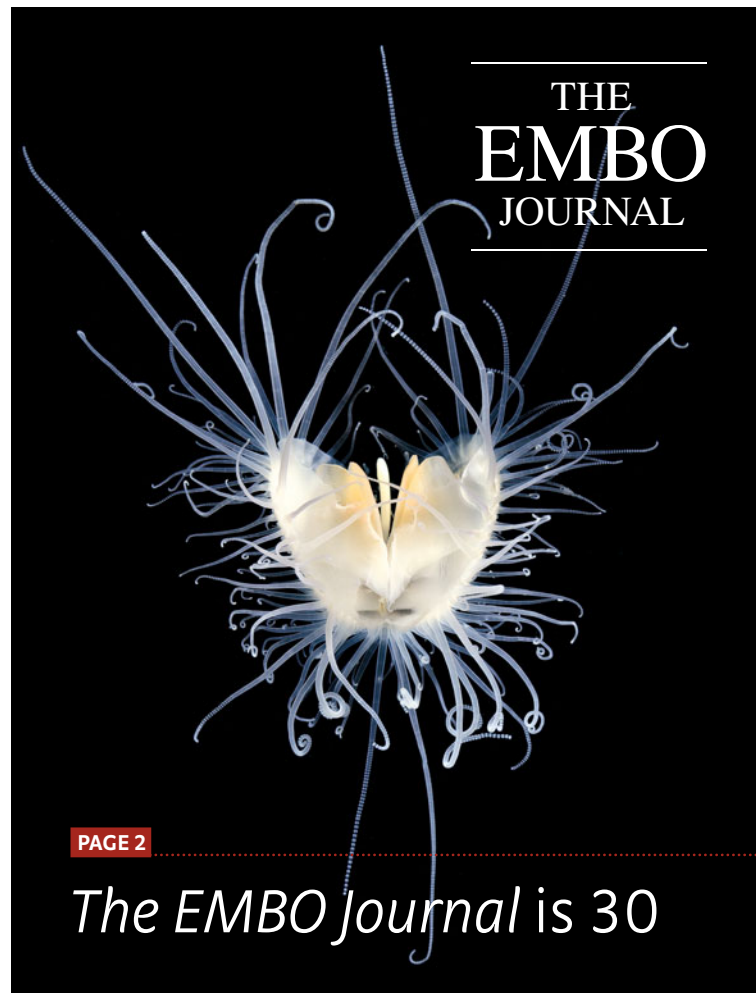


# ISSUE 21 EMBO *encounters*



The camera instead  
of test tubes

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*The EMBO Journal is 30*



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A network of excellence

## EpiGeneSys: Epigenetics meets systems biology

**4DCellFate** A project funded by the European Commission Seventh Framework Programme wants to investigate how protein complexes regulate differentiation in embryonic stem cells.

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**LECTURE** Denis Noble, President of the International Union of Physiological Sciences and Professor Emeritus of Oxford University, was in Heidelberg on 28 February to give a lecture on systems biology at the Print Media Academy.

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**Meeting of minds** Are scientists and artists driven by a similar kind of deeply rooted curiosity? Visual artists and researchers involved in the MitoSys project want to find out.

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# The EMBO Journal is 30

A 30th anniversary invites reflection on change and progress. Here senior editors past and present look back on the early days of **THE EMBO JOURNAL**.<sup>1</sup>

**John Tooze.** “The EMBO Council of the day felt that a journal would help cement the EMBO membership, and, if successful, it would market the name of EMBO to a worldwide audience and possibly generate income.

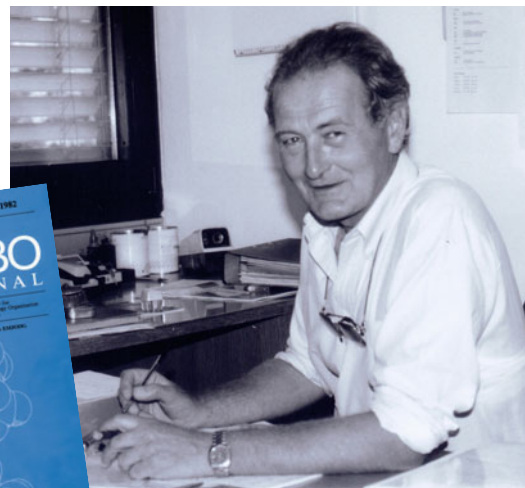
But would we get enough high-quality manuscripts to produce a journal that would add lustre to EMBO’s name or would we drift into mediocrity and financial inconsequentiality?

In the earliest years, I was often very anxious about manuscript numbers and quality. I would phone leading EMBO members to plead with them for the papers they were sending to *Cell*, *Nature*, *Science*, or at least to give us first refusal on those that *Cell* and *Nature* had declined. A common reply was “John, we’d happily send you our best but our grad students and postdocs insist on shooting for the stars.” I suspect that remains the situation now. With time, however, the basis

for worry about manuscript flow changed from too few to too many, while the quality issue remained.

I remember during a family holiday standing in a telephone box in a rain storm on the Isle of Skye suggesting referees based on titles and authors of new manuscripts. There was no editorial back up in the early years until Iain agreed to share responsibility.

And then there were the very many phone calls from rejected authors. After the preliminaries I would say “Nothing you are going to tell me will change the rejection decision but I’ll listen if you want me to.” Twenty minutes or so later the caller in Europe or the USA would wind down.



**John Tooze**  
Rockefeller University  
Founding Editor  
1982–2003



But enough of 30 years ago when everything was paper, post and courier. Today, with instantaneous electronic communication I don’t envy my successors facing those daily myriads of e-mails.”



**Iain Mattaj**  
Director General of the  
European Molecular Biology Laboratory  
Executive Editor  
1990–2004

**Iain Mattaj.** “When I joined *The EMBO Journal* it really was a different age. There were no targets, and although statistics on acceptance rates and impact factors were collected retrospectively there was minimal discussion of how we should act on

them. The referee databases were in our heads. I benefitted enormously in that respect from being a voracious journal reader and seminar attendee, and by being at The European Molecular Biology Laboratory, where seminars and meetings of all sorts were frequent and generally excellent and I was very gratified by the willingness of referees to help both the authors and the journal.

John Tooze and I were active editors, by which I mean we considered the papers and the

reports and took decisions. This meant that when authors phoned to complain about the decision we could have a science-based discussion on why the paper was rejected and that discussion satisfied all but the most obdurate of the callers. As the editorial office got bigger over the next dozen years, and as other journals transformed their editorial offices more and more into postal relays between authors and referees, I tried to instill this attitude to editorial work in the incoming editors. It is still a major principle of the current and laudable *EMBO Transparent Editorial Process* introduced by Hermann Bujard and Pernille Rørth when they were Director of EMBO and Editor of *The EMBO Journal*, respectively.

## The EMBO Journal editorial team

### David del Álamo (since 2011)

David received his PhD from the Autonomous University of Madrid, studying proximal-distal patterning in *Drosophila* with Fernando Díaz-Benjumea. As a postdoc, he continued working with *Drosophila* in Marek Mlodzik’s lab (Mount Sinai School of Medicine, New York) on the mechanisms of epithelial planar cell polarity generation, and with François Schweisguth (Institut Pasteur, Paris) on the modulation of Notch signalling in lateral inhibition.

**Focus areas**  
Developmental biology  
Cell and tissue architecture  
Microbiology

### Isabel Arnold (since 2005)

Isabel received her PhD from the University of Munich for her work on mitochondrial protein sorting in the lab of Walter Neupert. As a postdoctoral researcher, she worked in the lab of Fiona Watt at the Imperial Cancer Research Fund in London on keratinocyte differentiation, and in the lab of Thomas Langer at the University of Cologne on mitochondrial proteases and peptide transport.

**Focus areas**  
Membranes and transport  
Cell death  
Cellular metabolism  
Protein synthesis and folding

### Céline Carret (since 2011)

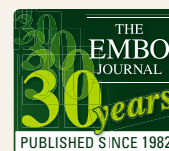
Céline completed her PhD at the University of Montpellier, France, on parasitic protozoa of the genus *Babesia*. After a postdoc on lymphocyte signalling at the Babraham Institute in the lab of Denis Alexander (Cambridge), she worked on functional genomics and molecular parasitology of malaria at the Sanger Institute (Cambridge) and subsequently at the Instituto de Medicina Molecular in Gunnar Mair’s lab (Lisbon).

**Focus areas**  
Genomic and computational biology  
Host–pathogen interactions

### Karin Dumstrei (since 2005)

Karin received her PhD from the University of California Los Angeles where she studied DE-cadherin mediated cell adhesion in *Drosophila* in the lab of Volker Hartenstein. She then went to the Max Planck Institute for Biophysical Chemistry in Göttingen where she worked on primordial germ cell migration in zebrafish with Erez Raz.

**Focus areas**  
Immunology  
Neuroscience  
Plant biology



**Pernille Rørth.** “Toward the end of 2004, it was getting clear that even Iain was perhaps a mere mortal – not finding the time to run *The EMBO Journal* along with everything else at EMBL. EMBO Director Frank Gannon asked me if I would be willing to take over based on one necessary characteristic – a general and broad interest in the areas of science touched by molecular biology. It was to be a steep learning curve and five very, very interesting years.

The editorial office had four full-time editors to deal with about 3000 manuscripts every year. The editorial board, populated with experts that really cared about the journal and its quality, and a deep referee database were already in place. The role of the executive editor was “simply” to step in when needed. I chose to be very involved with the editors – working with them, the senior advisors and the board on a daily basis.

### Pernille Rørth

Research Director at the  
Institute of Molecular and  
Cell Biology, A\*STAR,  
Singapore

Executive Editor  
2005–2009



One role was to help editors in conflicts with authors and reviewers. Growing up as a younger sister, I learned how to manage bullies. I was once asked whether being a bully or not related to the number of X chromosomes. The evidence does not support this – but

there are other correlations best left unspecified.

What was the most gratifying aspect of the work? Clearly the good science; also working with the thoughtful and dedicated editors. As a publishing author and a reviewer, it was not hard to empathize with all the points of view – but resolving all this to a satisfactory decision – well, that was the job. Getting the 3rd perspective – that of the editor – helps.

Although *The EMBO Journal* is ‘all grown up’ now at 30, it continues to have a leading role in the world of science publishing. I wish the next generation of authors, reviewers and editors of *The EMBO Journal* a most impactful future.”

**Bernd Pulverer.** “My research career started at a time when molecular biology was rapidly expanding beyond the nucleus to encompass fields such as signal transduction and the cell cycle. From the start, *The EMBO Journal* was very present in the life of a fledging PhD student as a beacon of quality – a must-read journal. As the journal matured through its teens, John Tooze and later Iain Mattaj presided over the selection process with their encyclopedic knowledge. I well remember their formidable presence in the research community alongside the likes of Ben Lewin at *Cell* and John Maddox at *Nature*. As a young adult the journal experienced a growth burst, leading to a more diversified editorial office. The exceptional dedication and care of the editorial staff at *The EMBO Journal* and their proximity to the scientific community cultivated under Pernille Rørth stands out to me as a defining characteristic of the adult journal.

Looking to the next 30 years, molecular biology will continue to spread to every part of biology, biotechnology and medicine. The journal will reflect this in its broadening scope and an emphasis on physiological relevance, as well as global reach. The exchange of validated scientific information via the traditional research paper will remain at the heart of the scientific

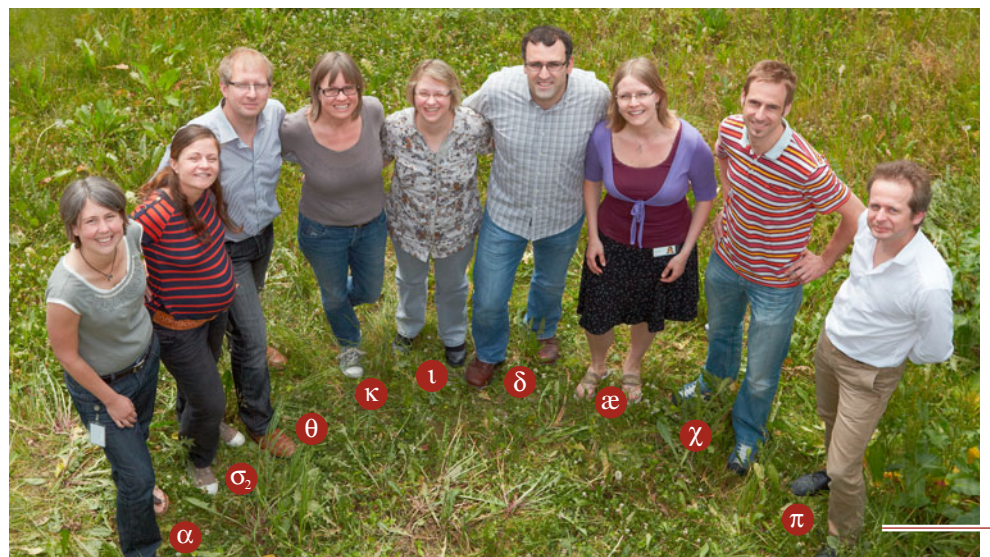
process. However, we aim to play a leading role in embracing online technologies and publication policies that will transform the paper from a static document of research achievement to a research tool containing data that can be readily accessed, reproduced and reused. We will continue to evolve an optimized editorial process by extending the *EMBO Transparent Editorial Process* principles launched by Pernille. The feedback and advice of the EMBO Membership is crucial in continuously improving the publishing process.

We aim to do justice to EMBO’s vision for the journal to publish papers of exceptional significance that are based on rigorous data and thoughtful analysis. I hope *The EMBO Journal* continues to look as fresh and attractive as ever in its 30s.”

### Bernd Pulverer $\pi$

Head of Scientific Publications, EMBO

Chief Editor 2010–present



### The EMBO Journal editorial team

#### $\alpha$ Anne Færch Nielsen (since 2012)

Anne received her PhD from Aarhus University in 2008. She then joined Javier Martinez at the Institute of Molecular Biotechnology in Vienna as a postdoctoral researcher working on miRNA processing and RNA metabolism.

#### Focus areas

RNA and translation

#### $\theta$ Thomas Schwarz-Romond (since 2006)

Thomas received his PhD in 2003 for the discovery and functional characterization of a new Wnt-signaling component in the lab of Walter Birchmeier. Moving into cell-biological and structural studies of this pathway, Thomas joined the lab of Mariann Bienz at the MRC-LMB in Cambridge, as a postdoctoral researcher.

#### Focus areas

Transduction  
Molecular biology of disease  
Stem cells  
Development

#### $\alpha$ Anke Spemann (since 2011)

Anke obtained her PhD on the role of Ras-induced interleukin-8 expression in tumor growth and angiogenesis in the laboratory of Dafna Bar-Sagi (State University of New York at Stony Brook). As a postdoctoral researcher, she analyzed dynamic changes of Polycomb-complex composition during neural stem cell differentiation in the group of Maarten van Lohuizen (Netherlands Cancer Institute, Amsterdam).

#### Focus areas

Chromatin and transcription

#### $\chi$ Hartmut Vodermaier (since 2006)

Hartmut obtained his PhD in the group of Jan-Michael Peters at the Institute of Molecular Pathology in Vienna where he investigated the ubiquitin ligase APC/C and cell cycle control. He continued to study cell division as a postdoctoral fellow with Andrea Musacchio at the Istituto Europeo di Oncologia in Milan, focusing on kinetochores and chromosome segregation.

#### Focus areas

Cell cycle  
Ubiquitination and proteolysis,  
DNA replication, repair and recombination

<sup>†</sup> Adapted from a forthcoming editorial that will be published in *The EMBO Journal* to mark its 30th anniversary.

## Congratulations

to the following EMBO Members

EMBO Members who joined the ranks of the Royal Society in the UK and the US National Academy of Sciences this year:

### New Royal Society Fellows and Foreign Members

- Shankar Balasubramanian
- Gordon Dougan
- Tony Kouzarides
- Andrew Millar
- Margaret Scott Robinson
- Krishnaswamy VijayRaghavan
- Gabriel Waksman
- Denis Duboule  
Foreign Member

### New Foreign Associates of the National Academy of Sciences

- Leif Andersson
- Mariano Barbacid
- Denis Duboule
- Ottoline Leyser
- Philippe Sansonetti
- Mitsuhiro Yanagida

## Upcoming deadlines

**EMBO Plenary Lectures**  
1 September

**EMBO Courses & Workshops**  
1 August

**Late abstract submission for  
The EMBO Meeting 2012**  
3 August 2012

**Deadline for nominations 2013  
Women in Science Award**  
15 October 2012

## Next issue

*EMBOencounters*

The next *EMBOencounters* issue – **Autumn 2012** – will be dispatched in **October 2012**.

Please send your suggestions, contributions and news, to [communications@embo.org](mailto:communications@embo.org) by **17 September 2012**.

## EMBO Members

elected in 2012

### 55 life scientists elected to EMBO membership

Fifty-five life scientists from Europe and around the world were recognised by EMBO for their excellence in research in 2012. Forty-eight of the researchers are from Europe and neighbouring countries while seven scientists from Argentina, Australia, South Korea and the United States join as Associate Members. In total, EMBO membership now comprises almost 1,550 life scientists in the international scientific community.

#### EMBO MEMBERS

<b>Ronen Alon</b> IL Weizmann Institute of Science, Rehovot	<b>Urs Greber</b> CH University of Zurich	<b>Béla Novák</b> UK University of Oxford
<b>Rolf Apweiler</b> UK European Bioinformatics Institute, Hinxton, Cambridge	<b>William A. Harris</b> UK University of Cambridge	<b>Nancy Papalopulu</b> UK University of Manchester
<b>Manuela Baccharini</b> AT Max F Perutz Laboratories, University of Vienna	<b>Urs Jenal</b> CH Biozentrum, University of Basel	<b>Chris Ponting</b> UK University of Oxford, MRC
<b>Shankar Balasubramanian</b> UK University of Cambridge	<b>Torben Heick Jensen</b> DK Aarhus University	<b>Thomas Preat</b> FR ESPCI ParisTech, Paris
<b>Cosima T. Baldari</b> IT University of Siena	<b>Ludger Johannes</b> FR Institut Curie, Paris	<b>Michael Sattler</b> DE Technical University of Munich, Garching and Helmholtz Zentrum München, Neuherberg
<b>Lucia Banci</b> IT University of Florence, Sesto Fiorentino	<b>Kai Johnsson</b> CH Swiss Federal Institute of Technology, Lausanne	<b>François Schweisguth</b> FR Institut Pasteur, Paris
<b>Axel Behrens</b> UK Cancer Research UK, London Research Institute	<b>Jos M.M. Jonkers</b> NL Netherlands Cancer Institute, Amsterdam	<b>Luca Scorrano</b> CH University of Geneva
<b>Monsef Benkirane</b> FR CNRS Institute of Human Genetics, Montpellier	<b>Stefan H.E. Kaufmann</b> DE Max Planck Institute for Infection Biology, Berlin	<b>Maria Sibilica</b> AT Institute of Cancer Research, Medical University of Vienna
<b>Ewan Birney</b> UK European Bioinformatics Institute, Hinxton, Cambridge	<b>Michel Labouesse</b> FR Institute of Genetics and Molecular and Cellular Biology, Illkirch	<b>Thomas Surrey</b> UK Cancer Research UK, London Research Institute
<b>Cédric Blanpain</b> BE Free University of Brussels	<b>Andreas Ladurner</b> DE Ludwig Maximilians University, Munich	<b>Sarah A. Teichmann</b> UK MRC Laboratory of Molecular Biology, Cambridge
<b>Jannie Borst</b> NL Netherlands Cancer Institute, Amsterdam	<b>Nils-Göran Larsson</b> DE Max Planck Institute for Biology of Ageing, Cologne	<b>Antoine Triller</b> FR Institute of Biology of the ENS, Paris
<b>Paola Bovolenta Nicolao</b> ES Centre for Molecular Biology "Severo Ochoa", Madrid	<b>Andreas Lüthi</b> CH Friedrich Miescher Institute, Basel	<b>Sabine Werner</b> CH Institute of Molecular Health Sciences, Zurich
<b>Jens C. Brüning</b> DE University of Cologne	<b>Laura Machesky</b> UK Beatson Institute for Cancer Research, Glasgow	<b>EMBO ASSOCIATE MEMBERS</b>
<b>Francesco Cecconi</b> IT University "Tor Vergata" and IRCCS Fondazione Santa Lucia, Rome	<b>Paul Martin</b> UK University of Bristol	<b>Vishva Dixit</b> US Genentech, South San Francisco
<b>Jane Clarke</b> UK University of Cambridge	<b>William Martin</b> DE Heinrich Heine University, Düsseldorf	<b>V. Narry Kim</b> KR Seoul National University
<b>Fabrizio d'Adda di Fagagna</b> IT IFOM Foundation – FIRC Institute of Molecular Oncology Foundation, Milan	<b>Raúl Méndez</b> ES Institute for Research in Biomedicine, Barcelona	<b>Alberto R. Kornblihtt</b> AR University of Buenos Aires
<b>Ulrike Gaul</b> DE Ludwig Maximilians University, Munich	<b>Eric Miska</b> UK Gurdon Institute, University of Cambridge	<b>Eric S. Lander</b> US Broad Institute of MIT and Harvard, Cambridge
<b>Pascal Genschik</b> FR CNRS IBMP, University of Strasbourg	<b>May-Britt Moser</b> NO Kavli Institute for Systems Neuroscience, Trondheim	<b>Ruth Lehmann</b> US New York University School of Medicine, HHMI
		<b>Ronald D. Vale</b> US University of California San Francisco
		<b>David L. Vaux</b> AU Walter and Eliza Hall Institute, Parkville

# Stem cell homeostasis at the baker's

Camera instead of test tubes – this is the trade that **BENNY SHILO** took on in September 2011, when he left active research to concentrate on photography as a fellow at the Radcliffe Institute for Advanced Study in the United States.

**S**hilo, a molecular genetics professor at the Weizmann Institute and a long-serving member of EMBO, aims to reach out to a general audience by using photographs of everyday life as metaphors for complex biological processes. He displayed his work, which includes dozens of pictures, at a show at Radcliffe and at a show at the Harvard Allston education portal, before returning to his lab in June this year. In an interview with *EMBOencounters*, he explains why he thinks that understanding developmental biology is essential even for non-scientists.

## Professor Shilo, what is the idea behind your project?

Biological research, especially when dealing with whole organisms, produces images of astounding beauty. Because of their aesthetic value, such images are extensively shown to the public. However, the biological principles they represent are seldom the basis for their selection and presentation.

I am presenting an approach that builds on the viewers' sensual experience, placing the viewer in the same position as the cells making the developmental decisions. In other words, the viewers will understand the way cells "think" at different junctions in the "micro world," based on their own experience in parallel situations.

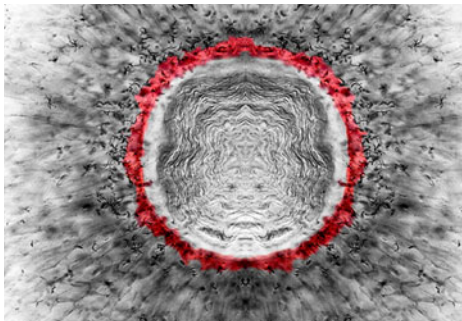
## Can you give a few examples?

One example is stem cell homeostasis. I went to a bakery, where the starter yeast dough is continuously maintained, and used as a permanent supply for making the bread. The concept of maintaining a source while using it in parallel to generate the final product is conveyed by this metaphor, and presented in an image showing the starter dough, and the making of the bread. This metaphor was used to help explain how stem cells provide a continuous source of differentiated cells in the body.

Another set of images refers to the lateral inhibition that occurs between cells and which is mediated by the Notch pathway. The Notch pathway is a highly conserved cell signalling pathway that is present in most multicellular organisms. The Notch mutant phenotype, where an excess of nerve cells is generated when "lateral inhibition"



© Benny Shilo



The concept of stem cells homeostasis can be illustrated by showing how starter yeast dough in a bakery is used. In both cases, the source is maintained while employed in parallel to generate the final product. Pictures by Benny Shilo (top) and C. Cerveny & S. Wilson (left)

fails, can be illustrated as a beach with sunshades that are placed right next to each other.

## Do you take a picture and then decide how to use it or do you have a certain choreographed sequence on your mind when you set off with your camera?

Since the purpose of the project is to convey the principles of developmental biology to the broad public in a way that will be effective, and yet as accurate as possible, I usually start from the scientific principle I want to present. Then I think of paradigms from the human world. With the analogies in mind, I go out and photograph them. In the past year, I was continuously looking at the world with an eye for the analogies I had in mind, and found them in unexpected places.

## How did you become interested in public outreach efforts?

From my numerous encounters with the lay public, including high-school students, teachers, adults attending evening courses and Weizmann Institute donors, I realised that there is a deep lack of knowledge and understanding about recent biological breakthroughs. Some of it is rooted in lack of knowledge of basic biological principles.

For example, the concept of deep similarities between flies and humans is totally underappreciated. The same is true for the notion of generating a complex body plan by successive interactions

between cells based only on guidelines from the genome, or the evolution of pattern diversity while maintaining these conserved elements. Once properly and didactically presented, these concepts are intuitive and although surprising at first, can be easily grasped.

## Why is it important for the general audience to understand fundamental research in developmental biology?

We are closer than we might think to the day when people will have their individual genome sequenced, with the ability to predict genetic predispositions and possible diseases, as well as implementing "personalised medicine" where treatments are adjusted to their genomic hallmarks. The extended use of stem cells or dedifferentiated cells derived from one's own body to replace defective cells and organs is also anticipated. People will be faced with medical choices and decisions, which should hopefully be based on their partial knowledge and appreciation of the subject matter.

## Did the time-out at Radcliffe change your attitude as an active scientist?

I think that the experience of this year will have a long-term impact. The need to explain the essence of development by the metaphors forced me to think critically about the underlying scientific concepts. It also allowed me to take a more global "bird's eye" view of developmental biology, in contrast to normal scientific research, where we focus on one system in great detail. Finally, the challenge of presenting the concepts to the public will be an ongoing effort, with future exhibitions, and possibly a book and a web site.



# EMBO Young Investigators receive early career awards

The US-based Howard Hughes Medical Institute (HHMI) has selected 28 scientists for the 2012 International Early Career Scientist award. Four of the awardees are EMBO Young Investigators. *Luísa M. Figueiredo*, *Óscar Fernández-Capetillo*, *Fyodor A. Kondrashov* and *Marcin Nowotny* have received as much as 650,000 US dollars for five years. *EMBOencounters* spoke to **ÓSCAR FERNÁNDEZ-CAPETILLO** about his plans to use the funding and about what it takes to become a HHMI grantee.

Oscar Fernández-Capetillo, head of the Genomic Instability Group at the Spanish National Cancer Research Centre (CNIO) in Madrid, Spain.

**Óscar, you are one of 28 scientists who received the prestigious International Early Career Scientist award. How does it compare to other prizes you have received?**

Each award has a big impact. The status of an EMBO Young Investigator is a great asset within the European community. You gain visibility with your European partners at a very critical step of your career, namely when you are starting your own lab. HHMI gives you worldwide visibility – particularly in the United States. A key aspect of the HHMI award is the flexibility of the funds. Awardees receive more than 600,000 US dollars that can be used at the discretion of the researcher for any purpose that is related to science.

**How different was the application process?**

The process is kept very simple with only a few general questions in the initial phase followed by a final interview at HHMI headquarters. The difference is that the HHMI selection process is a person-based approach whereas EU grants are project based and require a description of all milestones. I personally favour the HHMI system because it is impossible to foresee what you are going to do in the next five years. If you work on the frontiers of the life sciences then you have to enter exploratory routes every now and then. If you already know what you will be doing five years from now, then it cannot be considered cutting-edge science.

**Any clue as to why you have been selected?**

I don't know. The panel of applicants was really diverse and included people who work in systems biology, cancer, ageing and bioinformatics, to name just a few. The main thing that interested the selection committee was having your own approach and being creative. The field was irrelevant.

**Could you describe the focus of your current research?**

We have invested a lot of effort over the last few years to find out what replication stress is and how this type of stress impacts cancer and ageing. This stress happens every time that a cell replicates its DNA, but is also induced by oncogenes. We try to exploit this type of knowledge to attack cancer cells.

**How are you going to use the money?**

I will use it to do things that are not covered by my other grants, including the development of new techniques or paying for expensive methodologies such as high-throughput sequencing. Thanks to the flexibility of these funds, I will also be able to pay members of my lab that need some extra months to finish their research. The current situation in Spain is dramatic, even more so for people at the postdoctoral stage trying to continue their careers in Spain.

## EMBO Young Investigator Meeting 2012 in Lisbon

Lisbon was the place to be for young group leaders keen on learning more about each other's projects. 64 of them came to the three-day EMBO Young Investigators meeting held at the Gulbenkian Institute of Science. A highlight of the meeting was a visit to The Champalimaud Centre for the Unknown, a recently opened multidisciplinary centre for translational research situated in a beautiful location on the waterfront of Lisbon.

The *EMBO Journal* editor Hartmut Vodermaier also attended this year's meeting to give a talk about the challenges of the scientific reviewing and publishing process for both authors and referees as well as for editors and publishers. His presentation was followed by a lively discussion on the various initiatives recently started by *The EMBO Journal* and other EMBO Scientific Publications aimed at improving the reviewing process.





©Alexandre Lescure, Curie Institut

## EpiGeneSys Network of Excellence

The EpiGeneSys Network of Excellence expects to have more than 100 member laboratories by autumn of 2012. EpiGeneSys ([www.epigenesys.eu](http://www.epigenesys.eu)) brings together epigenetic and systems biology researchers looking for new ways to advance the understanding of human disease and improve human health. The scientific objective of the network of researchers is to use a systems biology approach to define epigenetic mechanisms quantitatively in space and time.

Two rounds of competitive recruitment for 18 new scientific members with less than 3 years of independent research experience have just ended;

the most recent additions to the network will be announced later this summer. New recruits receive 150,000 Euros of funding for a 3-year period. Two open calls for participants have also added associate members who collaborate with the network but do not receive direct funds.

Training and education play important roles in EpiGeneSys. Five annual meetings and at least 17 workshops are planned as part of the project. In addition, two courses on systems biology will bolster the knowledgebase in the epigenetics

community; the first course took place on 3–6 June 2012 at the Weizmann Institute in Israel.

EpiGeneSys has a mission to communicate science to the public in an interesting and accessible fashion and to awaken the interest of students in research. The web site ([www.epigenesys.eu](http://www.epigenesys.eu)) is therefore structured to cater for the public and scientists.

EMBO Member *Geneviève Almouzni* (Centre national de la recherche scientifique, Institut Curie) is the Scientific Coordinator of EpiGeneSys, and *Asifa Akhtar* (Max Planck Institute of Immunobiology and Epigenetics, Freiburg), *Wolf Reik* (Babraham Institute, Cambridge), and *Eran Segal* (Weizmann Institute of Science, Israel) are Deputy Coordinators.

Funded by the European Commission from 2010 to 2015, the EpiGeneSys Seventh Framework Programme (FP7) project currently unites researchers working in 68 laboratories in 14 countries across the globe. The four main areas of research include the study of the dynamics of epigenetic regulators, investigation of the relationship between the genotype and epigenotype, the study of how cell signaling impacts the epigenome, and development of a computational framework for epigenetics and systems biology.

## The fate of stem cells in four dimensions

An ambitious new project, **4DCellFate** ([www.4dcellfate.eu](http://www.4dcellfate.eu)), will study the roles of the Nucleosome Remodeling and Deacetylase (NuRD) and Polycomb Repressive (PRC) complexes in regulating differentiation in embryonic stem cells.

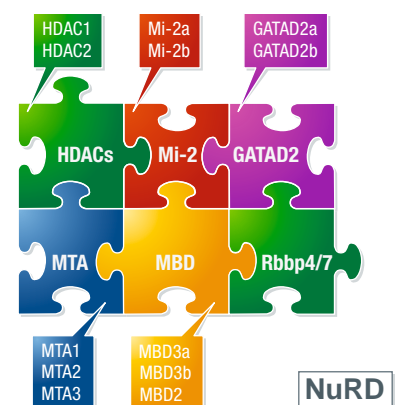
The goal of 4DCellFate is to create a “four-dimensional map” across space (the genome and cell) and time (during differentiation) of the regulatory functions of these complexes. The project is funded by a European Commission Seventh Framework Programme (FP7) grant of almost 12 million Euros and brings together scientists from eight academic institutes, three biotech companies, and a large pharmaceutical company. The project will play a key role

in training future scientists in multidisciplinary science, both within and outside the consortium, and will recruit and involve additional young investigators.

Although it has been known for over a decade that these complexes play a fundamental role in determining stem cell fate, how these complexes work remains very unclear. Recent studies have shown that the NuRD and PRC complexes are not static entities, but rather that their compositions and structures are dynamic. A key goal will be to understand this complexity and determine how their activity is modulated at a system-wide level. Initially, the project will elucidate the composition, genome-wide localization, and structures of these complexes. The next step is to understand how the activities of the complexes are regulated. The project will use high-throughput genomics, epigenomics, and quantitative mass spectrometry, and will develop novel methods for studying the localization of proteins at a single-molecule level. The aim is to integrate the data into a multi-scale model of gene regulation by the NuRD and PRC complexes during self-renewal and stem cell differentiation.

“A major goal of the project is to translate the understanding of the roles of these complexes in stem cells into future molecular therapies. In particular, the project will look at the epigenetic processes that deregulate gene expression

in cancer, specifically during the onset, development or progression of leukaemia,” said *Luciano Di Croce*, Research Professor at the Centre for Genomic Regulation, Barcelona, and Scientific Coordinator of the 4DCellFate project. *Ernest Laue*, Professor at the University of Cambridge, remarked: “We believe that elucidating the details of how the PRC and NuRD complexes regulate stem cell differentiation will have significant potential for studying disease progression, and for the development of drugs for personalised molecular therapies.”



**Nucleosome Remodeling and Deacetylase (NuRD) complex, one of the proteins involved in regulating differentiation in embryonic stem cells**

# eLife readies for launch



EMBO Members **FIONA WATT** and **DETLEF WEIGEL** together with EMBO Associate Member **RANDY SCHEKMAN** are leading the editorial team of the new scientific journal eLife. eLife, which is financially backed by the Wellcome Trust, the Max Planck Society and the Howard Hughes Medical Institute, will launch an open access journal for the life and biomedical sciences later this year.

“The editorial team of eLife will invite and consider the best contributions from all sources in the life sciences and biomedical community,” said *Watt*. “We will ensure fair, fast and high-quality editorial decisions for all manuscripts through an evaluation process that will be carried out by active researchers representing the breadth of the scientific community.”

*Watt*, Director of the Centre for Stem Cells and Regenerative Medicine at King’s College London, has been an EMBO Member since 1999. She is widely recognized by the scientific community for elucidating mechanisms that control epidermal stem cell renewal, differentiation and tissue assembly, and discovering how these processes are deregulated in disease.

Expanding on the publishing process for the journal, *Detlef Weigel* said: “Because eLife is an online-only publication, there will be no

unnecessary length restrictions. We will take full advantage of the online format to smoothly integrate material that is often relegated to supplementary PDF files. We will also aim to streamline the review process, by reducing revision cycles and by having reviewers and editors consult to provide a consolidated view of their comments in the decision letter. In these matters, we will build on several of the practices that have been pioneered by the EMBO family of publications.”

Developments in digital media offer considerable opportunities for the presentation of research results. eLife intends to use the latest digital media to increase the utility of data for further research and to broaden participation to the widest possible audience.

*Detlef Weigel*, Director at the Max Planck Institute for Developmental Biology in Tübingen, was elected an EMBO Member in

2003, in recognition of his discoveries of how flowering time and floral patterning are regulated. In recent years, *Weigel* has focused on causes and consequences of naturally occurring genetic and epigenetic variation.

*Randy Schekman*, Professor at UC Berkeley and HHMI Investigator, was elected an EMBO Associate Member in 2000 and is widely known for his work on the molecular mechanism of vesicular traffic in the secretory pathway.

eLife is scheduled to make its debut online in late 2012. Further information is available at [www.elifesciences.org](http://www.elifesciences.org)



## Google map for genomes

Mining seven million scientific research papers for DNA sequences to make useful connections, EMBO Fellow **MAX HAEUSSLER** created a new tool to facilitate the work of scientists.

*Cruz*, developed an online tool that integrates text data into the Human Genome Browser of the University of California. The search engine identifies bits of text that look like letters of a DNA sequence and links together all papers that mention that particular sequence. If, for example, someone writes about a gene and doesn’t use the correct name of this gene, only few people would find it. But if the article includes any piece of the gene sequence, the search engine would identify it. The text-mining browser, which includes data from PubMed Central and Elsevier, went live in mid-May (<http://text.soe.ucsc.edu>).

**An ambitious plan.** The young researcher wants to scan all existing post-2000 scientific literature

amounting to seven million articles for references to DNA sequences. “For legal and technical reasons it’s impossible to include all references to genomic resources from all published research articles in our search engine,” he says. “But we aim to cover 60–80 percent.”

The tool allows a researcher who is not an expert on a particular gene to view all relevant literature quickly and easily. “It’s similar to a Google map with various data sources that can be overlaid onto the genome with a mouse click,” explains *Haeussler*. The genocoding project is a continuation of a previous plan that he initiated in 2006 as a biology graduate student together with his colleague *Casey Bergman*.

The scale of information in modern sciences is growing in a breathtaking way. Every day more than two thousand research articles are published and the volume of published data doubles every three years. Text-mining saves researchers time by identifying papers that are the most relevant to their research area.

EMBO Fellow *Max Haeussler* has made an important contribution towards making better use of scientific data. *Haeussler*, a postdoctoral researcher at the University of California in Santa



# MISSION IMPERATIVE



© Denis Noble

**DENIS NOBLE** is President of the International Union of Physiological Sciences and Professor Emeritus at Oxford University. Noble was one of the first researchers to use computers to look at physiology and his work led to a working mathematical model of key molecular components in the heart that generate cardiac rhythm. He shared some of his thoughts on systems biology on a recent visit to Heidelberg to give a lecture at the Print Media Academy entitled *The music of life: the principles of systems biology*.

**B** iologists need a heavy dose of humility. This was one of *Denis Noble's* messages delivered towards the end of a talk given at the Print Media Academy in Heidelberg, Germany, on 28 February. Noble was talking about systems biology but the reference was to the human genome project. "The problem with sequencing the human genome was that we overpromised. There is no question that we had to do it but the hyperbole went a bit far. Systems biologists should take note."

According to Noble, we need a holistic approach to study the complex systems that make up life. Systems biology has many definitions but the goal is to map, understand, and model the whole network of interactions that shape biology, all the way from molecules up to cells and the whole organism. "Such a project is enormous. It's almost mission impossible but I would call it mission imperative."

Noble put the scale of the adventure into perspective. "The human genome project was about finding the parts and we found around 25000 of them. But the number of ways of putting those parts or genes together is vastly greater than the total number of fundamental particles in the universe, so it will take a long time to work it all out." It turns out there are  $10^{70000}$  ways of putting the parts together but a mere  $10^{80}$  atoms in the universe.

Noble's own work, which goes back many years, has focused on building a reliable computer model for the human heart. He was one of the first researchers to use computers to look at physiology and his research led to a working mathematical model of some of the key components in the

heart that generate cardiac rhythm. The model integrated channels, carriers, receptors, substrates, and other key components of cells. The breakthrough was that it successfully reproduced the oscillation of the cardiac pacemaker.

In his talk, Noble emphasized that cardiac rhythm is a property of the system and there is no genetic program that directly makes it perform its function. "Sometimes we drink too much from the reductionist agenda. It is not correct to ask which gene leads to cardiac rhythm. It is a property of the higher-level components that make up the system," commented Noble.

Noble's lifelong research interests have progressed into the Physiome project, a worldwide, public domain effort to provide a computational framework for understanding physiology in humans and other organisms. The task is to develop integrative models at all levels of biological organisation, from genes to the whole organism via gene regulatory networks, protein pathways, integrative cell function, and tissue and the relations between structure and function in whole organs. "This is incredibly ambitious," said Noble "but we can see systems biology finding its feet. It is possible to unite theoretical approaches like computer modeling with practical research in ways that have outcomes. Our work with computer modeling is proving useful in drug development." Discoveries are emerging and applications are attracting the interest of pharmaceutical companies.

Noble's research in systems biology has helped with the study of two drugs for the treatment of angina. "For Ivabradine, we identified the drug target and showed that the drug could be a safe health intervention to slow the beating of the heart," remarked Noble. "For Ranolazine, we have revealed valuable information on the safety of the drug that would have been missed by looking at two specific effects in isolation."

Noble has been heavily involved in the activities of the International Union of Physiological Sciences, and he is currently in his second term as President. When asked about the value of physiology in the era of personalized medicine and individual diagnostics he remarked: "It is totally necessary if we define physiology as the study of function." His advice to early-stage researchers: "Take some risks."

The talk, which was open to the general public, was organized by the European Molecular Biology Laboratory, Deutsches Krebsforschungszentrum, Ruprecht-Karls-Universität Heidelberg, and the UniversitätsKlinikum Heidelberg. The Manfred Lautenschläger Stiftung provided financial support for the lecture.

## Practical Courses

**Computational biology:  
From genomes to cells and systems**

ES-L'Escala (Girona),  
14–20 October 2012

**High-throughput microscopy for  
systems biology**

DE-Heidelberg,  
15–21 October 2012

**Solution scattering from biological  
macromolecules**

DE-Hamburg,  
17–24 October 2012

**Analysis of high-throughput  
sequencing data**

UK-Hinxton,  
29 October–3 November 2012

**Metabolomics bioinformatics for life  
scientists**

UK-Hinxton,  
25 February–1 March 2013

**High-throughput RNAi and data  
analysis**

DE-Heidelberg,  
3–8 March 2013

**Postgenomic phylogenetics**

IT-Erice,  
10–17 March 2013

**Imaging infection and immunity**

ZA-Pretoria,  
2–13 April 2013

**Metagenomics:  
From the bench to data analysis**

DE-Heidelberg,  
14–20 April 2013

**Super-resolution and advanced  
microscopies in living cells**

FR-Montpellier,  
15–18 May 2013

**High-throughput protein production  
and crystallization**

UK-Harwell,  
15–23 May 2013

**Exploiting anomalous scattering  
in macromolecular structure  
determination**

FR-Grenoble,  
3–7 June 2013

**Developmental neurobiology:  
From worms to mammals**

UK-London,  
30 June–13 July 2013

## Other EMBO events

**The EMBO Meeting 2012**

FR-Nice,  
22–25 September 2012

**EMBO Members' Meeting**

DE-Heidelberg,  
24–26 October 2012

**13th EMBL | EMBO  
Science and Society Conference  
Biodiversity in the balance:  
Causes and consequences**

DE-Heidelberg,  
9–10 November 2012

**Organizers  
Apply now for  
2013 funding  
Bi-annual deadlines  
1 March, 1 August**

## Workshops

**Cell biology of early mouse  
development**

UK-Cambridge,  
9–12 September 2012

**Structure-specific nucleases in DNA  
replication and repair**

FR-Hyères,  
16–20 September 2012

**EMBO Molecular Medicine Workshop:  
Molecular medicine of sphingolipids**

IL-Ramot,  
16–21 October 2012

**Dr Jekyll and Mr Hyde: Macrophages  
in inflammation and immunity**

FR-Marseille,  
17–19 January 2013

**The Planctomycetes-  
Verrucomicrobia-Chlamydiae  
superphylum: Exceptions to the  
bacterial definition?**

DE-Heidelberg,  
28 February–2 March 2013

**Physical biology of cancer**

IT-Candiolo,  
7–9 March 2013

**Chromosome segregation and  
aneuploidy**

NL-Breukelen,  
22–26 June 2013

**The molecular life of diatoms**

FR-Paris,  
24–28 June 2013

Global Exchange  
Lecture Courses**Innate immunity: Evolution and  
advances in clinical medicine**

ZA-Johannesburg,  
2–5 September 2012

**Bioinformatics for microbial  
genomics and metagenomics**

MA-Rabat,  
4–10 November 2012

**Structural and biophysical methods  
for biological macromolecules in  
solution**

IN-Hyderabad,  
29 November–6 December 2012

EMBO | FEBS  
Lecture Courses**Biomembranes: Molecular  
architecture, dynamics and function**

FR-Cargèse,  
10–20 June 2013

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

For further information, please go to  
EMBO Courses & Workshops  
[www.embo.org/programmes/  
courses-workshops/](http://www.embo.org/programmes/courses-workshops/)

## Conferences

**Chemical biology 2012**

DE-Heidelberg,  
26–29 September 2012

**Telomeres and the DNA damage  
response**

FR-L'Isle-sur-la-Sorgue,  
2–6 October 2012

**The physiology of the  
endoplasmic reticulum (ER):  
Function and dysfunction**

ES-Caldes de Malavella,  
15–19 October 2012

**Experimental approaches to  
evolution and ecology using yeast**

DE-Heidelberg,  
17–21 October 2012

**From functional genomics to systems  
biology**

DE-Heidelberg,  
17–20 November 2012

**Critical assessment for protein  
structure prediction (CASP10)**

IT-Gaeta,  
9–12 December 2012

**Protein transport systems:  
From structure to function of  
translocation machines**

HR-Dubrovnik,  
13–17 April 2013

**Eukaryotic RNA turnover:  
From structural insights to diseases**

FR-Ilkirsch,  
21–24 April 2013

**Spatial 2013:  
From spatial signalling to  
sensing spatiality**

IL-Dead Sea,  
24–28 April 2013

**Chromatin and epigenetics**

DE-Heidelberg,  
8–12 May 2013

**Allosteric interactions and biological  
regulation**

FR-Paris,  
14–17 May 2013

**The biology of molecular chaperones:  
From molecules, organelles and cells  
to misfolding diseases**

IT-Santa Margherita di Pula,  
17–22 May 2013

## ESF | EMBO Symposia

**Molecular biology and innovative  
therapies in sarcomas of childhood  
and adolescence**

PL-Pułtusk,  
29 September–4 October 2012

**EMBO | EMBL Symposia  
Deadline for proposals  
for EMBO | EMBL Symposia  
2014**

**Deadline  
1 August 2012**

**New!**

## EMBO | EMBL Symposia

**Diabetes and obesity**

DE-Heidelberg,  
13–16 September 2012

**Quality control:  
From molecules to organelles**

DE-Heidelberg,  
19–22 September 2012

**The complex life of mRNA**

DE-Heidelberg,  
7–10 October 2012

**Germline:  
Immortality through totipotency**

DE-Heidelberg,  
13–16 October 2012

**Evolution and ecology of model  
organisms**

DE-Heidelberg,  
1–4 May 2013

**Cardiac biology:  
From development to  
regenerative medicine**

DE-Heidelberg,  
7–9 June 2013

*For an up-to-date list of  
EMBO events please go to  
[events.embo.org](http://events.embo.org)*

The EMBO Practical Course on

**Computational molecular  
evolution**

that took place in Heraklion from  
29 April to 10 May 2012 was  
featured on Greek TV.

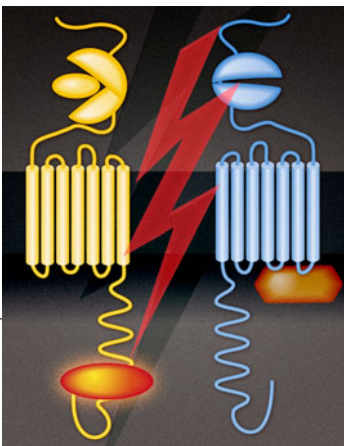
Watch the video on  
[www.youtube.com/  
watch?v=v7d2VnRmnek](http://www.youtube.com/watch?v=v7d2VnRmnek)



## RESEARCH ARTICLE

## Naturally occurring protein has a role in chronic pain

Researchers in France and Sweden have discovered how one of the body's own proteins is involved in generating chronic pain in rats. The findings also suggest therapeutic interventions to alleviate long-lasting pain. Chronic pain is persistent and often difficult to treat. It is due, at least in part, to changes in molecular signalling events that take place in neurons, alterations that can ultimately disrupt the transmission of nerve signals from the spinal cord to the brain.



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"We are fortunate to have a wide range of technologies that allow us to look more precisely at the molecular events that lead to the onset of chronic pain in animals," said *Marc Landry*, lead author of the study and Professor at the University of Bordeaux. "Our results show that the levels of the naturally occurring protein 14-3-3 zeta are higher in the spinal cord of rats that have chronic pain. Moreover, we have been able to demonstrate how 14-3-3 zeta triggers changes in the signalling pathway that leads to the symptoms of chronic pain."

Impairment of GABA<sub>B</sub> receptor dimer by endogenous 14-3-3 zeta in chronic pain conditions

Sophie Laffray, Rabia Bouali-Benazzouz, Marie-Amélie Papon, Alexandre Favereau, Yang Jiang, Tina Holm, Corentin Spriet, Pascal Desbarats, Pascal Fossat, Yves Le feuve, Marion Decossas, Laurent Héliot, Ulo Langel, Frédéric Nagy, Marc Landry

The EMBO Journal

Read the paper:  
doi: 10.1038/emboj.2012.161

## SCIENTIFIC REPORT

## Antibiotic treatment increases the severity of asthma in young mice



© 2012 EMBO reports | Krahl/Finlay/Russell

Treatment with the antibiotic vancomycin increases the severity of allergic asthma in young mice, researchers in Canada have revealed. The results are consistent with the *hygiene hypothesis* that links the loss of beneficial bacteria in the community of microorganisms in the gut, collectively known as the microbiota, to the onset of asthma.

"We administered antibiotics to mice of different ages to determine if there was a link between the make-up of the microbial community in the gut and the extent of experimentally induced allergic asthma," said *Brett Finlay*, Professor at the Michael Smith Laboratories at the University of British Columbia, Canada. "Treatment of young mice with the antibiotic vancomycin reduced the diversity of microbes in the gut, significantly altered the composition of the bacterial population, and increased the susceptibility of young animals to experimentally induced asthma."

## Early life antibiotic-driven changes in microbiota enhance susceptibility to allergic asthma

Shannon L. Russell, Matthew J. Gold, Martin Hartmann, Benjamin P. Willing, Lisa Thorson, Marta Wlodarska, Navkiran Gill, Marie-Renée Blanchet, William Mohn, Kelly McNagny, Brett Finlay

EMBO Reports

## Read the paper:

www.nature.com/emborjournal/v13/n5/abs/embor201232a.html  
doi:10.1038/embor.2012.32

## EDITORIAL

## Towards an "Oceans Systems Biology"

The two-and-a-half-year TARA OCEANS expedition finished on 31 March when the ship and crew reached Lorient, France. The arrival completed a journey of 60 000 miles across all the major oceans of the world to sample and investigate microorganisms in the largest ecosystem on the planet.

"Life and evolution started in the oceans, yet we know very little about the distribution of marine biodiversity," said *Eric Karsenti*, senior scientist at the European Molecular Biology Laboratory in Heidelberg, Germany, and Co-Director of the TARA OCEANS project. "If it were not for these microorganisms we would not exist. First, we are their evolutionary descendants and second they generate the atmosphere of the Earth."



© F. Aurat / Tara Expeditions

The next phase of the project, which involves analysing the scientific data and building predictive computational models, has already begun. TARA Oceans is recruiting about 20 postdoctoral researchers at multiple locations to support the data analysis, interpretation and model building. Further details are available at [www.embl.org/tara\\_oceans](http://www.embl.org/tara_oceans)

## Towards an "Oceans Systems Biology" Karsenti E.

Molecular Systems Biology

## Read the editorial:

www.nature.com/msb/journal/v8/n1/full/msb20128.html  
doi:10.1038/msb.2012.8

## RESEARCH ARTICLE

## Telomerase gene therapy slows ageing, improves health in mice

Gene therapy allows older mice to live longer, healthier lives. Mice that received a single gene-therapy treatment to deliver telomerase to different cells in the body showed drastic improvements in health, fitness and longevity.



© 2012 CNIO

"Gene therapy is typically thought of as a way to deliver genes into cells to correct genetic defects or diseases. However, if we consider that ageing is, at least in part, the consequence of defective gene function, gene therapy is also a valid strategy to delay ageing or to increase lifespan," said *Maria Blasco*, one of the lead authors of the study and Director of the Spanish National Cancer Research Centre. "Our results show that telomerase gene therapy is not only a viable anti-ageing intervention but it also has remarkably beneficial effects on health and fitness without increasing the incidence of cancer."

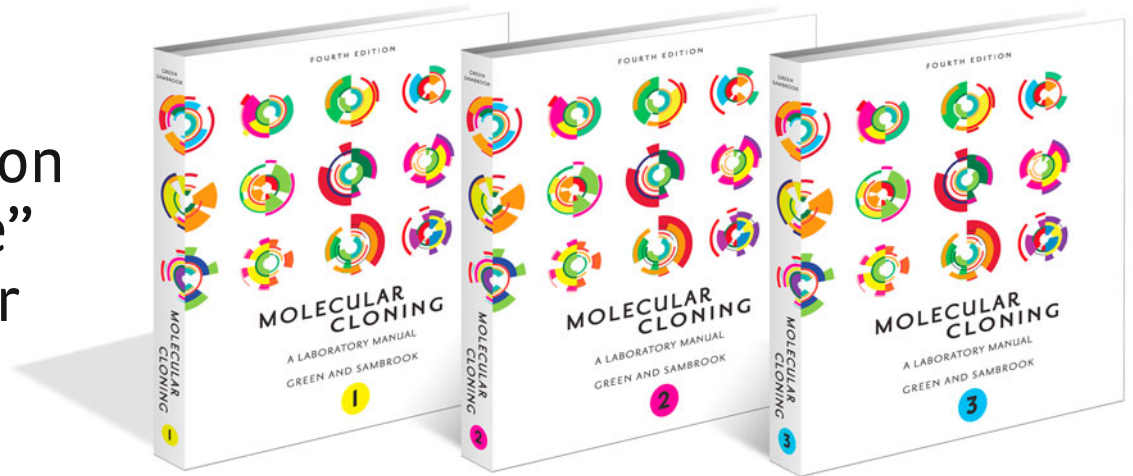
Telomerase gene therapy in adult and old mice delays ageing and increases longevity without increasing cancer  
Bruno Bernardes de Jesus, Elsa Vera, Kerstin Schneeberger, Agueda M Tejera, Eduard Ayuso, Fatima Bosch, Maria A. Blasco

EMBO Molecular Medicine

## Read the paper:

<http://onlinelibrary.wiley.com/doi/10.1002/emmm.201200245/full>  
doi: 10.1002/emmm.201200245

## Fourth edition of the “bible” of molecular cloning



Even classics deserve an update. *Molecular Cloning: A Laboratory Manual* has served as an indispensable source of technical expertise in laboratories around the world for 30 years. In June 2012, the fourth edition of this influential work will be published after several years of careful nurturing by founding author **JOE SAMBROOK** of the Peter MacCallum Cancer Institute, Melbourne, Australia, and new co-author **MICHAEL R. GREEN** from the Howard Hughes Medical Institute and University of Massachusetts Medical School, Worcester, United States.

**M**olecular Cloning was introduced in 1982 as a collection of essential molecular biology protocols that would serve the life science community. The collection was based on the protocols used during the 1980 Cold Spring Harbor Laboratory Course on the *Molecular Cloning of Eukaryotic Genes*. While it was not the first manual to be published, it is fair to say that it is the book that put the techniques of molecular cloning within easy reach of almost all laboratory practitioners in the life sciences.

“We believe that the latest edition of *Molecular Cloning: A Laboratory Manual* carries on the tradition of accuracy, clarity and attention to detail that have come to be expected from this publication,” remarked EMBO Associate Member *Michael Green*. “It has been a pleasure to work

closely with the many researchers from the molecular biology community who have both helped to define the content and made outstanding contributions to this practical resource.”

Ten years have passed since the last edition and molecular biology continues to develop at a bewildering pace. Core chapters from previous editions have been revised to feature the current best practice strategies for cloning of nucleic acids, gene transfer, and gene expression analysis. 12 new chapters have been added to cover those research areas that have emerged or significantly changed in the past decade, including epigenetic analyses, RNA interference, and genome sequencing. Recognizing that much of the recent research in genomics has been linked to a deluge of computational data, a new chapter

on bioinformatics describes the use of analytical tools for comparing the sequences of genes and proteins and identifying shared expression patterns among sets of genes. The new edition, which extends to almost 2000 pages and is spread over three volumes, also includes an up-to-date collection of reagents, vectors, media, detection systems, and commonly used techniques.

“It is always a significant challenge to keep up to date with the latest protocols in molecular biology. I think this book continues to serve a real need for researchers and I hope the fourth edition encourages scientists to explore new techniques that will lead to breakthrough discoveries,” said *Joe Sambrook*.



## The Spark of Life

EMBO Member **FRANCES ASHCROFT** has published a new popular science book entitled *The Spark of Life: Electricity in the human body*. In this book, Ashcroft explains how ion channels give rise to the electrical events in our brain, heart and muscle cells, and how they underlie many other physiological processes.

**S**ays Ashcroft: “Ion channels are found in every cell on Earth and they govern every aspect of our lives, from consciousness to sexual attraction, from fighting infection to the beating of our hearts and our ability to see and hear.” She adds: “What I have tried to do is to explain how ion channels work, how they are the targets for many drugs and toxins and how their malfunction can cause disease, through

a series of real-life stories. These tales are interwoven with descriptions of some of the many engaging personalities who have studied them over the years.”

Ashcroft is a Royal Society Research Professor at the University of Oxford and a Fellow of Trinity College, Oxford.

The book is published by Allen Lane (Penguin Books) and is available from 28 June 2012.

# Meeting of minds

Does the creative process follow the same principles in scientists and artists? Are scientists and artists driven by a similar kind of deeply rooted curiosity? These are questions not often asked by molecular biologists. Indeed, the laboratory and the art studio are two microcosms that rarely overlap.

**J**an-Michael Peters, Senior Scientist and Deputy Director at the Research Institute of Molecular Pathology in Vienna, is a biologist and an art lover. He is also the coordinator of MitoSys (systems biology of mitosis), a 10 million Euro, five-year scientific research project funded by the European Commission Seventh Framework (FP7) Programme. The aim of MitoSys is to generate a comprehensive mathematical understanding of mitotic cell division. It is a follow-up project of MitoCheck, which identified 600 human genes involved in mitosis out of the 22,000 genes in the human

genome and characterized the assembly of these mitosis genes into “molecular machines.” MitoSys, which started in June 2010, is a large European Union project that integrates the work of leading mathematicians, biochemists, biophysicists, biologists, and artists.

Artakt of the University of the Arts in London recently joined the consortium of twelve participating research institutions and companies. Artakt Director *Marina Wallace* devises and curates the ambitious art project *Meeting of Minds* — the main outreach activity of MitoSys. The project involves artists from diverse disciplines – dance, ceramics, sculpture and fine arts – who work with researchers and complement their scientific advances. The participants have been paired to form four couples, each involving a scientist who specializes in a particular aspect of mitosis and an artist as partner.

The pairs meet regularly to gain insight into the discipline and expertise of each partner. Four short videos of the interactions that elucidate the science and document the communication process will be incorporated into the documentary *Meeting of Minds*. The screening of the film is part of an exhibition that will tour several European cities.

**The pairings promise to deliver unique and diverse pieces of art.** Geneticist *Kim Nasmyth* will be accompanied by experimental choreographer *Shobana Jeyasingh*. Cell biologist *Tony Hyman* is joined by artists *Ackroyd & Harvey* whose work includes sculpture, photography and architecture. Meiosis expert *Melina Schuh* will team up with *Rob Kesseler*, Visual Artist and Professor at the Central Saint Martins College of Arts and Design. Visual artists *Lucy* and *Jorge Orta* will interpret the work of cell-cycle expert Jan-Michael Peters.

“I am curious and thrilled about the outcome of the art project,” says coordinator Jan-Michael Peters. “Even though artists and scientists have completely different means of approaching their subjects, I have a feeling that we might all be driven by the same fundamental questions about the mechanisms of life.”

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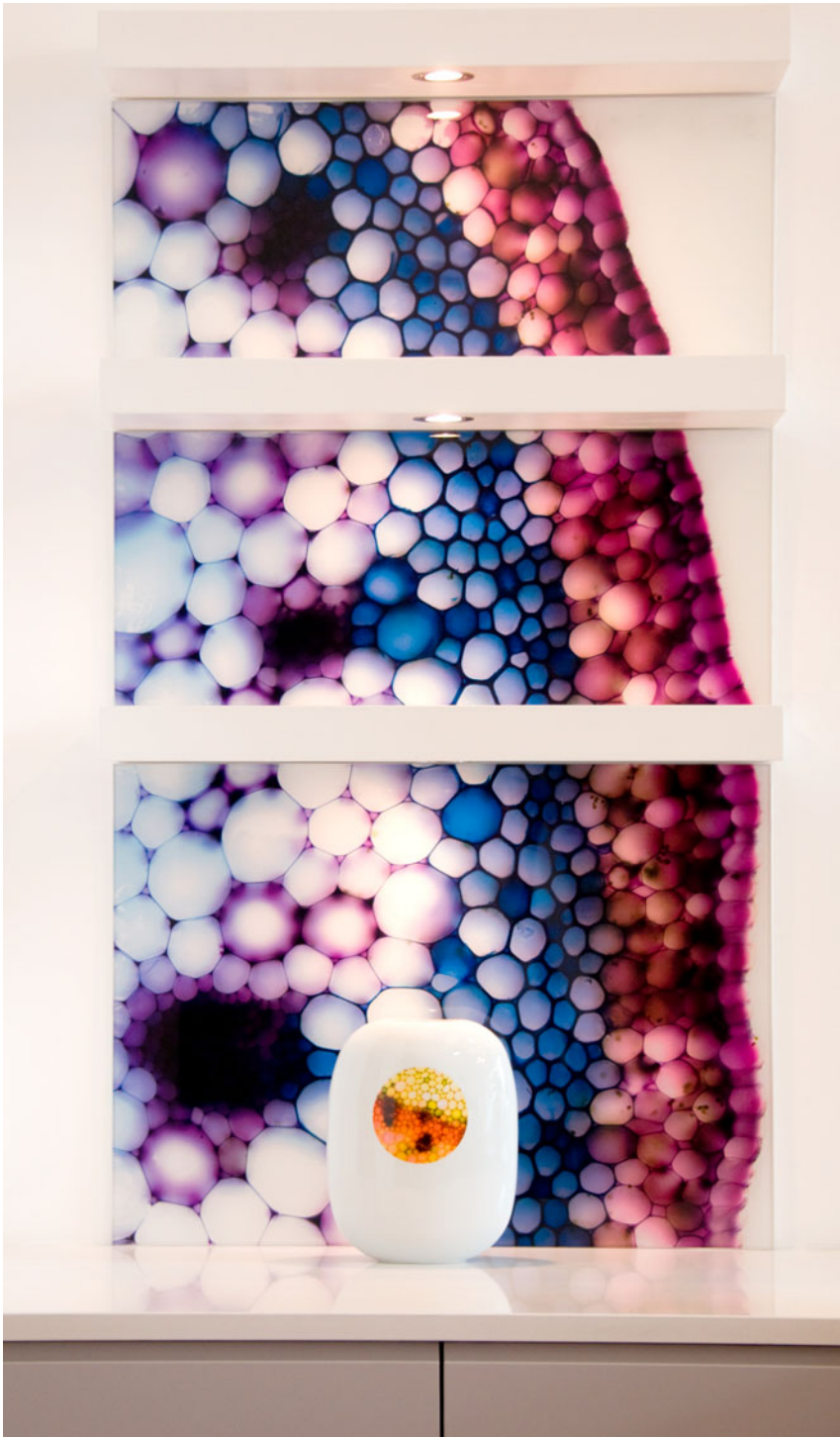
## Florid

**Rob Kesseler**

2011

Porcelain and glass panel

Installation view of exhibition Florid at Roundhouse Design London for the London Design Festival. Porcelain vase with printed decal of stem section of *Chrysanthemum coronarium* (crown daisy) stained with Safranin. Glass panel with printed image of a stained stem section of *Gennaria diphylla* (two leaved gennaria).



# Molecular Medicine in Lisbon

The **INSTITUTO DE MEDICINA MOLECULAR** (IMM; imm.fm.ul.pt), in Lisbon, Portugal, is seeing the benefits of a focused strategy for research and innovation in the biomedical sciences. In 2011, the institute witnessed further increases in scientific productivity and funding, which were also reflected by increased international recognition for the work of its researchers.



“We have never lost sight of what is the most important objective for the institute: excellent science reflecting best practice in patient care and disease control. This is our goal and we pursue it by recruiting outstanding young group leaders and creating a network of relevant partners,” says *Maria Carmo-Fonseca*, EMBO Member and Executive Director of the IMM.

The IMM recently created the Lisbon Academic Medical Centre jointly with the Santa Maria Hospital and the Lisbon Medical School at the University of Lisbon. A whole campus of facilities in Lisbon is now dedicated to the development of the academic dimension of clinical practice, which provides renewed support for the concept of a teaching hospital.

This strategy already impacted the scientific productivity of the institute. In 2011, IMM attracted record funding and published a higher number of papers in high impact factor journals. Competitive funding was 5 million Euros in 2011 and total research expenditure reached 11 million Euros. In 2011, researchers at the institute published 287 papers in peer-reviewed scientific journals; 23 of these publications were in journals with an impact factor of 10 or higher. Many of the published papers arose from close collaboration between IMM research groups and hospital teams.

The recruitment of outstanding interdisciplinary researchers from around the world is also an important component of the IMM strategy. *Luísa Figueiredo*, for example, was awarded an EMBO Installation Grant in 2010 to establish a research group at IMM and has now been appointed a Howard Hughes Medical Institute International Early Career Scientist.

At the age of 38, Figueiredo leads a team devoted to unraveling antigenic variation in *Trypanosoma brucei*, the protozoan parasite that causes sleeping sickness (African trypanosomiasis).

“The research community has a responsibility to society not only to deliver high quality scientific research and training but also to support economic development,” says Carmo-Fonseca.

## IMM at a glance

- Instituto de Medicina Molecular (IMM),  
Faculdade de Medicina da Universidade de Lisboa
- Founded: 2001
- Total number of researchers: 435
- Research units: 28
- Start-up companies: 3
- Total expenditure 2011: 11 million Euros
- Competitive funding: 5 million Euros

## Recent International Awards:

- Howard Hughes Medical Institute  
International Early Career Scientist award 2011  
*Luísa Figueiredo*
- Early Career Bayer Hemophilia Award 2011  
*Vanessa Oliveira*  
Boosting dendritic cell function to facilitate tolerance induction to recombinant clotting factor
- Bill & Melinda Gates Foundation,  
Grand Challenges Explorations Programme 2011  
*João Gonçalves*  
Nanotechnology against viral latency:  
Sensor strategies to eliminate HIV-1 infected cells
- ERC Starting Grant 2010  
*Bruno Silva-Santos*  
Differentiation of pro-inflammatory T cell subsets *in vivo*
- Bill & Melinda Gates Foundation,  
Grand Challenges Explorations Programme 2010  
*Miguel Prudêncio*  
A new whole-organism vaccine against malaria



# Changing the course of HIV

A global initiative Towards an HIV Cure was launched under the auspices of the International AIDS Society. The first objective of a working group of internationally recognized scientists that has been brought together to guide this initiative is to define the scientific priorities that research needs to address to tackle HIV persistence in patients on Highly Active Antiretroviral Therapy (HAART). EMBO Member **FRANÇOISE BARRÉ-SINOUSI** from the Institut Pasteur, France, is co-chairing the working group and advisory board.



© Institut Pasteur France

There are currently two distinct definitions of a cure for HIV. One is called a sterilizing cure — the eradication of HIV from the body. The other, a functional cure, would not eliminate the virus but allow a person to remain healthy without antiretroviral medicine. This global scientific initiative will provide a scientific road map towards both of these approaches. Several strategies are being explored according to the current basic knowledge on HIV replication and persistence: purging the reservoirs by reactivating the virus in latently infected cells;

targeting the residual replication of the virus in patients on HAART; blocking the proliferation of latently infected cells and eliminating infected cells by immune intervention strategies; targeting abnormal immune activation and inflammation in patients on HAART.

“We do not know which strategy will prove successful, but most probably a combined approach will be necessary to achieve a cure,” says *Françoise Barré-Sinoussi* who received the 2008 Nobel Prize in Physiology or Medicine for co-discovering HIV.

The scientific strategy *Towards an HIV Cure* will be officially launched at a scientific symposium in advance of the *AIDS 2012* conference in Washington DC, USA, from 22–27 July.

More information can also be found at: [www.iasociety.org/Default.aspx?pageId=349](http://www.iasociety.org/Default.aspx?pageId=349)

## Expansion for the Pasteur Institute, Rome

Construction work is almost complete. The **ISTITUTO PASTEUR – FONDAZIONE CENCI BOLOGNETTI** ([www.istitutopasteur.it](http://www.istitutopasteur.it)), the Italian member of the Institut Pasteur International Network, will have new laboratories. The newly built facilities are located in premises at Sapienza University in Rome close to other facilities and researchers.

The Institute, which was established according to the legacy of *Beatrice Cenci Bolognetti*, has a thirty-year history of funding research projects at Sapienza University. It directly interacts with the Institut Pasteur in Paris and encourages the study of mechanisms that regulate the fundamental processes of life and disease. The Institut Pasteur International Network – or Réseau – includes 32 members worldwide.

Over the past 30 years, the Institute has supported research projects in microbiology, virology, molecular genetics, cellular and molecular immunology, as well as the biology of malaria and other vector borne diseases. Recently, the institute has also promoted the study of stem cell biology.

A call for applicants will be announced shortly. “The expansion represents an opportunity for scientists from all over the globe to contribute to the research mission of the Pasteur Institute,” says President *Paolo Amati*. “The selected candidates will be chosen by an international scientific committee and awarded five-year positions that are renewable depending upon performance,” adds Amati.



### The Istituto Pasteur – Fondazione Cenci Bolognetti

- Non-profit foundation
- Part of the Institut Pasteur International Network since 1970
- Research activities supported by training programs and initiatives to promote science in society
- Tradition of excellence in the life sciences

## Buchmann Institute for Molecular Life Sciences



© 2011 | Angelina Mitschke

The Frankfurt Institute for Molecular Life Sciences is now the Buchmann Institute for Molecular Life Sciences. The change in name coincides with a significant donation from Frankfurt businessman **JOSEF BUCHMANN** to the activities of Goethe University. The institute was founded in 2009 as a multidisciplinary center of excellence for the study of biological macromolecules. Further information on the activities of the Buchmann Institute for Molecular Life Sciences are available in the winter 2011/2012 issue of *EMBOencounters* (page 13).

## Joining forces for better vaccines

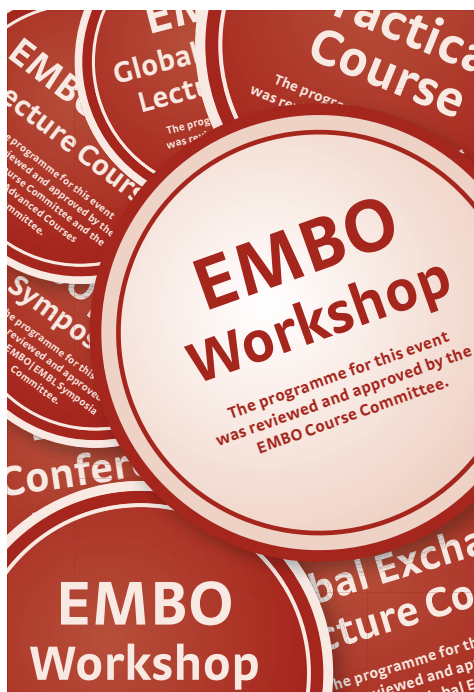
Immunization is one of the most important health advances in history. It is a proven tool for controlling and even eliminating infectious diseases like measles, diphtheria, whooping cough, tetanus, polio and many others. Despite the huge progress, new immunization technologies are needed that can lead to the development of safe and more effective vaccines.

A new high-impact project called ADITEC (Advanced Immunization Technologies) has been founded to accelerate the development of immunization technologies for human vaccines. ADITEC is a 30 million Euro, five-year project funded by the European Commission Seventh Framework (FP7) Programme. It brings together some of the most competitive European research groups from public institutions and biotechnology companies and top US groups working on systems biology and adjuvants. EMBO Member *Rino Rappuoli* from Novartis Vaccines for Global Health and Sclavo Vaccines Association is the project coordinator.

Studies will investigate the effect of adjuvants, vectors, formulations, delivery devices, routes

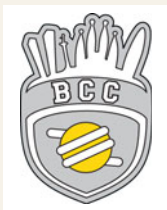
of immunization, immunization schedules, as well as the impact of host factors such as age, gender, genetics and pathologies. A systems biology approach will be used to study licensed and experimental vaccines in patient characterization studies and clinical trials. Pre-clinical models will complement human studies to select novel immunization technologies to be advanced to the clinic.

More information can be found on [www.aditecproject.eu](http://www.aditecproject.eu) or in the April issue of *Science Translational Medicine*.



## Evolution in the time of genomics

The EMBO Workshop *Evolution in the time of genomics* took place in Venice, Italy, in May 2012. The availability of full genome sequences has provided new possibilities for the investigation of evolution. In many cases, bioinformatics tools can be used to investigate evolutionary changes in more detail with even greater precision. The workshop included talks from international scientists interested in using the latest genomics approaches to look at evolution. Topics for discussion ranged from the inheritance of acquired characteristics, mobile elements and genome evolution, and mitochondrial evolution to gene expression and genome variation, as well as approaches for directing evolution. A full meeting report by *Eugene Koonin* will be published in the August issue of *EMBO Reports*.



## Barcelona Chromatin Club founded

Today, Barcelona is considered a desirable address for researchers working on chromatin and epigenetics (see also *EMBOencounters* Summer 2011). The number of Barcelona-based research groups with interests in at least some

aspects of chromatin and epigenetics amounts to almost one hundred. So it does not come as a surprise that Spanish life scientists have now founded the Barcelona Chromatin Club (BCC). The club launched its activities by organizing a series of six-monthly symposia, co-sponsored by the Institute for Predictive and Personalized Medicine of Cancer (IMPPC). The kick-off symposium that took place in mid-June discussed *DNA methylation in cancer – challenges and opportunities*. Topics planned for later sessions include chromatin in pluripotency, epigenetic regulation of tissue development

and regeneration, and novel ways to modify the chromatin building block. According to *Marcus Buschbeck*, EMBO Fellow and BCC coordinator, the symposia offer a unique opportunity for local and international groups to discuss a hot topic during a one-day symposium. PhD students and postdoctoral researchers are an important target group: for them, the BCC provides awards for short talks at each of the symposia and also covers the costs of hotel accommodation. To find out more about upcoming BCC events go to [www.imppc.org](http://www.imppc.org).



# Mollusc and mosquito

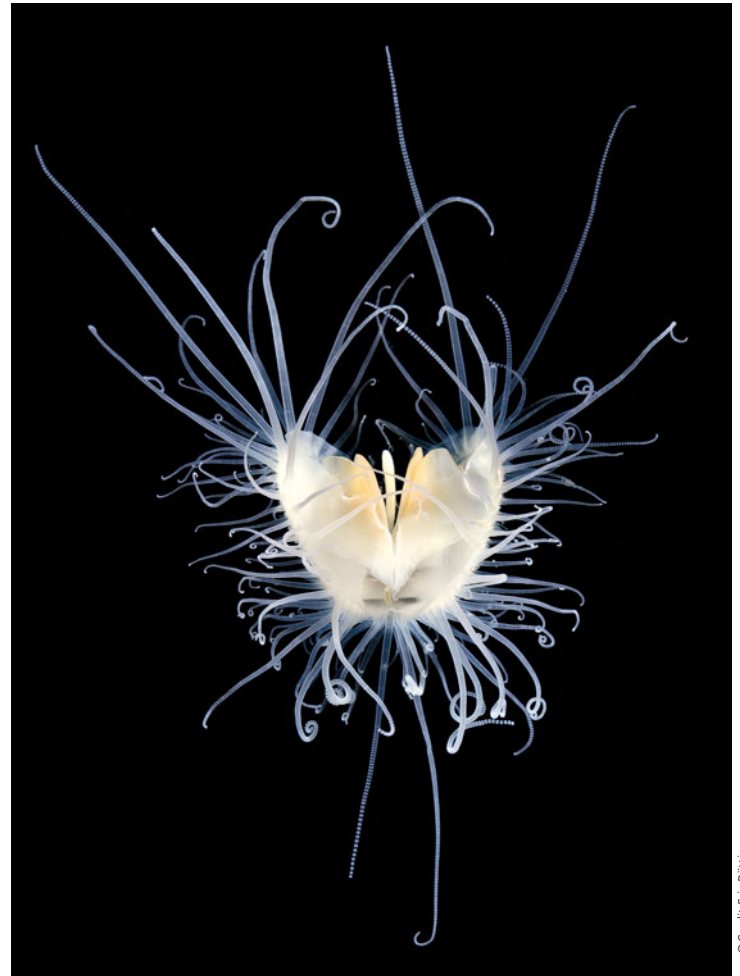


© Martin Oeggerli

Winner Best Scientific Image by Martin Oeggerli: Water-repellent network on the surface of a mosquito egg (from *Culex pipiens*).

Winner Best Non-Scientific Image by Eric Röttinger: A representative of the *Lima* genus: bivalve molluscs that swim by clapping their shells together.

The winners of *The EMBO Journal* Cover Contest 2012 are **MARTIN OEGGERLI** for best scientific image and **ERIC RÖTTINGER** for best non-scientific image.



© Credit Eric Röttinger

An image showing a water-repellent network on the surface of a mosquito egg (from *Culex pipiens*) won the scientific category. “Mosquito eggs are as much revolutionary as they are evolutionary – they are so fascinating, you think you must be dreaming,” says science photographer Oeggerli.

The highest scores in the non-scientific category were for an image of a bivalve mollusc that swims by clapping its shells together.

“Our goal is to highlight the beauty, elegance and fragility of the marine organisms,” says Röttinger who works on marine invertebrates at the Kewalo Marine Laboratory in Hawai’i, USA. For his photo shootings he normally uses a miniature studio with a black or white background and combines it with an aquarium. In this case, the black background made it

possible to better present the filigree tentacles of the *Lima* species, whose natural living environment is a sandy terrain.

Eric is also the co-founder of the non-profit organization Kahi Kai (‘one ocean’ in native Hawai’ian) and has a profound interest in protecting the fascinating and highly endangered marine world. Visit [www.kahikaiimages.com](http://www.kahikaiimages.com) if you would like to see more amazing portraits of sea creatures.

This year, more than 1500 images were submitted to this annual contest. The winning images were published on the front cover of both April issues of *The EMBO Journal*.

To view the winning images and a gallery of the shortlisted pictures visit: [http://covercontest.embo.org/Winners\\_2012.html](http://covercontest.embo.org/Winners_2012.html)

## Editorial

**Managing Editor** Barry Whyte  
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**Web version** Aditya Kusuma Jati  
**E-newsletter** Sandra Krahl, Katja Linssen

## Next issue

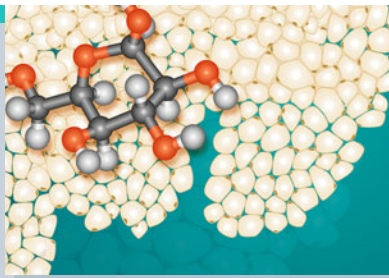
The next *EMBOencounters* issue – **Autumn 2012** – will be dispatched in **October 2012**. Please send your suggestions, contributions and news, to [communications@embo.org](mailto:communications@embo.org) by **17 September 2012**.



# 2012

## EMBO | EMBL Symposia

EMBL Advanced Training Centre | Heidelberg | Germany



### Diabetes and Obesity

13–16 September 2012

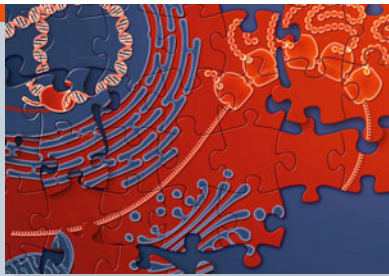
#### ORGANIZERS

Jens **Brüning**  
Matthias **Tschöp**

#### KEYNOTE SPEAKERS

Richard **DiMarchi**  
Jeffrey M. **Friedman**  
Markus **Stoffel**

DEADLINES ABSTRACT SUBMISSION **5 JULY 2012** | REGISTRATION **2 AUGUST 2012**



### Quality Control

From Molecules to Organelles

19–22 September 2012

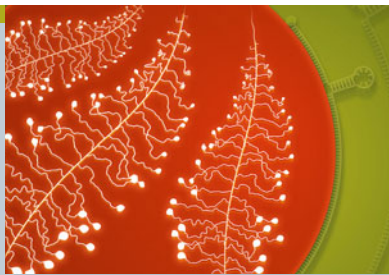
#### ORGANIZERS

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John **Diffley**  
Matthias **Hentze**

#### KEYNOTE SPEAKERS

Elisa **Izaurralde**  
Stefan **Jentsch**  
Jonathan **Weissman**

DEADLINES ABSTRACT SUBMISSION **9 AUGUST 2012** | REGISTRATION **30 AUGUST 2012**



### The Complex Life of mRNA

7–10 October 2012

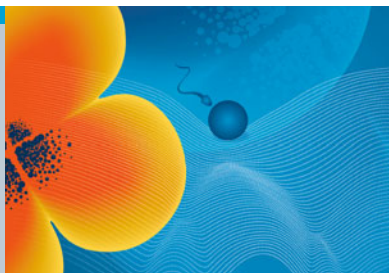
#### ORGANIZERS

Anne **Ephrussi**  
Nahum **Sonenberg**  
Joan A. **Steitz**  
David **Tollervey**

#### KEYNOTE SPEAKERS

Elena **Conti**  
Steven L. **McKnight**  
Nikolaus **Rajewsky**

DEADLINES ABSTRACT SUBMISSION **2 AUGUST 2012** | REGISTRATION **23 AUGUST 2012**



### Germline

Immortality through Totipotency

13–16 October 2012

#### ORGANIZERS

Edith **Heard**  
Ruth **Lehmann**  
Janet **Rossant**

#### KEYNOTE SPEAKERS

Angelika **Amon**  
John **Gurdon**  
Azim **Surani**

DEADLINES ABSTRACT SUBMISSION **9 AUGUST 2012** | REGISTRATION **30 AUGUST 2012**

[www.embo-embl-symposia.org](http://www.embo-embl-symposia.org)



## Events

### EMBO MEMBERS

EMBO Member **Sydney Brenner** of the Salk Institute for Biological Studies, US, is one of the speakers at the Conference on **Systems Biology of Mammalian Cells 2012** from 9–11 July 2012 at the Gewandhaus zu Leipzig, Germany.  
More information at: [www.conventus.de/sbmc2012](http://www.conventus.de/sbmc2012)

## A good read – Publications from the EMBO Community

### Changes in exon–intron structure during vertebrate evolution affect the splicing pattern of exons

Gil Ast (EMBO Member) *et al.*  
*Genome Research* | January 2012  
doi:10.1101/gr.119834.110

### Unsupervised modeling of cell morphology dynamics for time-lapse microscopy

Daniel W. Gerlich (EMBO Young Investigator), Juan P Fededa (EMBO Fellow) *et al.*  
*Nature Methods* | 27 May 2012  
doi:10.1038/nmeth.2046

### Site-specific DICER and DROSHA RNA products control the DNA-damage response

Fabrizio d'Adda di Fagagna (EMBO Member) *et al.*  
*Nature* | 23 May 2012  
doi:10.1038/nature11179

### Rab5 is necessary for the biogenesis of the endolysosomal system *in vivo*

Jerome Gilleron (EMBO Fellow) *et al.*  
*Nature* | 24 May 2012  
doi:10.1038/nature11133

### Peroxisomes are conserved markers of circadian rhythms

Akhilesh B. Reddy (EMBO Young Investigator) *et al.*  
*Nature* | 16 May 2012  
doi:10.1038/nature11088

### Atomic model of the type III secretion system needle

Antoine Loquet (EMBO Fellow) *et al.*  
*Nature* | 20 May 2012  
doi:10.1038/nature11079

### Functional metabolic screen identifies 6-phosphofructo-2-kinase/fructose-2,6-bisphosphatase 4 as an important regulator of prostate cancer cell survival

Almut Schulze (EMBO Young Investigator) *et al.*  
*Cancer Discovery* | April 2012  
doi:10.1158/2159-8290.CD-11-0234

### Spatial partitioning of the regulatory landscape of the X-inactivation center

Nils Blüthgen (EMBO Fellow) *et al.*  
*Nature* | 17 May 2012  
doi:10.1038/nature10499

### Insights into hominid evolution from the gorilla genome sequence

Richard Durbin (EMBO Member), Duncan T. Odum (EMBO Young Investigator) *et al.*  
*Nature* | 8 March 2012  
doi:10.1038/nature10842

## Grants

### European Research Council (ERC) Advanced Grants

Forty-two EMBO Members and Young Investigators were awarded European Research Council (ERC) Advanced Grants in 2012. The list of the latest awardees is downloadable at: <http://erc.europa.eu/erc-funded-projects>

### ESCRT-III governs the Aurora B-mediated abscission checkpoint through CHMP4C

Juan Martin-Serrano (EMBO Young Investigator) *et al.*  
*Science* | 13 April 2012  
doi:10.1126/science.1217180

### The GATA2 transcriptional network is requisite for Ras oncogene-driven non-small cell lung cancer

Axel Behrens (EMBO Member), Madhu S. Kumar (EMBO Fellow) *et al.*  
*Cell* | 27 April 2012  
doi:10.1016/j.cell.2012.02.059

### Mutations in ISPD cause Walker-Warburg syndrome and defective glycosylation of $\alpha$ -dystroglycan

Karen Buysse (EMBO Fellow) *et al.*  
*Nature Genetics* | 22 April 2012  
doi:10.1038/ng.2253

### SUMOylation and phosphorylation of GluK2 regulate kainate receptor trafficking and synaptic plasticity

Inmaculada M González-González (EMBO Fellow) *et al.*  
*Nature Neuroscience* | 22 April 2012  
doi:10.1038/nn.3089

### DBIR complex integrates alternative mRNA splicing with RNA polymerase II transcript elongation

Pierre Close (EMBO Fellow) *et al.*  
*Nature* | 19 April 2012  
doi:10.1038/nature10925

### Telomeric DNA damage is irreparable and causes persistent DNA-damage-response activation

Maria Pia Longhese, Fabrizio d'Adda di Fagagna (EMBO Members) *et al.*  
*Nature Cell Biology* | 18 March 2012  
doi:10.1038/ncb2466

### Synchronization of secretory protein traffic in populations of cells

Valentina Mercanti (EMBO Fellow) *et al.*  
*Nature Methods* | 11 March 2012  
doi:10.1038/nmeth.1928

### Tonic signaling from O<sub>2</sub> sensors sets neural circuit activity and behavioral state

Karl Emanuel Busch (EMBO Fellow) *et al.*  
*Nature Neuroscience* | 4 March 2012  
doi:10.1038/nn.3061

### Long-term, efficient inhibition of micro-RNA function in mice using rAAV vectors

Stefan L. Ameres (EMBO Fellow) *et al.*  
*Nature Methods* | 4 March 2012  
doi:10.1038/nmeth.1903

## Awards of excellence

### EMBO MEMBERS

#### Cozzarelli Prize

US National Academy of Sciences

**Roland Kanaar** and colleagues have been awarded the 2011 Cozzarelli Prize for the paper Mild hyperthermia inhibits homologous recombination, induces BRCA2 degradation, and sensitizes cancer cells to poly(ADP-ribose) polymerase-1 inhibition. In total, the *Proceedings of the National Academy of Sciences* (PNAS) Editorial Board has selected six papers published by PNAS in 2011 to receive the Cozzarelli Prize.

#### Royal Medal

Royal Society of London

**Robin Holliday** has been awarded a Royal Medal for his influential discoveries of the 'Holliday junction' molecular structure and the function of DNA methylation. The Royal Medal is awarded for important contributions in the physical, biological and applied sciences.

#### German Cancer Aid Award

German Cancer Aid

**Peter Krammer** of the German Cancer Research (Deutsches Krebsforschungszentrum, DKFZ) is awarded the 2011 German Cancer Aid Award (Deutscher Krebshilfe Preis) jointly with Professor Dr. **Klaus-Michael Debatin** of Ulm University Hospitals. The award is given to the two scientists in recognition of their pioneering research into signaling pathways that lead to cell death and can slow down cancer growth.

#### Ernst Jung Prize

Ernst Jung Foundation for Science and Research

The 2012 Ernst Jung Prize for Medicine is shared by **Elisa Izaurralde** of the Max Planck Institute for Developmental Biology in Tübingen, Germany, and **Peter Walter** from the Howard Hughes Medical Institute in San Francisco, US. Elisa Izaurralde is recognized for her contributions to the field of RNA-mediated gene regulation. Walter receives the prize for his work on the mechanisms of production and quality control of secretory proteins. Both winners share the 300,000 Euros prize money.

#### Senior Scientist Award

International Society For Computational Biology (ISCB)

**Gunnar von Heijne**, director of the Stockholm Center for Biomembrane Research in Sweden, has been recognized with the *Accomplishment By a Senior Scientist Award* for his contribution to the field of computational biology. "He is one of the few who completely changed the field using computational methods and also had an experimental lab running," commented Burkhard Rost, president of the ISCB.

## Appointments

### EMBO MEMBER

EMBO Member **Hans Clevers**, director of the Hubrecht Institute for Developmental Biology and Stem Cell Research (Utrecht, the Netherlands), succeeded Robbert Dijkgraaf as President of the Royal Netherlands Academy of Arts and Sciences (KNAW) on 1 June 2012.

### InBev-Baillet Latour Health Prize

Artois-Baillet Latour Foundation

**Gero Miesenböck** from the University of Oxford, UK, was awarded this prize for his work in neurosciences. He has pioneered the field of optogenetics, which uses genetic strategies for imaging nerve cell activity and for controlling with light the function of brain cells and animal behavior. Worth 250,000 Euros, this is one of the most important science prizes in Belgium.

### Teva Prize

Teva Pharmaceutical Industries Founders

**Karen B. Avraham** of the Tel Aviv University, Israel, was awarded the 2011 Teva Prize for groundbreaking research in the field of rare diseases. The jury recognized her as "one of the leading researchers in the world in inherited hearing loss."

### E.C. Stakman Award

University of Minnesota

**Jonathan Jones** of the Sainsbury Laboratory at the Norwich Research Park, UK, has received the 2012 E.C. Stakman Award for his outstanding achievements in the field of plant pathology.

### YOUNG INVESTIGATORS

#### Friedrich Miescher Award

Swiss Society for Biochemistry

**Richard Benton** of the University of Lausanne, Switzerland, received this prize considered Switzerland's highest honour for upcoming researchers in the field of biochemistry. Benton also received the **Young Investigator Award for Research in Olfaction** from the Association for Chemoreception Sciences this year.

#### Göran Gustafsson Prize for Chemistry

Göran Gustafsson Foundation

**Luca Jovine** of the Karolinska Institute, Sweden, is awarded this prize for his crystallographic studies of fertilization. The award is considered the most important prize for young researchers in Sweden.

#### Wellcome Trust Senior Research Fellowship

**Rob Klose** of the University of Oxford has been selected as a Wellcome Trust Senior Research Fellow this year. This highly competitive fellowship lasts five years and provides core support for postdoctoral scientists based in academic institutions in the UK and Republic of Ireland.

# Nissa, la bella Nice, la belle



Nice, the city of great sea views at the heart of the French Riviera, is the venue of *The EMBO Meeting 2012*, which will take place 22–25 September. To help participants fill their free time in-between or after the scientific sessions, *EMBOencounters* asked the local scientific community for their favourite spots in town.

For a short exercise, walk up to the *chateau* and enjoy a breathtaking view of the sea and the old town. A tea at the hotel *La Perouse* is another opportunity to admire the blue waters of the Mediterranean Sea.

EMBO Member *Minoo Rassoulzadegan* from the University of Nice recommends to visit the old town early in the morning and to take a walk along the promenade from the harbour to the flower market *cours Saleya*. "A coffee outside the nearby baroque church *La Misericorde* with a view of the chateau is just a perfect experience," she says.

"Walk in the narrow street of old town and stop by at *Chez René* off *Rue Pairolière* to get *socca* (a crêpe made with chick pea flour), and Corsica beer à *la chataigne*. The restaurant *la Merenda* in the *Rue Miralheti* is my favorite place to have *beignets de fleurs de courges* (fried zucchini blossoms) or *sardines farcies* (stuffed sardines) and other local delicacies. It is a small and charming restaurant with no phone or credit card service. For a late-night experience, the pubs *Akathor* and *Shapko* offer a relaxed atmosphere and live music."

"For a peaceful moment, visit the *Art Asiatique* museum on the sea border or move up the hill to the *Matisse Museum*. Do not forget the *Monastère de Cimiez*, a convent showing fifteen-century paintings by the locally prominent *Bréa* brothers. From the magnificent gardens, you'll have an impressive view of the *Baie des Anges*. *Matisse* is buried in the convent's cemetery."

EMBO Fellow *Ruby Shalom-Feuerstein* suggests a drive along the famous *Cote d'Azur Corniches* – some of the most spectacular roads in the world, running between Nice and Monaco. The highest of them, the *Grande Corniche*, is famous for its film appearances, including *Grace Kelly* and *Cary Grant* driving along it in *To Catch A Thief*.



Cours Saleya market in the morning



A view of Place Massena



Modern art at the Valrose Université tram stop



Minoo Rassoulzadegan in the cours Saleya market

the4th  
**EMBO**  
meeting

22–25 SEPTEMBER 2012

There is still time to register.

On-line registration closes  
**4 September.**

See [www.the-embo-meeting.org](http://www.the-embo-meeting.org) for the full programme.