruistically inclined bacteria can be used to demonstrate the conditions where programmed cell death becomes a distinct advantage for the survival of the bacterial population.



“We have used a synthetic biology approach to explicitly measure and test the adaptive advantage of programmed bacterial cell death in *Escherichia coli*,” said *Lingchong You*, senior author of the study and an associate professor at the Department of Biomedical Engineering, Duke University, and the Duke Institute for Genome Sciences & Policy. “The system is tunable which means that the extent of altruistic death in the bacterial population can be increased. We are therefore able to control the extent of programmed cell death as well as test the benefits of altruistic death under different conditions.” The lead author of the study is *Yu Tanouchi*, a graduate student in the Department of Biomedical Engineering. *Anand Pai* and *Nicolas Buchler* also contributed to the work.

Programming stress-induced altruistic death in engineered bacteria

Yu Tanouchi, Anand Pai, Nicolas E Buchler, Lingchong You

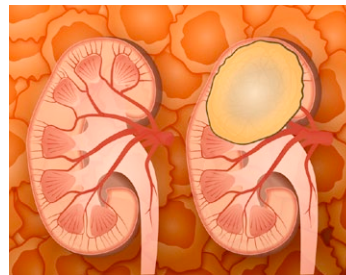
Molecular Systems Biology

Read the paper:
doi: [10.1038/msb.2012.50](https://doi.org/10.1038/msb.2012.50)

RESEARCH ARTICLE

Cancer stem cells isolated from kidney tumours

Scientists have isolated cancer stem cells that lead to the growth of Wilms’ tumours, a type of cancer typically found in the kidneys of young children. The researchers have used these cancer stem cells to test a new therapeutic approach that one day might be used to treat some of the more aggressive types of this disease.



“In earlier studies, cancer stem cells were isolated from adult cancers of the breast, pancreas and brain but so far much less is known about stem cells in paediatric cancers,” remarked Professor *Benjamin Dekel*, head of the Pediatric Stem Cell Research Institute and a senior physician at the Sheba Medical Center and the Sackler School of Medicine at Tel Aviv University, Israel. “Cancer stem cells contain the complete genetic machinery necessary to start, sustain and propagate tumour growth and they are often referred to as cancer-initiating cells. As such, they not only represent a useful system to study cancer development but they also serve as a way to study new drug targets and potential treatments designed to stop the growth and spread of different types of cancer.”

Prospective isolation and characterization of renal cancer stem cells from human Wilms’ tumor xenografts provides new therapeutic targets

Naomi Pode-Shakked, Rachel Shukrun, Michal Mark-Danieli, Peter Tsvetkov, Sarit Bahar, Sara Pri-Chen, Ronald S. Goldstein, Eithan Rom-Gross, Yoram Mor, Edward Fridman, Karen Meir, Marcus Magister, Naftali Kaminski, Amos Simon, Victor S. Goldmacher, Orit Harari-Steinberg, Benjamin Dekel

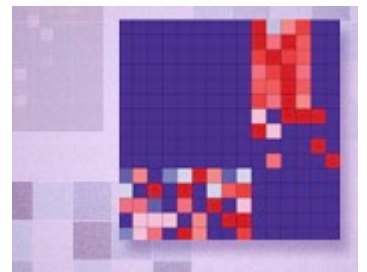
EMBO Molecular Medicine

Read the paper:
<http://onlinelibrary.wiley.com/doi/10.1002/emmm.201201516/full>
doi: [10.1002/emmm.201201516](https://doi.org/10.1002/emmm.201201516)

RESEARCH ARTICLE

Scientists discover new diagnostic markers for Kawasaki disease

Researchers have discovered proteins in human urine that offer new opportunities for the diagnosis, study and maybe even the treatment of Kawasaki disease. Mass spectrometry-based proteomic analysis of the human urine proteome, the entire set of proteins found in human urine, uncovered molecular markers that offer significant improvements for the diagnosis of the disease.



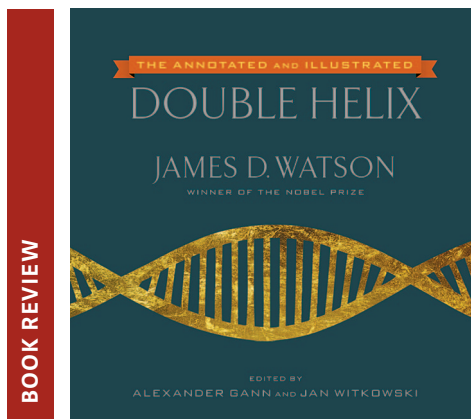
“There is no diagnostic test for Kawasaki disease. Currently available diagnostic markers lack the specificity and sensitivity needed for reliable detection of the disease which has motivated our decision to use proteomics to identify new, improved biomarkers,” said *Susan Kim*, a rheumatologist at Boston Children’s Hospital and an instructor at Harvard Medical School. “Kawasaki disease is often difficult to diagnose and is the most prevalent cause of acquired childhood heart disease in the developed world. Failure to detect it can lead to coronary artery aneurysms and in some cases death, particularly in children who are not diagnosed early enough.”

Urine proteomics for discovery of improved diagnostic markers of Kawasaki disease

Alex Kentsis, Andrew Shulman, Saima Ahmed, Eileen Brennan, Michael C. Monuteaux, Young-Ho Lee, Susan Lipsett, Joao A. Paulo, Fatma Dedeoglu, Robert Fuhlbrigge, Richard Bachur, Gary Bradwin, Moshe Arditi, Robert P. Sundel, Jane W. Newburger, Hanno Steen, Susan Kim

EMBO Molecular Medicine

Read the paper:
<http://onlinelibrary.wiley.com/doi/10.1002/emmm.201201494/abstract>
doi: [10.1002/emmm.201201494](https://doi.org/10.1002/emmm.201201494)



The double helix

Published to mark the 50th anniversary of the Nobel Prize for Watson and Crick's discovery of the structure of DNA 60 years ago, an annotated and illustrated edition of this classic book gives new insights into the personal relationships between **JAMES WATSON**, **FRANCES CRICK**, **MAURICE WILKINS**, and **ROSALIND FRANKLIN**, and the making of a scientific revolution.

In his 1968 memoir, *The Double Helix*, the brash young scientist *James Watson* chronicled the drama of the race to identify the structure of DNA, a discovery that would usher in the era of modern molecular biology. *Alexander Gann* and *Jan Witkowski* have built upon this gripping narrative, juxtaposing Watson's racy account with the observations of other protagonists and offering an enhanced perspective on the now legendary story of Watson and Crick's discovery.

Gann and Witkowski have mined many sources, including a trove of newly discovered correspondence belonging to *Francis Crick* (misplaced some fifty years ago) and the archives of *Maurice Wilkins*, *Linus Pauling*, *Rosalind Franklin*, and Watson and Crick themselves. Also in this edition are Watson's own account of the Nobel Prize award and celebrations, appendixes that include an account of the book's controversial first publication, and a chapter dropped from the original edition, as well as an extraordinary assortment of

documents and photographs – many never before published. This wealth of material contributes depth and color to Watson's novelistic text and places events in their contemporary scientific and social context.

The Library of Congress recognized *The Double Helix* as "A Book That Shaped America." This new edition adds depth and richness to one of the most famous stories in science.



Mammalian epigenetics in biology and medicine

The **ROYAL SOCIETY** has recently published a special theme issue on mammalian epigenetics, compiled and edited by **FUMITOSHI ISHINO**, **YOICHI SHINKAI** and **EMMA WHITELAW**. The publication reviews the epigenetics of mammalian development, the molecular mechanisms of DNA methylation in the mammalian life cycle, and epigenetics in reprogramming technologies, human health and medicine.

Epigenetics is the study of gene expression changes that occur without alteration of the primary DNA sequence but which are relatively stable over a lifetime. This area of research is crucial to understand the relationship between the genotype and the phenotype of living organisms.

This special issue on epigenetics examines the progress that has been made in understanding

well-characterized epigenetic phenomena, such as genomic imprinting, X-inactivation and epigenetic variation. It also provides a review of the underlying molecular mechanisms of epigenetics, such as DNA methylation and histone modification.

Recent progress on gene expression control in animals produced by somatic cloning and other reproductive technologies and in pluripotent cells,

such as primordial germ cells, embryonic stem cells and induced pluripotent stem cells, is also examined. The special issue also provides new insights into mammalian development and regenerative medicine.

The print issue of *Mammalian epigenetics in biology and medicine* can be ordered online at http://rstb.royalsocietypublishing.org/site/2013/mammalian_epigenetics.xhtml



Fascinated by plants

The Second International Fascination of Plants day will take place on 18 May 2013. The event, which builds on the success of the inaugural activities in 2012 (see also EMBOencounters Winter issue 2011/2012), serves to get as many people as possible around the world fascinated by plants. The activities are designed to inform individuals about the

importance of plant science for agriculture, in sustainably producing food, as well as for horticulture, forestry, and all of the non-food products such as paper, timber, chemicals, energy, and pharmaceuticals. The role of plants in environmental conservation is also emphasized. Further details about the 2013 event are available at www.plantday12.eu

Longitudinal section of a fern crozier, *Asplenium ellipticum*, by Olivier Leroux
National University of Ireland, Galway



© BIOSS Centre for Biological Signalling Studies

BIOSS Centre for Biological Signalling Studies at a glance:

- Founded: 2007
- Total number of researchers: 39 members and 64 associate members
- Research groups: 43
- Scientific publications 2012: 190
- Total expenditure 2012: 4.2 million Euros of competitive funding from the German Research Foundation
- Competitive funding: 28.1 million Euros from the German Research Foundation for the period November 2012 to October 2017
- www.bioss.uni-freiburg.de

Deciphering life at the BIOSS Centre for Biological Signalling Studies

The German Research Foundation recently awarded an additional five years of funding to the **BIOSS CENTRE FOR BIOLOGICAL SIGNALLING STUDIES** at the University of Freiburg, Germany. Researchers at the centre develop strategies and tools to decipher the signals involved in the regulation of the molecular processes of life that occur in and between cells. Many of these events have potential medical applications, for example finding ways to control the molecular signals that occur during the development and growth of cancer tumour cells.

The timing of the award from the German Research Foundation coincided with the official opening of a new research building for the centre. “We will use the funding to support existing and new research programs, establish new professorships and junior research groups at the University of Freiburg, and fully equip our new research building, the Signalhaus Freiburg,” said the Scientific Director of BIOSS, professor and immunologist *Michael Reth*. Strategically, no fundamental changes to the structure or research goals of the Freiburg Cluster of Excellence BIOSS are planned with the new funding. The centre will instead build on previous achievements and complement them with new approaches. “The decision to further fund BIOSS shows that we have done a lot of things right in the past years,” added Reth.

Two new areas of research will include studies of the signals in tumour development and a project to look at the nanobiology of the plasma membrane. Both areas will extend the existing research programmes at the cluster and integrate synthetic biology and engineering into a single research endeavour.

ERC advanced grant award. The Scientific Director of BIOSS also has another reason for celebration. In November 2012, Reth and his team were awarded a five-year 2.24 million Euros advanced grant from the European Research Council (ERC) to investigate biological membranes at the nanometer scale. Reth and colleagues are studying the structure and function of receptors on the surface of immune cells. They will use the funding from the ERC to continue developing the first ever methods for studying the organization of receptors on membranes on a scale in the range between 10 nm and 100 nm.

In addition to being Scientific Director of BIOSS, Reth is professor of molecular immunology at the Institute of Biology III at the University of Freiburg and head of a research group at the Max Planck Institute of Immunobiology and Epigenetics in Freiburg.

“In the years ahead, BIOSS will continue to develop its research programmes and further establish itself as a centre for excellence in biological signalling research,” concluded Reth.



Michael Reth

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EMBO Poster Prize winner

Congratulations to the following winner:

Adejumo Olamide Hakeem

Olabisi Onabanjo University Teaching Hospital
Ogun State, Nigeria

**The impact of religion and culture on
diabetic care in Nigeria**

Presented at EMBO | EMBL Symposium
Diabetes and Obesity
Heidelberg, Germany
13–16 September 2012

molecular systems biology

Review Series

Systems biology technologies



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www.nature.com/msb/focus/systems_technologies

New prize for cancer research

The **BEUG FOUNDATION FOR METASTASIS RESEARCH** is accepting applications for the **METASTASIS PRIZE**. Scientists are still trying to understand how cancer spreads from the place where it first arises to other locations in the body, a process that can have dramatic consequences for the health of cancer patients. The Metastasis Prize is meant to encourage and help introduce new approaches to impede cancer metastasis.

The Metastasis Prize is awarded in memory of Hartmut Beug and his efforts to understand the causes of cancer and how it spreads in the body. In the 1970s and 1980s, *Beug* identified new pairs of oncogenes in avian oncogenic viruses while working at the German Cancer Research Center (DFKZ) and the European Molecular Biology Laboratory (EMBL) in Heidelberg, Germany. He was among the first scientists to put forward the idea that the transformation of hematopoietic cells into cancer cells requires the cooperation of growth factor signaling pathways and the deregulation of transcription. *Beug* later moved to the Institute for Molecular Pathology (IMP) in Vienna, Austria, to continue his research. He became a member of EMBO in 1983. The importance of how groups of oncogenes interact to bring about the development and spread of cancer was a consistent theme of his later work.

The 2013 Metastasis Prize will be awarded to a scientist who presents an original project on cancer metastasis. The prize provides financial

assistance to obtain the preliminary data that could help to attract further support from institutions or companies interested in developing new approaches to restrict metastasis. Proposals should be submitted by 25 March 2013.

Further details and instructions for how to apply are available at

www.beugstiftung-metastase.org

Beug Stiftung



für Metastasierungsforschung

DEADLINE FOR PROPOSALS 25 March

Opportunities for systems and computational biology at the Weizmann Institute

THE WEIZMANN INSTITUTE will open a new masters' degree programme for systems and computational biology in the next academic year. The program will feature a diverse curriculum of course as well as extensive opportunities for cutting-edge research and education with leading scientists.

The Weizmann Institute recently held a two-day retreat to bring together its rapidly growing systems biology community and announce the new masters' degree programme. The community now comprises 18 research groups and more than 150 people from all faculties and departments at the Weizmann institute.

The event, which was organized by Professor *Eran Segal*, is in its third year and an established

part of the institute's scientific calendar. Each group presented its recent research highlights and this was followed by a lively description of everyday life in the laboratories that participate in the systems biology research network.

One of the highlights of the event was a competition that was announced on the first day. Students were asked to form teams of two individuals from two different laboratories, design a joint collaborative project and present it on the second day of the meeting. The reward was funding for one year from the recently established Azrieli Center for Systems Biology at the Weizmann Institute, which is led by Professor and EMBO Member *Naama Barkai*.

25 groups presented research projects and eight were selected for funding.

Students who were not funded this year will be invited to present their results at the 2013 retreat where they can compete for twice the currently awarded funding.

Institute of Functional Genomics, Lyon, moves to new building

Researchers at The Institute of Functional Genomics in Lyon, France, moved into a new state-of-the-art building in October 2012. The new 4500-m² research facility is located in the biotechnology district of the south of Lyon.

“The move to the new building is a significant milestone in the development of our young institute,” said Professor *Vincent Laudet* Director of The Institute of Functional Genomics and Professor of Biology at the Ecole Normale Supérieure de Lyon. “The design of the institute and the additional research space will allow us to fulfill our research strategy and promote the close interaction of scientists from different disciplines that we see as an essential component of the scientific culture we are striving for.”

THREE FOCUS AREAS

The strategy of The Institute of Functional Genomics focuses on three research areas – developmental biology, evolutionary science, and integrated physiology. The institute is organized into independent research teams each led by a principal investigator who has the freedom to define their own research programme. Interaction between the teams from widely different scientific backgrounds is strongly encouraged.

EMBO Member *Jacques Samarut* is the founding director of The Institute of Functional Genomics. He helped to establish the institute before Professor Laudet took the reins as director in 2008. Said Samarut: “The Institute of Functional Genomics has made great progress over the years and we are confident that collaborations will be

fostered in this environment which will lead to promising new integrative approaches to the study of biology.” The Institute of Functional Genomics is jointly managed by the Ecole Normale Supérieure de Lyon, the Centre National de la Recherche Scientifique and the Université Claude Bernard Lyon. The institute is also affiliated to the Institut National de la Recherche Agronomique.

Research at The Institute of Functional Genomics examines how living organisms function, develop and evolve, and how the genomes of organisms control these fundamental processes and allow them to adapt to their environment. Scientists at the institute also focus on what happens when these processes go wrong. In humans, defects in molecular processes may lead to congenital abnormalities, metabolic disorders or cancer. Research groups at the institute are also interested in understanding how domestic species have adapted to the environment, and how environmental pollutants affect health.

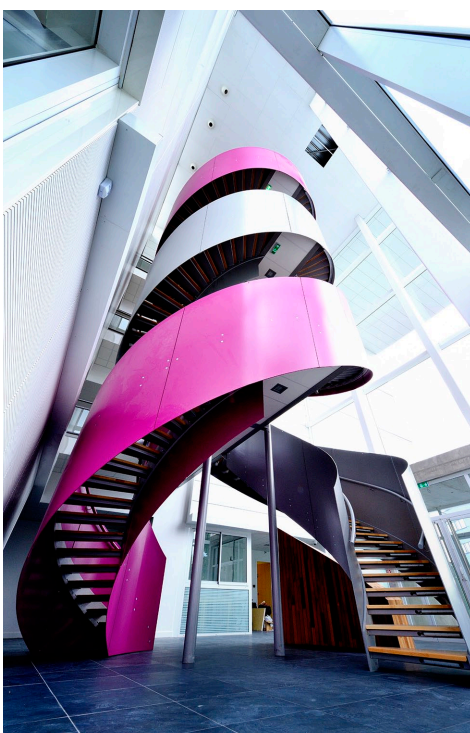
“We recently added five new research groups to our programme areas. Our research interests continue to grow and we continue to look for talented scientists to establish new groups, particularly with expertise in bioinformatics and systems biology, to reinforce those axes that we view as essential for future developments in biology,” added Laudet.



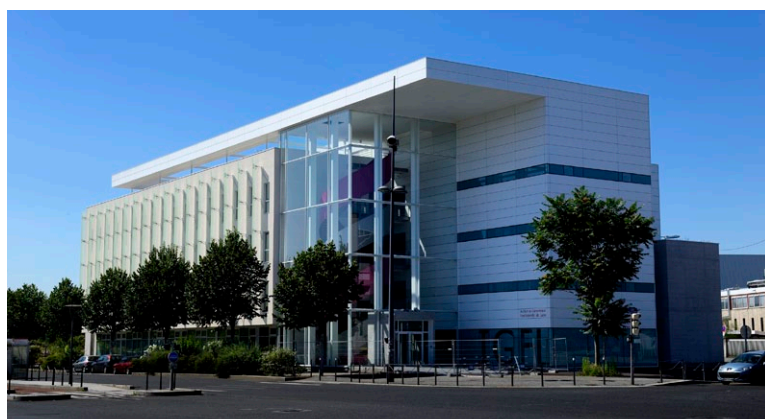
© Institute of Functional Genomics, Lyon

Institute of Functional Genomics, Lyon at a glance:

- Founded: 2007
- Total number of researchers: 123 staff including 63 researchers, 27 doctoral students, 26 technical staff, and interns
- Research groups: 13
- Scientific publications 2012: 33
- Total expenditure 2012: 4.3 Million Euros
- Competitive funding (2012): 2 Million Euros
- igfl.ens-lyon.fr



© Institute of Functional Genomics, Lyon



Awards of excellence

EMBO MEMBERS

Royal Irish Academy Gold Medals 2012

Luke O'Neill was the recipient of one of two Royal Irish Academy Gold Medals for 2012. Professor O'Neill from Trinity College Dublin, Ireland, was recognised for his outstanding contributions in the fields of immunology and inflammatory diseases such as rheumatoid arthritis. The Royal Irish Academy Gold Medals are awarded to two outstanding academics each year and recognised as "a truly national expression of celebration for scholarly achievement."

Gottfried Wilhelm Leibniz Prize 2013

EMBO Member **Ivan Dikic** from the University of Frankfurt is to receive the Leibniz Prize 2013 – Germany's most prestigious research award worth 2.5 million euros. He was recognized for his essential contributions to understanding the function of the protein ubiquitin complex and its role in molecular processes like DNA repair and congenital immunity. The Leibniz Prize will be awarded to a total of eleven scientists and presented on 19 March 2013 in Berlin.

Marcel Benoist Prize 2012

Michael N. Hall, professor of Biochemistry at the Biozentrum of the University of Basel, received this award for his outstanding research in the field of cell biology on cell growth and carcinogenesis. The Marcel Benoist prize is the oldest scientific award in Switzerland and is regarded as the highest recognition for outstanding achievements in the sciences and the humanities.

Inserm Grand Prize 2012

The recipient of the 2012 Inserm Grand Prize is **Philippe Sansonetti** from the Institut Pasteur in Paris, in recognition of his research on microbial infection. The grand prize is awarded each year to honour a member of the scientific research community whose work has contributed to advancing knowledge of human physiology, therapeutics and health in general.

Inserm International Prize 2012

The recipient of Inserm's International Prize is **Ingrid Grummt** of the German Cancer Research Centre in Heidelberg in recognition of her epigenetics research on the molecular mechanisms that regulate gene expression.

Howard Hughes Medical Institute (HHMI) Senior International Research Scholars

Pascale Cossart, Alberto R. Kornblihtt, Philippe Sansonetti and Dominique Soldati-Favre were among the thirteen life scientists selected as HHMI Senior International Research Scholars in 2012. Each of them will receive a grant of 100,000 US-dollars per year over five years, and will present their research at scientific meetings held at HHMI. The awards support scientists working outside the United States who have made significant contributions to fundamental research in the biological sciences.

US National Medal of Science

Associate Member **Leroy Hood** from the Institute for Systems Biology in Seattle, United States, was among the twelve scientists recognized with the National Medal of Science, the highest scientific honour in the United States. Hood received the award from President Obama in a White House ceremony in early 2013.

European Federation of Medicinal Chemistry (EFMC) 2012 Nauta Award for Pharmacology

Alexander Levitzki, professor emeritus at the Hebrew University of Jerusalem, Israel, is the recipient of the 2012 Nauta Award for outstanding achievements in the field of Medicinal Chemistry. By awarding the Nauta prize, the EFMC acknowledges and recognizes outstanding achievements in the advancement of Medicinal Chemistry and the development of international organizational structures in this field.

Erwin Schrödinger Prize 2012

Jürgen Knoblich, Senior Scientist and Deputy Scientific Director at the Institute of Molecular Biology in Vienna, Austria, received the 2012 Erwin Schrödinger Prize of the Austrian Academy of Sciences for his research on the molecular mechanisms responsible for asymmetric stem cell division. The Erwin Schrödinger Prize is an annual award for lifetime achievement by Austrians in the fields of mathematics and natural sciences.

Universidad de la República Doctor Honoris Causa

Giorgio Bernardi from the Roma Tre University received a Honorary Degree (*Doctor Honoris Causa*) from the Universidad de la República in Montevideo, Uruguay, in October 2012.

Events

EMBO MEMBERS & FELLOWS

EMBO Member **Frank Grosveld** is one of the organizers of the conference **Epigenetics & Chromatin: Interactions and processes** to be held at the Harvard Medical School in Boston, United States, on 11–13 March 2013. More at: www.epigenetics-sandchromatin.com/conf

Cellular Polarity – From Mechanisms to Disease is the title of a two-day scientific discussion meeting at the **Royal Society London on 15–16 April 2013**. The conference is free to attend. More at: <http://royalsociety.org/events/2013/cellular-polarity/>

Fellow **Alessandra Cambi** is co-organizing the meeting **Visualizing signaling nanoplat-forms at a higher spatiotemporal resolution** that will be held in **Barcelona on 29–31 May 2013**. Topics covered include Superresolution Techniques: From Methods to Data Analysis; Lipids, Protein Nanoislands and the Role of the Cytoskeleton; and Dynamics in Signalling Nanoplat-forms. Detailed information and registration available at: www.icrea-signano2013.com

Ioannis Trougakos, Vassilis Gorgoulis and EMBO Members **Thanos Halazonetis** and **Luca Scorrano** are organizing an International Workshop on **Ageing and Cancer Cell Biology**. The meeting, which will take place in **Athens, Greece on 27–29 June 2013**, brings together experts from Europe and the USA to discuss the molecular mechanisms at the interface of ageing and cancer. Topics will include senescence, DNA replication stress and ageing in model organisms and humans. The venue of the workshop is the amphitheater of the spectacular new Acropolis Museum (www.thacropolismuseum.gr/en). More at: www.ageing-cancer.inspire.uoa.gr

A good read – Publications from the EMBO Community

EMBO MEMBERS, YOUNG INVESTIGATORS & FELLOWS

Obesity-induced overexpression of miR-802 impairs glucose metabolism through silencing of Hnf1b

Jan-Wilhelm Kornfeld (EMBO Fellow), Jens C. Brüning (EMBO Member), Markus Stoffel (EMBO Member) *et al.*

Nature | 7 February 2013

Genetic identification of C-fibres that detect massage-like stroking of hairy skin *in vivo*

Sophia Vrontou (EMBO Fellow) *et al.*

Nature | 31 January 2013
doi: 10.1038/nature11810

Molecular signatures of G protein-coupled receptors

M. Madan Babu (EMBO Young Investigator) *et al.*

Nature | February 2013
doi: 10.1038/nature11896

Spatial regulation of VEGF receptor endocytosis in angiogenesis

Masanori Nakayama (EMBO Fellow) *et al.*

Nature Cell Biology | 27 January 2013
doi:10.1038/ncb2679

Structural basis for 5'-triphosphate viral RNA recognition by human IFIT proteins

Andreas Pichlmair (EMBO Fellow), Giulio Superti-Furga (EMBO Member) *et al.*

Nature | 13 January 2013
doi:10.1038/nature11783

Molecular mechanism of action of microtubule-stabilizing anti-cancer agents

Michel O. Steinmetz (EMBO Member) *et al.*

Science | 3 January 2013
doi:10.1126/science.1230582

Evolutionary conservation of codon optimality reveals hidden signatures of cotranslational folding

Sebastian Pechmann (EMBO Fellow) *et al.*

Nature Structural & Molecular Biology | 23 December 2012
doi: 10.1038/nsmb.2466

Systematic genetic interaction screens uncover cell polarity regulators and functional redundancy

Bruno Thomas Fievet (EMBO Fellow), Julie Ahringer (EMBO Member) *et al.*

Nature Cell Biology | 16 December 2012
doi:10.1038/ncb2639

Multiple glutathione disulfide removal pathways mediate cytosolic redox homeostasis

Bruce Morgan (EMBO Fellow) *et al.*

Nature Chemical Biology | 16 December 2012
doi:10.1038/nchembio.1142

Centralspindlin links the mitotic spindle to the plasma membrane during cytokinesis

Mark Petronczki (EMBO Young Investigator) and Sergey Lekomtsev (EMBO Fellow) *et al.*

Nature | 12 December 2012
doi:10.1038/nature11773

Ubiquitin chain conformation regulates recognition and activity of interacting proteins

David Komander (EMBO Young Investigator) *et al.*

Nature | 2 December 2012
doi: 10.1038/nature11722

Metabolic control of adult neural stem cell activity by Fasn-dependent lipogenesis

Sebastian Jessberger (EMBO Young Investigator) *et al.*

Nature | 2 December 2012
doi:10.1038/nature11689

Appointments

EMBO MEMBER

Thomas Graf, leader of the Hematopoietic Stem Cell Biology and Differentiation group at the Centre for Genomic Regulation in Barcelona, Spain, has been appointed associated editor of the journal *Stem Cell Reports*. The new online, open-access journal is an initiative of the International Society for Stem Cell Research (ISSCR) and Cell Press. The first issue will be published in June 2013.

Douglas Higgs was appointed new director of the Medical Research Council Weatherall

Institute of Molecular Medicine (WIMM) at the University of Oxford. Higgs, formerly director of the MRC Molecular Haematology Unit at the WIMM, took up the role in December 2012 after the retirement of Sir Andrew McMichael. "A successful institute continually needs to recruit exciting new scientists, and I plan to recruit a new chair of molecular medicine and new MRC-funded research fellows over the next few years," said professor Higgs. "I also plan to strengthen our links to the clinical service in the adjacent John Radcliffe Hospital and develop key aspects of the WIMM

infrastructure that will enable our researchers to apply state-of-the-art technology to all aspects of our research."

Sarah Teichmann from the MRC Laboratory of Molecular Biology in Cambridge will move to the European Bioinformatics Institute (EBI) in Hinxton, UK, with a joint appointment at the Wellcome Trust Sanger Institute as of February 2013. It is the first such joint appointment between the two institutes in Hinxton.

Next issue

The next *EMBOencounters* issue – **Summer 2013** – will be dispatched in **July 2013**. Please send your suggestions, contributions and news, to communications@embo.org by **6 May 2013**.