



MESSAGE FROM EMBO EXECUTIVE DIRECTOR

Strengthening science across Europe

The EMBO strategy



EMBO was established over 40 years ago to promote molecular biology in Europe. The organisation's interpretation of "Europe" in this mission is important and has evolved in line with changes in the economy, geography and science. EMBO's strategy today is very much inclusive, not only supporting the best research in the strongest scientific countries, but also working to raise standards throughout all of Europe.

So how does this work in practice? EMBO Short-Term Fellowships have been networking scientists for 40 years, providing an excellent source of advanced training and contacts for less well-known research groups. In recent years, statistics have shown that countries defined as developing, in terms of the number of publications per capita, make greater use of short-term fellowships than countries with more established scientific infrastructures. For long-term fellowships, the success rate of these countries is as high as others, but the application rate is relatively low.

EMBO Courses, Workshops and Conferences cater for scientists from all over the world and are held throughout every EMBO Member State. The EMBO Members Meeting, a showcase for high-quality European science, has taken place throughout Europe including the Czech Republic, Greece, Ireland, Poland and Portugal. Every year EMBO also organises a meeting of EMBO Young Investigators and Howard Hughes Scholars in a Central European country, with the 2007 meeting set

to take place in Estonia. These events provide fertile ground for discussions on the needs of the scientific community in this region. In this way, EMBO ensures its activities are spread throughout all of its member states.

This pattern of bringing EMBO into countries on the curve of scientific development will continue. In recent years, the most significant European initiative in this area has been the launch of EMBO Installation Grants. The new scheme aims to strengthen science in particular countries, offering an attractive funding and networking package to encourage scientists to relocate and establish their groups there. The scheme was launched after considerable analysis, including a survey of EMBO Fellows, which uncovered funding uncertainties as a major barrier to returning to their countries after starting a research group.

Participation by the EMBO Member States is optional with countries taking part in an à-la-carte manner. Member countries provide scientists relocating to institutes in their countries with an annual grant of 50,000 euro for a period of five years. In this way, the limited funds available in these countries are retained there. Successful candidates have the added security of a commitment from their institutes to support them beyond the duration of the grant. 2006 saw the first application round with Croatia, the Czech Republic, Estonia, Poland, Portugal and Turkey participating. Over 70 scientists applied and the awardees, carefully selected by the EMBO Young Investigator Committee, will be announced very soon.

EMBO believes that supporting the scientific communities in these countries is an essential component of the overall European strategy to increase investment throughout Europe, particularly via the framework programmes. By ensuring that the best scientists set up their laboratories in countries that might not normally be attractive, EMBO is playing an important role in strengthening life

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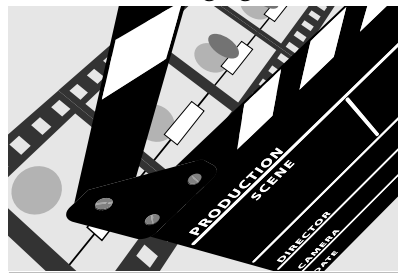


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2007 application deadline

15
April

EMBO
Installation
Grants
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sciences throughout the continent. It pursues this goal at all times with a commitment to scientific excellence and selection on the basis of quality alone.

Frank Gannon

Leading scientists join EMBO ranks

2006 EMBO Members

In October 2006, EMBO announced the election of 49 leading scientists to its membership. Over 1,200 of the world's finest researchers carry the title of "EMBO Member" and every year, new members are elected on the basis

of scientific excellence. The latest scientists to join the EMBO community come from a broad cross-section of the molecular life sciences. Representing 14 different countries, 44 of the new members are based in Europe, while five

distinguished scientists from the USA and China receive the special honour of associate membership.

■ www.embo.org/about_embo/press/new_members06.html

- **Ruedi Aebersold**
IMSB, ETH Zurich, CH
- **Bruno Amati**
European Institute of Oncology (IEO)
Milan, IT
- **Sebastian Amigorena**
Institut Curie, Paris, FR
- **Stylianos Antonarakis**
University of Geneva Medical School/
University Hospitals Geneva, CH
- **Dennis Bamford**
University of Helsinki, FI
- **Tobias Bonhoeffer**
Max Planck Institute of Neurobiology
Martinsried, DE
- **Allan Bradley**
Wellcome Trust Sanger Institute
Cambridge, UK
- **Désiré Collen**
University of Leuven, BE
- **Gianni del Sal**
National Laboratory of the Interuniversity
Consortium for Biotechnologies (LNCIB)
Trieste, IT
- **Suzanne Eaton**
Max Planck Institute of
Molecular Cell Biology and Genetics
Dresden, DE
- **Martin Eilers**
IMT, Philipps-University of Marburg, DE
- **Jan Ellenberg**
European Molecular Biology Laboratory,
Heidelberg, DE
- **Marc Feldmann**
Imperial College London, UK
- **Anne C. Ferguson-Smith**
University of Cambridge, UK
- **Michael Gait**
MRC Laboratory of Molecular Biology
Cambridge, UK
- **Magdalena Götz**
GSF Institute of Stem Cell Research
Neuherberg, DE
- **Gillian Griffith**
University of Oxford, UK
- **Carlos Ibáñez**
Karolinska Institute, Stockholm, SE

- **Alain Jacquier**
Institut Pasteur, Paris, FR
- **Olli Kallioniemi**
VTT Technical Research Centre of Finland/
University of Turku, FI
- **Christian Klämbt**
University of Münster
- **Eva Kondorosi**
CNRS Plant Science Institute (ISV)
Gif-sur-Yvette, FR
- **Ulf Landegren**
Uppsala University, SE
- **Krzysztof Liberek**
University of Gdansk/
Medical University of Gdansk, PL
- **Isabelle Mansuy**
ZMZ, University of Zurich/
ETH Zurich, CH
- **Patrick Mehlen**
Léon-Bérard Cancer Center
Lyon, FR
- **Bénédicté Michel**
CNRS Centre for Molecular Genetics (CGM),
Gif-sur-Yvette, FR
- **Anthony P. Monaco**
Wellcome Trust Centre for Human Genetics,
Oxford, UK
- **Salvador Moncada**
UCL The Wolfson Institute for Biomedical
Research, London, UK
- **Jacques Neefjes**
Netherlands Cancer Institute (NKI),
Amsterdam, NL
- **Poul Nissen**
CSB, University of Aarhus, DK
- **Valerio Orlando**
Dulbecco Telethon Institute, Naples, IT
- **Francesc Posas**
Pompeu Fabra University, Barcelona, ES
- **Peter J. Ratcliffe**
Wellcome Trust Centre for Human Genetics,
Oxford, UK
- **Caetano Reis e Sousa**
Cancer Research UK
London Research Institute, UK
- **Artur Scherf**
Institut Pasteur, Paris, FR

- **Manfred Schliwa**
ABiCB, Ludwig-Maximilian University
Munich, DE
- **Paul Schulze-Lefert**
Max Planck Institute for Plant Breeding
Research, Cologne, DE
- **Murray Stewart**
MRC Laboratory of Molecular Biology,
Cambridge, UK
- **Frank Uhlmann**
Cancer Research UK
London Research Institute, UK
- **Jean-Paul Vincent**
MRC National Institute for Medical Research,
London, UK
- **Michael Way**
Cancer Research UK
London Research Institute, UK
- **Andrew Wilkie**
Weatherhall Institute of Molecular Medicine,
Oxford, UK
- **Rolf Zeller**
DKBW Centre for Biomedicine
University of Basel, UK

ASSOCIATE MEMBERS

- **Joanne Chory**
Salk Institute for Biological Studies
La Jolla, US
- **Ronald M. Evans**
Salk Institute for Biological Studies
La Jolla, US
- **Lee Hood**
Institute for Systems Biology
Seattle, US
- **Bruce M. Spiegelman**
Dana Farber Cancer Institute/
Harvard Medical School, Boston, US
- **Huanming Yang**
Genomics Institute Beijing, CN

2007 deadline

15
March
EMBO Members:
Submission of
ballot papers for
2007 election

Success in research: Formula of a medal winner

Frank Uhlmann wins EMBO Gold Medal

If *Frank Uhlmann* had pursued his childhood fascination for physics and cosmology, he might never have taken the path that won him the EMBO Gold Medal in October this year. Fortunately, biochemistry also captured his attention, culminating in what EMBO Executive Director *Frank Gannon* described as “a decade of extraordinary work that has revolutionised our understanding of the cell cycle.”

The EMBO Gold Medal is awarded annually to a young European researcher for outstanding contributions to research in the molecular life sciences. Widely regarded as the most prestigious award of its kind in Europe, the Gold Medal highlights the standards being reached by European researchers – bringing the very best of these to the attention of a global audience.

Winning the Gold Medal marks an incredible high point in his career, says Frank, and one he could never have predicted during his undergraduate studies at the University of Tübingen or his PhD at the Memorial Sloan-Kettering Cancer Center in New York. Even as a post-doc at the Research Institute of Molecular Pathology (IMP) in Vienna, where he made his first major discovery, Frank had no grand plans to make a career in research or run his own lab, as he now does at the London Research Institute (LRI).

For Frank, each next step has been driven not by ambition, but by a pure and simple passion for his subject. “All I knew was that the work was super-interesting. I just did what I enjoyed without thinking where it would lead.” This unpretentious approach paid off and Frank went on to work for *Hans Probst*, *Jerry Hurwitz* and EMBO Member *Kim Nasmyth*. “I was very lucky to have such inspiring role models. I learned a great deal from them and was constantly motivated.”

Frank also cites other factors that have helped his career. A six-year diploma in biochemistry and physiological chemistry at the University of Tübingen provided him with a thorough grounding in a variety of disciplines. Regular laboratory work, not always offered at the undergraduate stage, gave him a feel for the bench early on. A one-year placement in six different labs at the Max Planck Institute for Biochemistry in Martinsried had a particular impact, exposing him to a wide range of techniques and experimental approaches.

The broad scope of this early training, combined with some very productive biochemistry



The EMBO Gold Medal award ceremony

photo by Ian M. Spooner

research during his PhD, stood Frank in good stead for his post-doc at the IMP. It was there that he really put his multi-disciplinary background to work, combining novel techniques in biochemistry, cell biology and genetics to uncover the trigger for mitosis, one of the most significant events in the life of eukaryotic cells. Frank has pushed these discoveries even further since setting up his own group at the LRI, deciphering other mechanisms that are key to understanding how mistakes in mitosis can lead to cancer.

An impressive track record, but Frank remains modest, attributing a large part of his success to being in the right place at the right time. “I was lucky to join the IMP at a time when Kim and others had already established the field and big questions were still waiting to be answered.” Kim Nasmyth is more effusive about the “special blend of technical competence, good judgement and fearlessness” Frank brought to the lab. “Frank was the one who took the risks and pulled off a remarkable series of experiments.”

When asked what he thinks it takes to make it in research, Frank stresses the need to be focussed. “There are numerous interesting questions out there, but you have to be able to focus in on good problems.” He also has some valuable advice for researchers starting out at the bench. “Things are not always as complicated as they seem. Test the simplest hypotheses first”.

■ www.embo.org/communities/embo_medal.html

2007 deadline

30
April

**EMBO Members:
Nomination of
Gold Medal
candidates**

Presenting the 2005 EMBO Members

EMBO Members Meeting in Sheffield



photos by Ian M. Spooner

England's "Steel City", Sheffield, played host to this year's EMBO Members Meeting from 13-16 October. The steel industry is long gone from the city but a major academic centre remains. Renowned for its research, the University of Sheffield made an appropriate setting for the meeting, which welcomes some of the world's most talented researchers to the EMBO membership every year.

The annual EMBO Members Meeting, *Frontiers of Molecular Biology*, gives EMBO Members elected the previous year the chance to present their research to the EMBO community. This is a unique networking event, bringing together leading scientists from all corners of the life sciences community. The 2006 meeting, organised by EMBO Member *Philip Ingham*, was typically diverse with fascinating presentations demonstrating the range and quality of research being carried out in Europe today.

The talks were tailored to a general scientific audience, giving participants a rare chance to look outside their own sphere of reference and gain a glimpse of research in other areas. The meeting also featured a special epigenetics mini-symposium, a field that was well represented amongst the new members. *Adrian Bird*, EMBO Member since 1986, opened the symposium taking his audience through the

incredible story of a mouse model created by his research team for Rett Syndrome, a rare neurological disorder.

In addition to the intense interaction during the scientific parts of the meeting, the members got particularly involved in discussions at a media communication session organised by the EMBO Science & Society Programme. *Sue Nelson*, freelance journalist and former Science Editor at the BBC in London, fielded participants' questions and comments on the media's reporting of science. Interactive exercises and lively role-play helped prepare participants for interviews with the media and how to represent their research in an accurate but digestible way.

The meeting ended on a high point with a lecture by the 2006 EMBO Gold Medal winner *Frank Uhlmann* on his extraordinary work on the cell cycle (see page 3) and an EMBO Nobel Lecture on energy conversion in mitochondria by *Sir John E. Walker*, EMBO Member since 1984. The next EMBO Members Meeting will take place in October 2007 in Barcelona, Spain. The speakers will include the EMBO Members who were elected to the organisation in October this year (see page 2).

■ www.embo.org/communities/members.html

Annual meeting of EMBO Council

2006 election results

Members of the EMBO Council gathered in Heidelberg for their annual meeting on 25–27 September 2006. Made up of 15 EMBO Members, the Council meets annually with the EMBO management to discuss and review the organisation's activities. This year the meeting was hosted for the first time by *Tim Hunt*, who was re-elected as Chair for 2007. *Anton Berns* was elected as Vice-Chair to replace *Erik Boye*.

The annual meeting also saw the re-election of *Kai Simons*, *Tim Hunt* and *Gunnar von Heijne* for the period 2007–2009. Co-opted for the same period were *Ari Helenius* and *Daniela Rhodes*. The next ordinary meeting of Council is planned for 10–11 October 2007.

■ www.embo.org/about_embo/council_committees.html

The EMBO Council (as of January 2007)

- **Anton Berns** (Vice-Chair)
- **Margaret Buckingham**
- **Roberto di Lauro**
- **Ingrid Grummt**
- **Ari Helenius**
- **Tim Hunt** (Chair)
- **Daniel Louvard**
- **Carlos Martinez-A.**
- **Marjori Matzke**
- **Daniela Rhodes**
- **Benny Shilo**
- **David Shore**
- **Kai Simons**
- **Gunnar von Heijne**
- **Maciej Żylicz**

Talented young group leaders win EMBO support

2006 EMBO Young Investigators

In November 2006, EMBO announced the selection of 21 young group leaders to receive the support of its prestigious Young Investigator Programme. Identifying some of the brightest young researchers in Europe has been the goal of the programme since its inception in 2000.

This continues with the selection of these outstanding scientists from a pool of over 150 excellent candidates across Europe.

Selection as an EMBO Young Investigator is a mark of the highest scientific excellence. The three-year programme provides academic,

practical and financial support in the early years of their independent careers. A range of benefits help smooth the transition between setting up independently and establishing a reputation in the scientific community.

→ **François-Xavier Barre** (FR)

Cell division in bacteria
CNRS Centre for Molecular Genetics,
Gif-sur-Yvette

→ **Sigal Ben-Yehuda** (IL)

DNA damage repair in sporulation
Hebrew University, Jerusalem

→ **Simon Boulton** (UK)

DNA damage response in C. elegans
Cancer Research UK
London Research Institute
South Mimms

→ **Dirk Bumann** (DE)

Salmonella-host interactions
Hannover Medical School

→ **Jérôme Cavaille** (FR)

Function of non-coding RNA
University of Toulouse

→ **Vincenzo Costanzo** (UK)

DNA damage response in Xenopus laevis
Cancer Research UK
London Research Institute,
South Mimms

→ **François Fuks** (BE)

DNA methylation in mammals
Free University of Brussels

→ **Johanna Ivaska** (FI)

Integrin traffic and signalling in cancer
Turku Centre for Biotechnology

→ **Bruno Klaholz** (FR)

Complexes in gene expression
Institute of Genetics and Molecular and
Cellular Biology (IGMBC), Strasbourg

→ **Jean-Christophe Marine** (BE)

Key modifiers of p53
Flanders Interuniversity Institute for
Biotechnology (VIB), Ghent

→ **Annette Oxenius** (CH)

Host-pathogen interactions
Institute of Microbiology, ETH Zurich

→ **Philippe Pasero** (FR)

Maintenance of genome integrity
CNRS Institute of Human Genetics,
Montpellier

→ **Maria Rescigno** (IT)

Dendritic cells in infection and cancer
European Institute of Oncology (IEO)
Milan

→ **John Rouse** (UK)

Regulators of genome stability
MRC Protein Phosphorylation Unit,
University of Dundee

→ **Dirk Schübeler** (CH)

*Dynamics and propagation of
epigenetic states*
Friedrich Miescher Institute, Basel

→ **Luca Scorrano** (IT)

Mitochondria-shaping proteins
Venetian Institute of Molecular Medicine
Padova

→ **Victor Sourjik** (DE)

Bacterial chemotaxis
ZMBH, University of Heidelberg

→ **Irina Stancheva** (UK)

Epigenetic silencing
Wellcome Trust Centre for Cell Biology,
University of Edinburgh

→ **Jussi Taipale** (FI)

Growth control and cancer
Biocentrum, University of Helsinki

→ **Miltos Tsiantis** (UK)

Comparative leaf development
University of Oxford

→ **Antonella Viola** (IT)

T-cell activation
Venetian Institute of Molecular Medicine
Padova

■ www.embo.org/about_embo/press/new_yips06.html

EMBO LABORATORY MANAGEMENT COURSES 2007

15–18 January EMBO Laboratory Management Courses

16–19 April (open to all independent scientists)

8–11 October

5–8 November

8–11 May EMBO Laboratory Management Courses

24–27 September (for EMBO Fellows)

www.embo.org/yip/lab_mgm.html

EMBO INSTALLATION GRANTS

► AWARD

■ € 50,000 annually for five years

■ Full integration into EMBO Young Investigator network

► ELIGIBILITY

■ Group leaders establishing labs in a participating country (currently *Croatia, Czech Republic, Estonia, Portugal, Poland, Turkey*)

■ Job offer in a participating country at the time of application

■ Location outside receiving country for at least two years prior to application

► ANNUAL APPLICATION DEADLINE

15 April

► www.embo.org/sdig

Upcoming application deadlines

15
February

EMBO
Long-Term
Fellowships

1
April

EMBO
Young Investigator
Programme

PRACTICAL COURSES (EUROPE)

- **Mass spectrometry and proteomics**
DK – Odense, 22–27 April
- **High-throughput microscopy for systems biology**
DE – Heidelberg, 30 April–5 May
- **RNAi**
FI – Helsinki, 6–12 June
- **Tissue microarray construction and image analysis**
IE – Dublin, 11–15 June
- **Light microscopy in living cells**
PT – Oeiras, 14–22 June
- **Microinjection and detection of probes in cells**
DE – Heidelberg, 17–22 June
- **Exploiting anomalous scattering in macromolecular structure determination**
FR – Grenoble, 18–22 June
- **High-throughput methods for protein production and crystallization**
UK – Oxford, 20–28 June
- **Quantification of target sequences by qPCR**
DE – Heidelberg, 23–28 June
- **Identification and characterization of protein complexes using the TAP method**
DE – Heidelberg, mid-2007
- **Structure determination of biological macromolecules by solution NMR**
CH – Basel, 6–13 July
- **BioXAS on metalloproteins and organism tissue**
DE – Hamburg, 10–15 July
- **Animal models for development, physiology and disease**
UK – Sheffield, 16–28 July
- **Shotgun proteomics**
UK – York, 23–26 July
- **Current methods in cell biology**
DE – Heidelberg, 22–31 August
- **SNP genotyping and genome-wide association**
FI – Helsinki, 27 August–1 September
- **Image processing for cryo-electron microscopy**
UK – London, 2–12 September
- **Chromatin immunoprecipitation and related techniques**
DE – Heidelberg, 3–8 September
- **Cytoskeletal dynamics: From biology to physics**
FR – Gif-Sur-Yvette, 24 September–4 October

PRACTICAL COURSES (WORLD)

- **Molecular immunology of protozoan infections**
AR – Buenos Aires, 18–31 March
- **Bioinformatics and comparative genome analysis**
TN – Tunis, 18 March–7 April
- **Comparative genomics**
BR – Rio de Janeiro, 9–15 April

PRACTICAL COURSES (WORLD) cont.

- **Imaging in 3D and the F-techniques: FRET, FCS, FILM and FRAP**
SG – Singapore, 2–13 July
 - **DNA microarray**
IN – Tamil Nadu, 11–16 August
-
- WORKSHOPS (EUROPE)**
- **Membrane traffic in the secretory pathway**
AT – Goldegg am See, 9–14 January
 - **Pathogens and diseases meet the immune system**
FR – Marseille, 11–13 January
 - **Viral RNA: Structure, function and targeting**
DE – Heidelberg, 5–7 March
 - **The role and control of GATA factors in tissue development and disease**
IT – Capri, 14–17 April
 - **The molecular biology and biochemistry of septins and septin function**
CH – Tessin, 6–10 May
 - **Molecular biodiversity and DNA barcode**
IT – Rome, 17–20 May
 - **Intrinsically unfolded proteins: Biophysical characterisation and biological significance**
HU – Budapest, 23–28 May
 - **Plant DNA repair and recombination**
FR – Giens, 31 May–3 June
 - **DNA supercoiling and topoisomerases**
FR – Frejus, 17–22 June
 - **The chemistry and biochemistry of catalysis by biological systems**
DE – Hamburg, 20–22 June
 - **Intracellular RNA localization and localized translation**
IT – Il Ciocco, 1–7 July
 - **Model systems for infectious disease and cancer in Zebrafish**
NL – Leiden, 16–18 July
 - **Methods in membrane protein research**
SE – Stockholm, 23–25 August
 - **EMBO Molecular Medicine Workshop: Drug action and chemical biology in the post-genomic era**
AT – Vienna, 23–26 August
 - **RNA viruses: Replication, evolution and drug design**
AT – Vienna, 27–30 August
 - **Current challenges and problems in phylogenetics**
UK – Cambridge, 3–7 September
 - **EMT in development and disease**
PL – Krakow, 10–12 September
 - **Endocytic systems: Mechanism and function**
CH – Les Diablerets, 18–23 September

WORKSHOPS (WORLD)

- **8th European Meiosis Meeting**
JP – Kanagawa, 13–18 September

CONFERENCE SERIES (EUROPE)

- **Pre-mRNA processing and disease**
IT – Cortina D'Ampezzo, 14–17 January
- **Nuclear receptors: Structure and function in health and disease**
IT – Gardone, 1–5 May
- **From basic genomics to systems biology**
BE – Ghent, 2–4 May
- **Chromatin and epigenetics**
DE – Heidelberg, 3–7 May
- **Molecular and cellular mechanisms of immune regulation**
IT – Sardinia, 7–12 May
- **Lymphocyte antigen receptor and co-receptor signaling**
IT – Siena, 24–28 May
- **Ubiquitin and ubiquitin-like modifiers**
IT – Il Ciocco, 7–11 June
- **The biology of molecular chaperones**
PT – Tomar, 9–14 June
- **Protein phosphatases in health and disease**
PT – Aveiro, 24–28 July
- **Nuclear structure and dynamics**
FR – Montpellier, 1–5 September
- **Protein synthesis and translational control**
DE – Heidelberg, 12–16 September
- **The assembly and function of neuronal circuits**
CH – Ascona, 23–28 September

EMBO-FEBS LECTURE COURSES (EUROPE)

- **Cellular and molecular biology of membranes**
FR – Cargese, 18–29 June
- **Molecular mechanisms in signal transduction and cancer**
GR – Spetses, 15–24 August

EMBO-ESF SYMPOSIA

- **Biological surfaces and interfaces**
ES – San Feliu de Guixols, June
- **Biomagnetism and magnetic biosystems based on molecular recognition processes**
ES – San Feliu de Guixols, September

All events in 2007

www.embo.org/about_embo/calendar.php

Bi-annual application deadlines for organisers to apply for EMBO funds

1
February

1
August

EMBO Courses & Workshops

SPOTLIGHT ON...

EMBO Science & Society Programme

Making science make sense

"The problem with communication is the illusion that it has been accomplished." These words from George Bernard Shaw can also apply when evaluating effective science communication. Science has given society a large amount of useful information. To be of any benefit, however, it has to be understandable.

In 2003, the Marie Curie Fellowship Association carried out a survey of its fellowship holders to determine which professional skills they thought were necessary for scientists to develop. "Communication with the public" was considered important by 76% of respondents, coming higher up the list than skills such as time management, business administration and even scientific skills outside the researchers' current fields.

Making science and scientists more accessible to society has been the aim of EMBO's Science & Society Programme for the past seven years. Supporting scientists in the development of communication skills, promoting the input of life scientists into policy-making and encouraging public dialogue on important issues have been its cornerstones.

Today's successful scientist needs to be a good communicator and motivator. EMBO supports science communication through a variety of initiatives co-ordinated by its Science & Society Programme. These include media workshops for biologists, awards for communication and science writing, and workshops for science teachers.

Being able to clearly communicate one's research to the public requires a good understanding of how the media works. Through EMBO's Media Workshops for Biologists, scientists develop and practice the public communication skills they need in order to interact successfully with the press. A media training DVD based on one of these workshops is now available (see page 10).

The programme also recognises and rewards excellence in science communication through two annual competitions: the EMBO Award for Communication in the Life Sciences and the EMBO/EMBL Science Writing Prize. The former is presented to a practising scientist for outstanding communication with the public (see page 9). The EMBO/EMBL Science Writing Prize is awarded for a creative piece of writing communicating a scientific idea.

Improving the quality of science education at the secondary level is the impetus behind another programme initiative. The annual

International Workshops on Secondary School Biology Education regularly host over 120 educators from more than 20 countries. Through hands-on practical experiments and scientific talks, participants have the chance to update their skills and share new teaching techniques with their colleagues. A teacher's guide and DVD of the workshop is available on request.

The Science & Society pages on the EMBO website give teachers access to resources from past workshops, including experiment protocols and practical demonstrations. A searchable database, covering a broad range of scientific subjects, links teachers with external educational resources such as virtual laboratories, forums and classroom kits.

European science and technology can only advance with the help of science and society actions at the pan-European level. International organisations like EMBO therefore have a key role to play in supplementing existing national endeavours.

Andrew Moore

Policy-making, public debate and education need concerted and consistent input from life scientists. The programme provides a forum for this through focussed meetings on important topics, resulting in policy documents on issues such as stem cell science and the use of animals in research. The growing field of biotechnology ethics has also prompted EMBO, through the Science & Society Programme, to become one of sixteen partners involved in the BioTethed project. This initiative promotes biotechnology ethics and its interaction with other fields of science, scientists and the general public.

Special sessions on science and society are also organised through the programme to encourage public dialogue on issues of social importance with input from scientists



Andrew Moore, Programme Manager
Alessandra Bendiscioli, Administrator

and other professionals. These sessions are part of the annual EMBO Members Workshop. Themes from past events have included genes and behaviour, communicating with the public and politicians, genetically-modified foods, and communication and trust in molecular biology.

Annual international conferences, organised in conjunction with EMBL, focus on scientific topics making the headlines. The most recent of these, held from 3–4 November 2006, was entitled "Genes, Brain/Mind and Behaviour". DVDs of conference proceedings and special issues of *EMBO reports* reflect conference themes. Past conferences have covered topics such as science and security, time and ageing, genetics, determinism and human freedom, and infectious diseases.

Over the years, EMBO's Science & Society Programme has remained focussed on making science more understandable to society, thereby complementing other initiatives. "European science and technology can only advance with the help of science and society actions at the pan-European level," says programme manager, *Andrew Moore*. "International organisations like EMBO therefore have a key role to play in supplementing existing national endeavours."

■ www.embo.org/scisoc

Annual application deadline

15
September
EMBO/EMBL
Science Writing
Prize

EDITOR PICKS – EMBO PUBLICATIONS

In each issue of *EMBOencounters*, the editors of *The EMBO Journal*, *EMBO reports* and *Molecular Systems Biology* highlight particularly interesting papers.



research articles

The tumor suppressor protein p53 is required for neurite outgrowth and axon regeneration

Simone Di Giovanni, Chad D Knights, Mahadev Rao, Alexander Yakovlev, Jeannette Beers, Jason Catania, Maria Laura Avantaggiati, Alan I Faden
The EMBO Journal 25: 4084–4096 (06 Sept 2006)

The orphan receptor GPR17 identified as a new dual uracil nucleotides/cysteinyl-leukotrienes receptor

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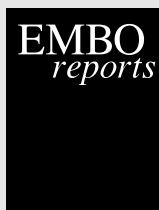
PtdIns3P binding to the PX domain of p40phox is a physiological signal in NADPH oxidase activation

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science & society

Food for tomorrow?

Hervé This
EMBO reports 7: 1062–1066 (01 November 2006)

The future of neo-eugenics

Armand Marie Leroi
EMBO reports 7: 1184–1187 (01 December 2006)

reviews

Do orphan G protein-coupled receptors have ligand-independent functions? New insights from receptor heterodimers

Angélique Levoye, Julie Dam, Mohammed A Ayoub, Jean-Luc Guillaume, Ralf Jockers
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The structure of the Sec complex and the problem of protein translocation

Alice Robson, Ian Collinson
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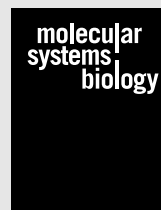
A distinct PAR complex associates physically with VE-cadherin in vertebrate endothelial cells

Sandra Iden, Daniela Rehder, Benjamin August, Atsushi Suzuki, Karen Wolburg-Buchholz, Hartwig Wolburg, Shigeo Ohno, Jürgen Behrens, Dietmar Vestweber, Klaus Ebnet
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The Tim21 binding domain connecting the preprotein translocases of both mitochondrial membranes

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www.emboreports.org



Molecular Systems Biology is now indexed in MEDLINE.

research articles

Cell lineage transport: a mechanism for molecular gradient formation

Marta Ibañes, Yasuhiko Kawakami, Diego Rasskin-Gutman, Juan Carlos Izpisua Belmonte
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Effects of HER2 overexpression on cell signaling networks governing proliferation and migration

Alejandro Wolf-Yadlin, Neil Kumar, Yi Zhang, Sampsa Hautaniemi, Muhammad Zaman, Hyung-Do Kim, Viara Grantcharova, Douglas A Lauffenburger, Forest M White
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Principles of microRNA regulation of a human cellular signaling network

Qinghua Cui, Zhenbao Yu, Enrico O Purisima, Edwin Wang
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Imaging single molecules in living cells for systems biology

Yasushi Sako
Molecular Systems Biology
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Depicting combinatorial complexity with the molecular interaction map notation

Kurt W Kohn, Mirit I Aladjem, Sohyoung Kim, John N Weinstein, Yves Pommier
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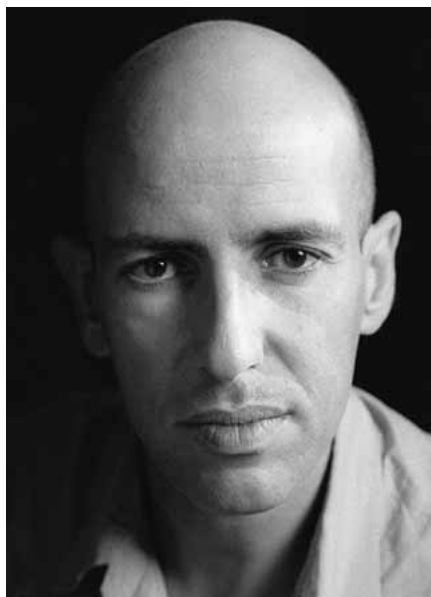
Global systems biology, personalized medicine and molecular epidemiology

Jeremy K Nicholson
Molecular Systems Biology
doi:10.1038/msb4100095 (03 October 2006)

www.molecularsystemsbiology.com

Three in one: EMBO honours scientist, author, broadcaster

Armand Leroi wins EMBO Award for Communication



Armand Marie Leroi, 2006 winner of the EMBO Award for Communication in the Life Sciences

Why are most of us born with one nose, two legs, ten fingers and twenty-four ribs – and some of us not? This fundamental question forms the basis for much of the work of *Armand Marie Leroi* – UK scientist, author and broadcaster, and winner of the 2006 EMBO Award for Communication in the Life Sciences.

The multi-talented developmental geneticist from Imperial College London receives the award in recognition of his remarkable con-

tribution to science communication. Leroi has written and presented scientific documentaries for TV and is author of an acclaimed popular science book called *Mutants*. It tells the fascinating and often misunderstood story of human development – and how genetic mutations can provide the key to who we are.

Both book and author have received wide acclaim. UK daily *The Independent* summed up the comments of many reviewers: "The discovery of a distinguished scientist who can write with such flair and style is cause for rejoicing." In 2004, *Mutants* won the Guardian First Book Prize and was shortlisted for the Aventis Prize for Science Books.

Armand Leroi has also brought this vast, uncharted area of biology to the screen. In 2004 he scripted and presented a powerful TV documentary series *Human Mutants* for the UK's Channel 4. The programme was a great success and a similar series *What Makes Us Human* was aired in August 2006. Print journalism has also become familiar territory for the scientist, who is a regular contributor to newspapers like *The Times*, *The Independent* and the *New York Times*.

Incredibly Leroi's achievements in science communication are more of a hobby than a day job. His "real job" is research scientist and lecturer at Imperial College London, where he leads a group investigating growth genetics

and evolutionary developmental biology in the worm *C. elegans* – one of the most important species in modern biology. The EMBO Award for Communication recognises scientists like Leroi for exactly this kind of dual commitment and their exceptional efforts to bring science to the public while remaining active in research.

On hearing the news of his selection, Leroi said: "I am honoured to receive this award from EMBO, one of the most important organisations in European science. And it is deeply gratifying to know that it encourages scientists to tell the public about their work." A prize of 5,000 euro and a handcrafted medal was presented to Armand Leroi on 3 November 2006 at the EMBL/EMBO Science & Society Conference in Heidelberg, Germany.

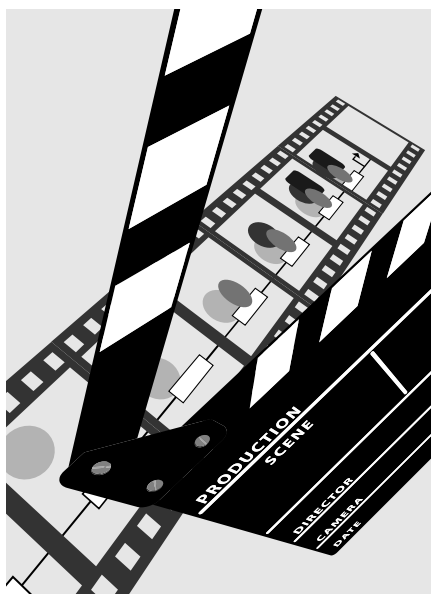
■ www.embo.org/about_embo/press/communications_award06.html



photo by Marietta Schupp (EMBL-Photolab)

Research comes to life

The EMBO Journal web focus on imaging



Have you had the chance lately to "watch" polynucleotide polymerases in action during the reaction cycle? Or observe ribosomes "at work"? A special online issue on imaging from *The EMBO Journal* brings these events, and more, to your desktop.

The web focus combines archived video footage with review articles published in *The EMBO Journal* (volume 25, number 15). The issue includes four reviews on the imaging of biological membranes, the dynamics of protein structure, gene expression, cell polarity, cell migration and the signalling events associated with these processes. Users can download videos associated with the research and access the articles in which the footage originally appeared.

Recent developments in live imaging of biological structures and events provide tre-

mendous insight into biological processes. Improvements in computer software and hardware are revolutionising three-dimensional imaging in biology. Highlighting these advances was the impetus behind this special online issue. Readers can now bring this research to life with a few clicks on *The EMBO Journal* website.

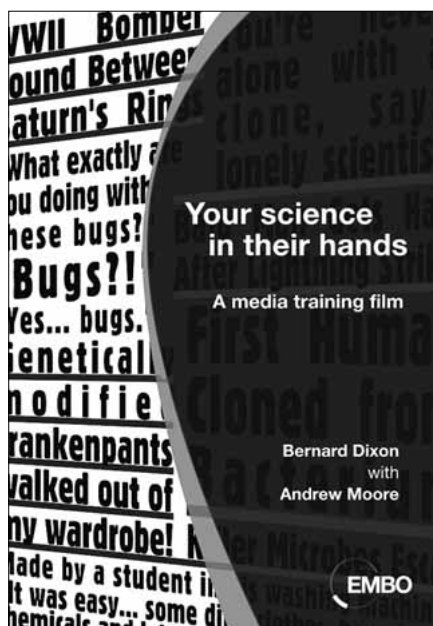
■ www.embojournal.org

All EMBO Members have free access to *The EMBO Journal* via the EMBO website (password-protected).

■ www.embo.org/publications/journal/index.html

Your science in their hands

EMBO media training DVD



Being media-savvy has its rewards. Consider the history of penicillin. Although *Alexander Fleming* is credited with its discovery, it was actually the work of the media-shy team, *Ernst Chain* and *Howard Florey*, which led to its development as a drug. They just weren't as keen as Fleming to talk to the press about it.

Journalists are always on the look-out for interesting science stories. Scientists who understand how the media works and are able

to explain their research in clear everyday language will be the ones who get their attention. To help biologists become more comfortable in their dealings with the press, EMBO's Science & Society Programme organises regular Media Workshops for Biologists. A 45-minute media training DVD, based on footage from one of these workshops, is now available.

In the film, workshop leader *Bernard Dixon* guides participants through an analysis of newspaper-style articles, discusses methods of popularising science and provides tips on how scientists can be proactive about getting their research into the news. In one of the sessions, he also role-plays as a journalist, conducting mock interviews with some of the participating scientists.

Workshop participants learn that the world of newspaper journalism is a fast-paced, pressure-filled race against the clock. Journalists have to produce interesting, fact-based articles every day. Scientists need to be prepared and aware of this reality when a journalist calls – and understand the process that gives the news editors, not the journalists, the final say on what is published.

Newspaper articles require a style of writing that is, in essence, the reverse of writing a scientific paper. The main points and important facts must be in the first paragraph and the

overall message must be clear, relevant and written for non-scientists. For example, using the better-known phrase "heart attack" when describing the latest results from your ischaemia-related research, is essential when writing for a general audience.

The public relates better to science when it is explained with everyday words and imagery. As the film suggests, an easy way to illustrate the myelin sheath on a neuron is to liken it to the electrical insulation on a power cable. The human interest aspect of a story can also not be underestimated. The public needs to see the relevance of research to their lives and the world around them.

"There are many professional and social reasons why scientists should talk to the media", says Science & Society Programme Manager, *Andrew Moore*. "To influence current affairs, increase research funding, provide accountability and protect their research at a time of crisis. EMBO's aim in providing these media workshops is to show scientists how the media works so they are better prepared to respond when the journalist calls."

To obtain **free copies** of the media training DVD, please email your request to scisoc@embo.org.

■ www.embo.org/scisoc/media_dvd.htm

The Way Forward

International Women in Science Conference



poster design by Nicola Graf, Freinsheim, Germany

SET-Routes, an EU-funded initiative from EMBL, EMBO and CERN, is getting to grips with the low representation of women in science. An ambassadors programme, co-ordinated by EMBL, will bring inspiring role models into schools and universities to help attract women into science. A SET-Routes conference, organised by EMBO, will take a look forward at ways of keeping these women in research.

The conference will take place from 9–11 May 2007. Aptly entitled *The Way Forward*, the event will look to the future of women in science. Bringing together scientists, politicians and other decision-makers from around Europe, the aim is to inspire participants to make the scientific career path more attractive for women and remove unnecessary obstacles that discourage women from pursuing a research career to a higher level.

The overriding focus will be to move forward and find concrete ways to improve prospects for women working in research. Presentations will take a constructive look at the current situation – evaluating progress, identifying good practice and presenting initiatives that have had a positive impact on the work environment for women scientists. A lively exhibition will showcase these initiatives.

The EMBO conference will also mark an important starting point for the SET-Routes Ambassadors. The event will help to prepare these representatives for the motivational role they will play in European schools and universities. A further half-day induction course will offer special training for the school ambassadors.

■ www.set-routes.org

Working and learning together

EMBO Young Investigator PhD Course



photo by Maj Britt-Hansen (EMBL-Photolab)

Many young investigator labs across Europe were looking a bit empty during the week of 17–24 September 2006 as thirty-six PhD students and their group leaders gathered in Heidelberg for the fifth Young Investigator PhD Course, “Spotlights on Current Biology”.

The seven-day course, organised by EMBO Young Investigators for their PhD students, gave these young researchers the chance to practice their writing and presentation skills, gain new insights into the latest biological research and network with their colleagues from across Europe. This year’s course offered a combination of activities including writing exercises, interactive tutorials and presentations which kept everyone busy during the full programme.

One experience the students found particularly useful was the grant proposal writing exercise. Working in groups of six, they were asked to write a proposal on a pre-assigned topic. This was evaluated by a panel of young investigators who provided thorough feedback and were very impressed by the quality of the proposals. Also well-received were the practical tutorials. These were led by the young investigators and covered topics such as DNA

manipulation, protein structure prediction and imaging techniques.

A talk by *Martin Reddington* of the Human Frontier Science Programme offered the students useful tips on how to plan, organise and prepare research presentations. The students were able to put his advice immediately into practice as they prepared to present their papers and posters. The effectiveness of their efforts was positively reflected in the feedback each student received from the young investigator assigned to evaluate their work.

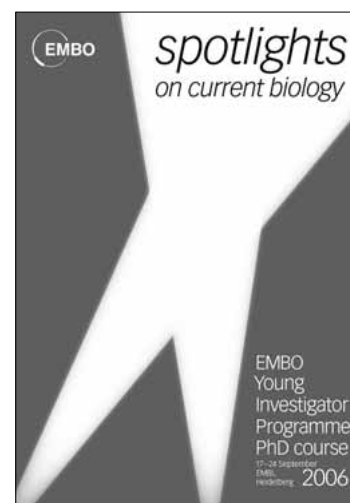
Thirteen presentations given by the young investigators took the students “inside the cell” and explored the areas of “development”, “mechanisms of immunity and disease” and “evolution”. Additional talks were given by EMBO Editor, *Thomas Lemberger* who guided participants through the editorial process at *The EMBO Journal* and *Andrew Moore*, EMBO Science & Society Programme Manager, who was on hand to give the students insights into effective media communication.

Over the years, the course continues to evolve to meet the needs of the students and young investigators. “We are continually improving the course by trying different for-

ms and ideas as well as incorporating the feedback we receive from the participants,” says *Gerlind Wallon*, EMBO Young Investigator Programme Manager.

The next EMBO Young Investigator PhD Course is planned for 23–30 September 2007.

■ www.embo.org/yip/phd06.html



Glyco-fight against HIV and hepatitis

New Antiviral Drug Discovery Unit in Oxford

Despite huge progress in antiviral research since the advent of AIDS in the 1980s, the fight against human viruses remains a major biomedical challenge. Hepatitis B, C and HIV are particularly prevalent with over 500 million people currently infected worldwide. A new unit at the University of Oxford's Glycobiology Institute is using advances in glycobiology to help combat these viruses and develop novel drugs.

Glycobiology is extremely important in the life of a virus. This key role is the subject of close investigation at the Oxford Glycobiology Institute, which runs a major research programme in antiviral therapeutics and vaccines. The institute is directed by EMBO Member *Raymond Dwek*, who has been working in the area since the 1980s and was the first to coin the term "glycobiology".

The new Oxford Antiviral Drug Discovery Unit, supported by Raymond Dwek and led by *Nicole Zitzmann*, heralds a new opportunity in antiviral research. In partnership with US biotechnology company, United Therapeutics Corporation, the dedicated drug development

facility is developing a unique antiviral strategy aimed at disrupting the growth and spread of infectious viral particles in the body.

One of the major stumbling blocks in the care of patients infected with HIV or Hepatitis is finding a treatment they have not developed antibodies against. The Oxford unit's line of attack differs from other common antiviral strategies, which tend to target virally-encoded enzymes. Unfortunately, when used in therapies, these enzymes often give rise to drug-resistant forms of viruses. A major plus point of the Oxford approach is the potential to avoid these viral mutants.

So how does this work in practice? Many viruses have envelopes – a membrane surrounding the virus comprising lipid and protein molecules. Envelope proteins are often highly glycosylated and the pathogenicity of Hepatitis B, C and HIV is dependent on their glycoproteins. This potential Achilles' heel forms the basis of the unit's antiviral drug development programme.

For all three viruses, researchers are investigating small molecules that prevent these

glycoproteins from folding properly, increasing their potential as antiviral therapeutics. In the case of the Hepatitis C virus, some of these molecules have a second function, inhibiting a viral ion channel that is essential for the spread of the virus. This offers another opportunity to disrupt the production of infectious viral particles. Having identified potential therapeutics, the unit is also looking at the role of liposomes in improving drug delivery.

The new unit has also taken on one of the most compelling challenges in antiviral medicine, the development of a vaccine for HIV. In co-operation with the Scripps Research Institute in La Jolla, California, the Oxford researchers are working on antibodies that take advantage of the unusual "sugar coating" or sugar clusters on the surface of the HIV virus. These molecules make it hard for the body's immune system to recognise and attack the virus and have great potential in the search for an effective vaccine.

■ www.bioch.ox.ac.uk/glycob

Hungarian high-tech

New research facility in Debrecen

Once known as "the biggest village in Europe", Debrecen has long since outgrown this label. Today the bustling metropolis is a central hub for Eastern European trade and a major academic centre. At the heart of this lies the University of Debrecen with over 26,000 students. The latest arrival on campus is a new life

sciences building, providing state-of-the-art research facilities.

The University of Debrecen is home to the research groups of EMBO Young Investigator *László Nagy* and EMBO Member *Sándor Damjanovich*. Nagy heads the Clinical Genomics Center, which moved into the new

life sciences building this year. The high-tech facility also serves a number of other research groups working in a range of biomedical, molecular and natural sciences. Amongst the high-spec laboratories is the university's first specific pathogen-free vivarium for *in vivo* experiments such as aseptic surgery, bone marrow transplantation and microsurgery.

The aim of the new facility is to strengthen the university's role as a national and regional centre for molecular life sciences and molecular medicine. Several research groups have already gained an international reputation including the Research Centre for Molecular Medicine, which is a designated European Union Centre of Excellence.

■ www.unideb.hu
 ■ www.dote.hu



In the footsteps of local science great

Sir James Black Centre opens in Dundee



There are some big names associated with the University of Dundee's Sir James Black Centre in Scotland. The first is its namesake, *Sir James Black* – Scottish scientist, Nobel laureate and former chancellor of the university. The centre is also home to a host of other renowned scientists, several of them EMBO Members. Another famous name, not often heard in scientific circles, is *Brian Cox*, Dundee-born Hollywood actor, who helped raise funds for the centre.

Sir James Black is a fitting figurehead for the new centre. The Glasgow-born scientist grew up near Dundee, working there as a lecturer in the University of St Andrew's Physiology Department from 1946–1947. Most famous for developing the beta-blocker, a drug that revolutionised treatment of heart disease, Sir James received the Nobel Prize for Medicine or Physiology in 1988 for his contributions to drug design. All the more appropriate then that a centre with a focus on drug discovery should carry his name.

The new centre is part of the university's College of Life Sciences, where EMBO Member *Sir Philip Cohen* leads 70 groups in the latest biomedical and life sciences research. Sir Philip was the first EMBO Member in Dundee. Today that number has increased more than tenfold. *Dario Alessi*, the 2005 EMBO Gold Medal winner, *Julian Blow*, *Doreen Cantrell*, *Michael Ferguson*, *Angus Lamond*, *Sir David Lane*, *David Lilley*, *Cheryll Tickle*, *Colin Watts* and *Jeffrey*

Williams are all based at the College, alongside EMBO Young Investigators *Daan van Aalten* and *John Rouse*.

Research into the causes and treatment of disease is an important focal point for the College of Life Sciences. The Sir James Black Centre will carry this forward, expanding research into diabetes, cancer and tropical parasitic diseases. The centre's Drug Discovery Unit targets some of the world's most neglected tropical diseases including African sleeping sickness, Chagas disease and leishmaniasis. At present there are no vaccines for these infections and little interest in develop-

ing them within the pharmaceutical industry. The unit aims to fill this gap and provide new candidate drugs for clinical trials.

Funding for the Sir James Black Centre came from commercial income, generated by the College of Life Sciences, university investment and a fundraising campaign led by *Michael Ferguson*, Philip Cohen and Brian Cox. The Dundonian actor suffers from Type 2 diabetes, one of the diseases under investigation at the new centre, and is best known for his high-profile roles in theatre and Hollywood blockbusters such as *Troy* and *X-Men 2*. The latter was an important source of funding for the new centre with the entire proceeds of the Scottish premiere going towards the building.

Both Brian Cox and Sir James Black have been back to visit the centre since it was opened in June 2006 by Nobel laureate and EMBO Member *Sydney Brenner*. Sir James was clearly impressed with how things had developed since he worked in Dundee. "This is the busiest beehive I have ever been to – everywhere I've been and everyone I've spoken to has been absolutely buzzing. It is very exciting to see the work that is being done here, and that Dundee is continuing to push forward so strongly in the life sciences. It's all a bit of a change from the kind of laboratories I was used to working in, and extremely impressive."

■ www.dundee.ac.uk/biocentre



E-learning goes the distance

Online training in biomedical and health sciences



In 2004, EMBO*encounters* reported on an online immunology course, co-ordinated by EMBO Member *Jean-Pierre Kraehenbuhl*. Since then the Swiss immunologist and his team have added three more portals to this novel learning mix – *Oncology Online*, *Laboratory Online* and *Online Collaborative Training for AIDS Vaccine Evaluation* (OCTAVE).

Immunology Online was the first project to be launched by the Health Sciences E-Training Foundation (HSet), which is based in Lausanne and directed by Jean-Pierre Kraehenbuhl. All students need is a computer and an internet connection to take this comprehensive course in basic and clinical immunology, designed for medical and biology students. Multi-media technology enriches the learning experience with interactive features such as a clickable 3-D body which sheds its skin to reveal the structure and function of human organs.

Originally developed for Swiss students, *Immunology Online* has brought new meaning to the "distance" learning concept in recent months. Thanks to a collaboration with the World Health Organization (WHO), medical students and healthcare professionals in Africa, Asia and South America now have access to the portal. As far apart as Senegal and Bangladesh, students are using video footage, digital images and discussion forums to solve clinical cases and master the physiology of the immune system.

The newest portals to be added to the HSet portfolio are built along the same principle as *Immunology Online*. *Oncology Online* is designed for undergraduate and post-



graduate medical students, post-docs, residents and clinical fellows. In the same way as *Immunology Online*, the portal builds up basic knowledge first, covering the entire architecture of molecular oncology, and then uses clinical cases to take a closer look at the most common types of tumours. This includes their molecular basis, genetics, pathology, clinical evolution and therapeutics.

Laboratory Online, as its name suggests, is a clinical laboratory course. Again aimed at undergraduate and post-graduate medical students, the curriculum is also suited to laboratory technicians and healthcare personnel, providing an ideal tool for continuous education. The portal takes students through the different branches of laboratory medicine and offers specialist training in topics such as haematology, clinical chemistry, microbiology, genetics and immunology.

OCTAVE or *Online Collaborative Training for AIDS Vaccine Evaluation* has a more specific target audience than the other portals. The training supports research teams testing HIV vaccines in developing countries hardest hit by the AIDS pandemic. The curriculum deals with best practices that are critical to the proc-



ess of moving candidate vaccines out of the laboratory and into clinical trials. The course also covers vaccinology, HIV pathogenesis and laboratory science, as well as accompanying students through the minefield of international clinical regulations. OCTAVE is a highly collaborative effort involving contributors from the US HIV Vaccine Trials Network, the US National Institutes of Health, the Eurovacc Foundation, the International AIDS Vaccine Initiative and many others.

A particular advantage to web-based learning is the flexibility to mix and match content, creating portals tailored to a specific audience. The HSet team has developed a number of customised portals for different organisations. One of these is the WHO portal, designed for trainees in the organisation's Tropical Disease Research (TDR) programme. Fusing content from *Immunology Online* and OCTAVE, the portal complements the TDR programme's study of immunology, vaccinology and biotechnology advances in combat against infectious diseases.

EMBO*encounters* readers interested in trying their hand at e-learning can browse the different portals online or contact Jean-Pierre Kraehenbuhl for a test user. Jean-Pierre.Kraehenbuhl@isrec.ch

Immunology Online <http://iol.bio-med.ch>

Oncology Online <http://ool.bio-med.ch>

Laboratory Online <http://lol.bio-med.ch>

OCTAVE <http://octave.bio-med.ch>

EVENT UPDATES FROM THE EMBO COMMUNITY

Opening Symposium, Wellcome Trust Centre for Stem Cell Research: A celebration of 25 years of embryonic stem cell research in Cambridge
18–19 December 2006
Cambridge, UK
Austin Smith
www.iscb.cam.ac.uk/symposium.html

Summer School on Microbial Genomics and Secondary Metabolites
23 June–1 July 2007
Split, HR
David Hopwood
www.jic.ac.uk/science/molmicro/summerschool2007

ELSO 2007
1–4 September 2007
Dresden, DE
Kai Simons
www.elseo.org

32nd FEBS Congress: Molecular Machines
7–12 July 2007
Vienna, AT
Julio Celis
www.febs2007.org

Beating the system

Systems biology and predictive medicine

Systems biology or "systems physiology" heralds a new era in biomedical research and a major opportunity for predictive and preventative medicine. A Swiss research collaboration is working towards making this a reality, using a systems approach to gain advance knowledge of metabolic diseases and improve preventative treatments. Launched in early 2006, the initiative is chaired by EMBO Member, *Wilhelm Krek*.

The Competence Center for Systems Physiology & Metabolic Diseases (CC-SPMD) is highly interdisciplinary, bringing together scientists from biology, computer science, mathematics, statistics, chemistry and medicine. A joint project of the Swiss Federal Institute of Technology (ETH Zurich) and the University of Zurich, the research team is focusing its efforts on metabolic disorders such as obesity, diabetes and cancer.

Twenty-four faculty members and over 40 students and post-docs make up the

CC-SPMD. Amongst the faculty are four EMBO Members – *Ruedi Aebersold*, also senior editor of *Molecular Systems Biology* (see page 8), *Ernst Hafen*, *Matthias Peter* and *Wilhelm Krek*. Another member, *Walter Wahli*, serves on the Scientific Advisory Board. The centre is a scientific node of SystemsX, a major systems biology network in Switzerland featuring several EMBO Members. CC-SPMD's *Ruedi Aebersold* and *Wilhelm Krek* are key contributors alongside *Konrad Basler*, *Andreas Engel* and *Josef Jiricny*.

In "systems" terms, disease represents a disruption in one or more parts of a biological system, also upsetting interactions between these different components. The CC-SPMD is looking at how different biosystems behave before and after metabolic disease takes hold. Using a wide-range of systems biology tools, CC-SPMD will study the metabolic control networks of different biosystems and how they react to disease.

Research at the centre is built around different scientific programmes and technology platforms. Current projects include Metabolic Control, Metabolomics, Biomarker, Systems Biology of Beta-Cells, Chemical Genomics and Translational Medicine. Education is also a focus with the new centre offering an international PhD programme in "the systems biology of complex diseases", in co-operation with the Life Science Zurich Graduate School.

The ultimate goal of CC-SPMD is to bring about significant advances in the prevention, treatment and cure of metabolic disease. The centre's cross-disciplinary approach is a crucial part of this and CC-SPMD hopes to take this further in the future, partnering with other universities, research institutions and industry to develop diverse systems biology tools.

■ www.ccsmd.ethz.ch

On course to the Philippines

EMBO Practical Course in Manila



EMBO World Activities fund a small number of practical courses and workshops outside Europe. The aim is to promote greater scientific interaction between Europe and other countries around the globe. EMBO Member *Wolfgang Hennig* of the CAS-MPG Partner Institute for Computational Biology (PICB) in Shanghai has brought three EMBO Workshops to China in recent years. His latest endeavour, an EMBO Practical Course, took him further afield to the Philippines.

EMBO has been supporting practical courses and plenary lectures in the Asia-Pacific region for several years. As with all EMBO World Activities, the goal is to offer scientists from the region and European researchers the opportunity to interact closely, maximising the potential for future collaboration. On average, a third of all course participants come from

Europe. The interest is great with European students paying their own way to attend events as far afield as Africa, Asia and Latin America. The contacts made often lead to long-lasting scientific links with Europe.

The Philippines was identified as an appropriate location for an EMBO Practical Course through contacts with the Asia-Pacific Molecular Biology Network (A-IMBN) and *Wolfgang Hennig*. The course took place on 17–26 September 2006 at the St. Luke's Medical Center in Manila, bringing together 16 young researchers to learn advanced techniques for the identification and quantitative analysis of genes in disease. Expert tuition was provided courtesy of experienced scientists from the field including *Wolfgang Hennig* and newly elected EMBO Member, *Valerio Orlando*.

A series of lectures introduced participants to the methods and their applications, while hands-on laboratory work helped them get to grips with techniques such as microarray data analysis, real-time PCR and RNA extraction. The take-home message for many participants was the importance of using bioinformatics tools to evaluate data from microarray and real-time PCR experiments. As one researcher commented, "Bioinformatics was never really

an interest of mine but this course has made me aware of how important it is to interpret experimental data. After gaining an idea of how to use the software, I feel like I've developed a new vision for my work."

Other participants were similarly inspired, so much so that many attended a follow-up course just two months later, organised by the PCIB. This level of continued scientific interaction is the hallmark of all EMBO Practical Courses. *Wolfgang Hennig* has similar hopes for the Manila course. "The quality and intensity of discussions between the participants was extremely high, not to mention the interaction between students and instructors. I'm confident that the new contacts made at this meeting will promote further valuable links with European science."

■ www.embo.org/world



A GOOD READ – PUBLICATIONS FROM THE EMBO COMMUNITY

■ *research***Hierarchical action and inhibition of plant Dicer-like proteins in antiviral defense**

Angélique Deleris, Javier Gallego-Bartolome, Jinsong Bao, Kristin D. Kasschau, James C. Carrington, Olivier Voinnet
Science **313**: 68–71
(07 July 2006)

Abortive initiation and productive initiation by RNA polymerase involve DNA scrunching

Andrey Revyakin, Chenyu Liu, Richard H. Ebright, Terence R. Strick
Science **314**: 1139–1143
(17 Nov 2006)

An inducible mouse model for PAX2-dependent glomerular disease: Insights into a complex pathogenesis

Kay-Dietrich Wagner, Nicole Wagner, Jian-Kan Guo, Marlies Elger, Margaret J Dallman, Laurence Bugeon, Andreas Schedl
Current Biology **16**: 793–800
(17 Apr 2006)

■ *books***The RNA World**

Third Edition
(CSHL Press, ed. 2006)

Edited by

Raymond F. Gesteland, Thomas R. Cech and John F. Atkins



Microbiology Today says:

“As in previous editions of *The RNA World*, the third edition discusses the potential prebiotic roles of RNA and reviews understanding of the current RNA world. The main difference in this latest edition is that it considers the significantly expanded breadth of RNA function that we now know exists in the modern biosphere by including additional chapters on areas such as riboswitches, microRNAs and RNAi. A particularly pleasing feature of the new book is the diversity of scientific approaches covered, ranging from nucleic acid chemistry through structural biology,

modelling and theoretical considerations, to single molecule studies. In summary, this comprehensive and stimulating compendium of reviews of RNA worlds past and present is an essential and enjoyable read for researchers and teachers with interests in the structure and function of nucleic acids and in gene expression. It is a recommended purchase for any research library as well as a wise buy for research groups working in related areas.”

The complete text of The RNA World is available free of charge at: <http://rna.cshl.edu>

AWARDS OF EXCELLENCE

■ *EMBO Members***Fellow of the Royal Society 2006, UK**

David Barford, Marc Feldmann, Matthew Freeman, Richard J. Jackson, Peter Parker, Helen Saibil and Austin Smith for scientific excellence

Foreign Member of the Royal Society 2006, UK

Roger Y. Tsien (associate member) for scientific excellence

Nobel Prize in Chemistry 2006, SE

Roger D. Kornberg (associate member) for his studies of the molecular basis of eukaryotic transcription

Prix van Gysel (for biomedical research) 2006, BE

Leena Peltonen-Palotie for her outstanding research on genetic mechanisms in human inherited diseases

Royal Society Rosalind Franklin Award 2006, UK

Andrea Brand for her groundbreaking contributions to the fields of gene regulation, developmental biology, cell biology and neurobiology

■ *EMBO Young Investigators***2006 Anders Jahre Prize for Young Researchers, NO**

Poul Nissen for his excellent work on the structure of important cell proteins connected with protein synthesis and transport across the membrane

Visegrad Group Academies Young Researcher Award, CZ, HU, PL, SK

Janusz M. Bujnicki for his exceptional work in structural and evolutionary biology

APPOINTMENTS

■ *EMBO Members***Gunnar von Heijne**

Director
Center for Biomembrane Research (CBR)
Stockholm University, SE

Ernst-Ludwig Winnacker

Secretary General
European Research Council (ERC)