

FAREWELL MESSAGE FROM EMBO EXECUTIVE DIRECTOR

The Rip Van Winkle test

Waking up to today's EMBO



Some of you may be familiar with the story of Rip Van Winkle. After falling asleep for twenty years, he awakens to find the world about him changed completely. This story came to mind as I was looking back over my thirteen years at EMBO and the "Rip Van Winkle test" seemed an ideal way to evaluate all that has happened in this time. In other words, if Rip van Winkle woke up to today's EMBO, how would he react and what would have changed?

When I took on the EMBO directorship in 1994, I did so with the conviction that EMBO had a major role to play in European science. A powerful membership, the financial support of the European Molecular Biology Conference (EMBC), and a strong tradition of flexibility, excellence and understanding scientists' needs – all of these gave EMBO a special place in science, but one that was increasingly restricted to the delivery of fellowships, courses and workshops. I felt that EMBO had the potential, and indeed the responsibility, to make a wider impact.

Today's EMBO has a voice, and a strong one at that.

Perhaps this is one of the first things that would strike Rip van Winkle on waking. Today's EMBO has a voice, and a strong one at that. The organisation contributes majorly to discussions on science policy, while still maintaining and extending its established programmes. Our most spectacular campaign as yet was EMBO's role in the foundation of the European Research Council. Together with FEBS, EMBL and ELSO, EMBO established the European Life Sciences Forum (ELSF) to structure life scientists' input. Later the Initiative for Science in Europe (ISE) took up the cause for all disciplines, co-ordinated by ELSF from its

EMBO base. Through these platforms, scientists were finally able to speak with one voice and really make their impact felt.

Another major change has been the growth of Europe and EMBO's expansion into the new regions. With a commitment to making the life sciences competitive in all of Europe, we have made many efforts to strengthen science in our newer member states, nine of which have joined EMBC since 1994. EMBO Installation Grants are one example. As this programme gathers momentum, we hope it will be a forerunner for similar initiatives, as was the Young Investigator Programme. A model for later schemes supporting young group leaders in Europe, the programme has become a cornerstone of EMBO and represents a significant network of very gifted scientists.

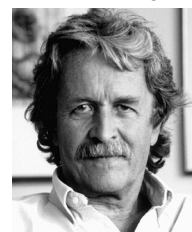
For Rip van Winkle, it was changes in his local community that affected him most dramatically. The development of EMBO's community and its increased involvement in the organisation may seem less obvious, but is perhaps one of the most important changes at EMBO in recent years. We have significantly intensified our interaction with the EMBO networks, in particular our members, over 500 of whom have been elected since the mid-nineties. The result, we hope, is a greater connection to the organisation and a true sense of ownership.

Annual committee meetings and the EMBO Council meeting give ample opportunity for critical analysis of EMBO's programmes. Informal input is also valuable, with conversations over coffee or dinner regularly finding their way into a new activity or the enhancement of an existing one. This transparency allows our members to make a real and palpable contribution to the organisation, one which safeguards EMBO's continued reputation. This standing is also synonymous with EMBO's journals. *The EMBO Journal*, *EMBO reports* and most recently... (continued on page two) → →

HIGHLIGHTS IN THIS ISSUE

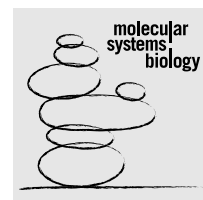
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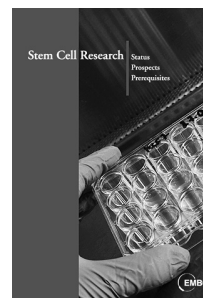


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A fond “slán leat” to Frank Gannon

Farewell symposium and celebrations



photo by U. Ringelsen (EMBL, Photolab)

In July 2007, after 13 years as EMBO Executive Director, *Frank Gannon* will say goodbye to the organisation and return to his native shores of Ireland. There he will embark on a new challenge as Director General of Science Foundation Ireland (SFI). At a special symposium to be held in his honour, the EMBO com-

munity will have the chance to wish the “Irish European” well and celebrate his achievements over the past thirteen years.

The symposium will take place on 28 June 2007 at the EMBL in Heidelberg, where Frank also runs a research lab investigating the estrogen receptor’s role in gene expres-

sion. The symposium will reflect these scientific interests and also Frank’s contributions to European science policy, which have not only put EMBO firmly on the map in Europe, but have also had a lasting impact on the European Research Area in general. Sessions will also take a look forward, exploring trends and developments in the areas Frank has contributed so much to.

At the event, Frank will be joined not only by the EMBO Members and staff he has worked so closely with during his time at EMBO, but also other colleagues from the scientific community and policy-making circles. Speakers include *Miguel Beato*, *Geoff Greene*, *Malcolm Parker*, *George Reid* and *Julio Celis*. The sessions will run from 1–6pm, followed by an evening reception. This promises to be a lively affair, as friends and colleagues gather one last time to raise a glass to Frank and, with a resounding “Sláinte”, to wish him all the best for the future.

For registration, please contact Kim Krynauw: kim.krynauw@embo.org.



FAREWELL MESSAGE FROM EMBO EXECUTIVE DIRECTOR

The Rip Van Winkle test

Waking up to today’s EMBO

(continued from front page) *Molecular Systems Biology* are flagships of EMBO and European science. The profits they generate also help us to invest in new activities and expand EMBO’s influence.

To a bleary-eyed Rip Van Winkle, this expansion might seem hard to accept. A new EMBO building, an extended staff, an expanded range of activities, a wide international visibility, and a confidence to take leadership in policy debates in Europe – all of this might seem far removed from the EMBO of old. In time, however, I hope he would recognise that today’s EMBO would be a very different organisation without this change – still useful but increasingly obsolete. Essentially the organisation has evolved to match its new function and will no doubt continue to do so.

While Rip van Winkle comes to terms with the present, I get ready to say goodbye to EMBO and look towards the future. The organisation’s path for the next ten years has already

been mapped out and perhaps the most important of these directions will be a greater emphasis on molecular medicine. Our decision to expand EMBO’s footprint in this area was backed up in a recent survey of the membership. Around 85% of respondents cited molecular medicine as a key priority in their current or future research.

In this foreword, I have used “we” and “our” on many occasions. This is not a delusion of grandeur on my part, but rather a recognition that any achievements over the past thirteen years have been the result of a phenomenal team effort. The heart of this team lies in Heidelberg, where my daily interactions with the EMBO staff have shown a constant commitment, not just to a job but to the concept that is EMBO. Their inventiveness is visible in all of EMBO’s actions today.

“We” also refers to the committees who have worked selflessly for EMBO. Numerically their engagement shows the extent to which

EMBO is dependent on its members, and the checks and balances they bring to the organisation are essential for its well-being. “We” is also the EMBO Member States, who have engaged so actively in the different EMBO programmes. Obtaining funding is never easy, but in the years since I became Executive Director, there has been a 70% increase in funding – a true measure of their support.

Finally, “we” is the many EMBO Councils I have worked with. Each in turn has taken its responsibilities seriously to ensure that EMBO actions are in keeping with the needs and expectations of the membership. So, although Rip Van Winkle may blink with some disbelief as he awakens to his new surroundings, I hope reflection will show that these changes have been of benefit to European science, and that the “new EMBO” is one that matches both its potential and its responsibility.

Frank Gannon

EMBO welcomes Hermann Bujard

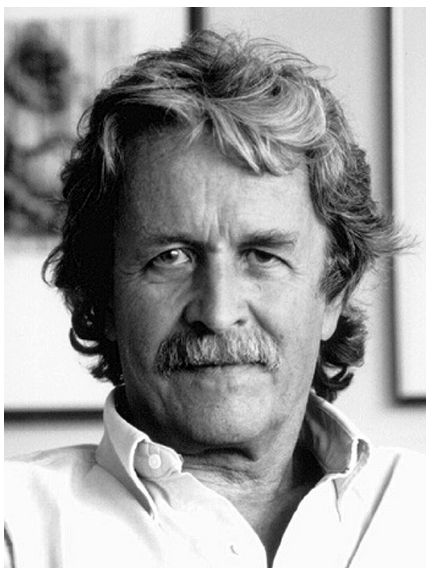
Deputy Executive Director of EMBO

In February 2007, *Hermann Bujard* joined EMBO as Deputy Executive Director, supporting *Frank Gannon* in the run-up to his move to Science Foundation Ireland (SFI). In July, Frank will hand over to Hermann, who will lead the organisation until the next Executive Director is appointed. The German-born molecular biologist is no stranger to EMBO. A member since 1976 and EMBO Council member from 1989–1995, he has long-standing links to the organisation.

Hermann's first association with EMBO dates back even earlier than his election to the membership. In 1970, after hearing that EMBO was moving to Germany, he got together with two colleagues, the late *Peter von Sengbusch* and EMBO Member *Ken Holmes*, to put together an application for EMBO to come to Heidelberg. At the time, Munich seemed the most likely choice for the organisation due to a growing research scene and Heidelberg was a long shot. However, thanks to the group's persuasive arguments, the support of local physicists, the engagement of the city's mayor, and a number of other factors, Heidelberg won out in the end.

The physics connection played an important part in this decision, explains Hermann. "There were very strong links between biology and physics in those days. Heidelberg-based physicists like *Wolfgang Gentner* and Nobel Laureate *Hans Jensen* had the vision to see the opportunities that biology presented and were determined to bring a base for modern biology to Heidelberg." In the early seventies, Hermann also served on the EMBO Laboratory Committee, laying the foundations for the establishment of the European Molecular Biology Laboratory (EMBL), one of the founding goals of EMBO. He also co-organised some of the early EMBO scientific meetings.

In addition to an obvious affection for EMBO and a belief in its role in European science, Hermann brings a rich tapestry of experience to the organisation – not only in research but also in industry and politics. Currently he runs a research laboratory at Heidelberg's Center for Molecular Biology (ZMBH), which he helped to establish in the mid-eighties as its first Director. At that time, Hermann's research focused largely on the mechanisms of gene regulation. A well-known by-product was the tetracycline-dependent transcription control system, widely used in the study of gene function today.



Since then Hermann's research has taken a different direction, now focusing on developing and testing vaccines against malaria. He first became interested in the disease as Deputy Director and Head of Biological Research at F. Hoffmann La Roche Ltd. in Basel, Switzerland, where he worked from 1982–1986. A "basic researcher born and bred" before this appointment, his time at Roche gave him the opportunity to apply a more disease-oriented approach. While working on diseases such as cancer and neurodegenerative conditions, he set up the company's first research programme towards the development of a malaria vaccine.

This early ambition continues today. With a determination borne of a strong biological and humanitarian interest in the disease, it is clear that Hermann feels a long-term commitment to malaria research. While working at EMBO, he will maintain his laboratory at the ZMBH, where his group continues to investigate a vaccine against *P. falciparum* infections. For the future, he has set his sights further afield. He hopes to return to Africa to continue his research in the countries most affected by the disease.

Closer to home, Hermann has had a significant impact on German research, particularly in Heidelberg. At the ZMBH, he and his colleagues developed programmes to support and train young independent scientists early on in their careers. These programmes are still influential today and reflect another long-term commitment in Hermann's career, namely teaching, something which he believes is integral to every scientist's responsibilities. The institutional structure and culture he introduced at

the ZMBH is also close to his heart. Still thriving today, its flat hierarchy and flexible tenure track remains unique in German science.

Hermann has a strong interest in the politics behind research. He has often expressed his opinion on the development of German science policy and, post-reunification, was involved in the establishment of various institutes in the new German states. On an academic level, he has published over 140 peer-reviewed articles and holds 25 international patents. Amongst a string of honours, including of course his EMBO membership, he is a member of the Max Planck Institute for Medical Research and holds an honorary doctorate from the University of Würzburg. The Karl Heinz Beckurts Prize, the Curie Institute's Yvette Mayent Prize for Cancer Research and the 2005 Medal of Merit from the German state of Baden-Württemberg represent some of the awards he has received in his still active career.

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

2007 deadlines

15
June

**EMBO Members:
Nomination of
candidates for
EMBO Council**

1
December

**EMBO Members:
Nomination of
candidates for
EMBO membership**

EMBO EVENTS 2007

PRACTICAL COURSES (EUROPE)

- 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
- Identification and characterization of protein complexes using the TAP method
DE–Heidelberg, 1–8 August
- Current methods in cell biology
DE–Heidelberg, 22–31 August
- SNP genotyping and genome-wide association
FI–Helsinki, 27 August–1 September
- Chromatin immunoprecipitation and related techniques
DE–Heidelberg, 2–8 September
- Image processing for cryo-electron microscopy
UK–London, 10–20 September
- Studying cytoskeletal dynamics: From biology to physics
FR–Gif-Sur-Yvette, 24 September–4 October
- Advanced analysis and informatics of microarray data
UK–Hinxtun, 15–20 October
- Combining X-ray and EM data in structure determination
FR–Gif-sur-Yvette, 28 October–3 November

PRACTICAL COURSES (WORLD)

- DNA microarray
IN–Tamil Nadu, 11–16 August
- Computational biology: From genomes to cells and ecosystems
MX–Cancun, 20–26 August
- Nanobiotechnology: From magnetic nanoparticles to cellular nanomachines
BR–Ribeiro, 7–14 October
- Calcium and the cytoskeleton
UY–Montevideo, 29 October–9 November
- Advanced methods in reconstructing molecular phylogenetic relationships
BR–Rio de Janeiro, 29 October–4 November

WORKSHOPS (EUROPE)

- 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
- EMBO Molecular Medicine Workshop: Drug action and chemical biology in the post-genomic era
AT–Vienna, 23–26 August
- New methods in membrane protein research
SE–Stockholm, 24–26 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
- Common regulatory mechanisms in haemopoiesis and neurogenesis
DE–Heidelberg, 3–5 October
- Molecular mechanisms of cell cycle control in normal and malignant cells
GR–Spetses, 5–8 October
- *Escherichia coli* – facets of a versatile pathogen
DE–Bad Staffelstein, 9–12 October
- Mechanisms of nucleocytoplasmic transport
IT–Sicily, 27–31 October
- Glycoscience and development
FR–Lille, 9–12 December

WORKSHOPS (WORLD)

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

CONFERENCE SERIES (EUROPE)

- 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
- Ubiquitin and ubiquitin-like modifiers
IT–Riva del Garda, 22–26 September
- The assembly and function of neuronal circuits
CH–Ascona, 23–28 September
- Stem cell biology
SE–Stockholm, 12–14 October
- Genetics and mechanisms of susceptibility to infectious diseases
FR–Paris, 21–24 November

ESF-EMBO SYMPOSIA

- Biomagnetism and magnetic biosystems based on molecular recognition processes
ES–San Feliu de Guixols, 20–25 September
- Three-dimensional sensory and motor space
ES–San Feliu de Guixols, 6–11 October
- Comparative genomics of eukaryotic microorganisms
ES–San Feliu de Guixols, 20–25 October
- Probing interactions between nanoparticles/ biomaterials and biological systems – alternative approaches to bio-toxicity
ES–San Feliu de Guixols, 3–8 November

EMBO-FEBS LECTURE COURSES (EUROPE)

- Molecular mechanisms in signal transduction and cancer
GR–Spetses, 15–24 August

OTHER EMBO EVENTS

MEMBERS

- EMBO Members Workshop “Frontiers of Molecular Biology”
ES–Barcelona, 26–29 October

YOUNG INVESTIGATORS

- Young Investigator Meeting
DE–Heidelberg, 13–15 June
- Young Investigator Sectoral Meeting on Neurobiology
DE–Heidelberg, 16–17 June
- EMBO/HHMI Central European Scientists Meeting
EE–Tallinn, 14–16 September
- Young Investigator PhD Course
DE–Heidelberg, 23–30 September

FELLOWS

- Fellows Meeting
DE–Heidelberg (EMBL), 22–25 June

LABORATORY MANAGEMENT COURSES

- Laboratory Management Course for Fellows
DE–Heidelberg, 24–26 September
- Open Laboratory Management Course
DE–Heidelberg, 8–11 October
- Open Laboratory Management Course
DE–Heidelberg, 5–8 November
- Laboratory Management Course for Fellows
DE–Heidelberg, 12–14 November

SCIENCE & SOCIETY

- FEBS-EMBO Science & Society Workshop, “Aging of the Brain” (32nd FEBS Congress, Molecular Machines)
AT–Vienna, 8 July
- Science & Society Special Session at the EMBO Members Workshop
ES–Barcelona, 28 October
- 8th EMBO/EMBL Joint Conference on Science and Society, “The future of our species – Evolution, disease and sustainable development”
DE–Heidelberg (EMBL), 2–3 November

- www.embo.org/about_embo/calendar.php

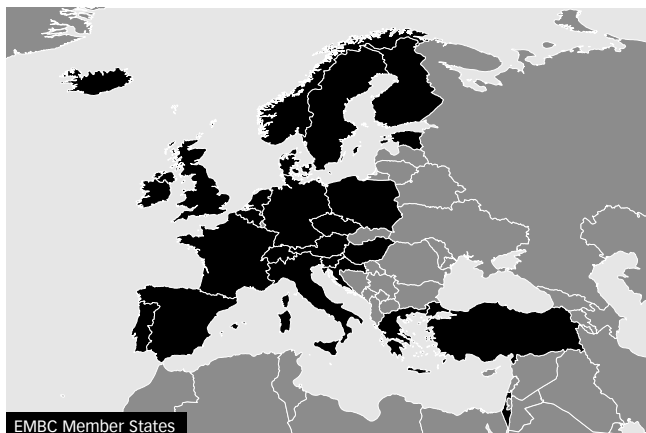
Bi-annual application deadlines for organisers to apply for EMBO funds

EMBO Courses & Workshops



The latest from EMBC

Results of the November 2006 meeting



EMBC Member States

The European Molecular Biology Conference (EMBC) is the primary funder of EMBO activities. The intergovernmental body meets twice annually to review its funding of EMBO's programmes. The second session in 2006 took place from 20–21 November in Grenoble, France. The meeting brought together over 30 delegates and advisers from the EMBC Member States, as well as the EMBO Managers and representatives from EMBO Council.

The November meeting saw some changes in the make-up of the EMBC. *Isabella Beretta* of the Swiss Secretariat for Education and Research was elected as EMBC Secretary General for 2007, taking over from *Frank*

Gannon who has held the position for 5 years. All of the other EMBC Officers were re-elected including *Marja Makarow*, who will serve her final term as EMBC President in 2007.

As with all EMBC meetings, the delegates had the chance to hear from EMBO on the status of its activities. An audit report on EMBO's

Long-Term Fellowships, from the programme's manager *Jan Taplick*, was received positively by the assembled delegates. EMBO also presented the results of a study on the impact of gender and family on the success of its long-term fellowship applicants. The outcome was positive, revealing an absence of bias in the EMBO selection process.

Stem cell research was also a topic for discussion at a special EMBC hearing, organised by the EMBO Science & Society Programme. Three leading stem cell scientists, *Michael Brehm* and EMBO Members, *Austin Smith* and *Elaine Dzierzak*, outlined the current status of stem cell research in Europe and the pros-

pects for the future. The speakers were part of a group of experts who contributed to an EMBO publication on the topic that includes recommendations for changes at policy level (see page 8). All of the delegates received a copy and actively debated the issues that both it and the speakers had raised.

■ www.embo.org/embc

EMBC Officers 2007

- President
Marja Makarow (Finland)
- Vice-Presidents
Krešimir Pavelić (Croatia)
Peter Weisbeek (Netherlands)
- Secretary General
Isabella Beretta (Switzerland)
- Chair of Financial Advisory Group
Brita Beije (Sweden)
- Vice-Chair of Financial Advisory Group
Maria José Almeida (Portugal)

Set up your lab in Hungary

Hungary joins EMBO Installation Grants

Good news for scientists who plan to relocate to Hungary to set up their research groups – they are now eligible to apply for an EMBO Installation Grant. Hungary joins member countries Croatia, the Czech Republic, Estonia, Poland, Portugal and Turkey, who have been part of the scheme since its inception last year.

EMBO Installation Grants aim to address differences in scientific infrastructures from country to country, boosting science on a national level. The scheme offers an attractive funding and networking package to scientists of any age or nationality who want to move to one of the participating countries and set up their labs there.

Over 70 scientists applied during the first round of applications in 2006. Ten of these were awarded an annual grant of 50,000 euro for three to five years. Three of those scientists will be setting up their labs in Poland, two each

in Portugal and Turkey, and one each in Croatia, Estonia, and the Czech Republic. The successful applicants will also be given full access to the networking and training activities of the EMBO Young Investigator Programme.

EMBO firmly believes that the best life scientists can be found all over Europe and that researchers and their communities should be supported irrespective of borders. The installation grants, funded by the participating EMBC Member States, are practical proof of this commitment.

The annual application deadline for the EMBO Installation Grants is 15 April. For applicants to Hungary, the 2007 deadline was extended until 15 May.

■ www.embo.org/sdig

New EMBO fellows

Autumn 2006 selection

A record number of applications for EMBO Long-Term Fellowships was received in 2006, proof of the continued high demand for these awards. In the autumn 2006 selection, 113 candidates were chosen from 651 applications. The spring 2007 selection process is currently underway.

The next application deadline is 15 August 2007.

■ www.embo.org/fellowships/long_term.html

EMBO Fellows Meeting: 22–25 June 2007

■ <http://fellowsonet.embo.org>

Next application deadline

15
August
EMBO
Long-Term
Fellowships

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.



Proteomic screen defines the Polo-box domain interactome and identifies Rock2 as a Plk1 substrate

Drew M Lowery, Karl R Clauser, Majbrit Hjerrild, Dan Lim, Jes Alexander, Kazuhiro Kishi, Shao-En Ong, Steen Gammeltoft, Steven A Carr, Michael B Yaffe
The EMBO Journal **26**: 2262–2273
(19 April 2007)

CBP/p300 are bimodal regulators of Wnt signaling

Jiong Li, Chris Sutter, David S Parker, Timothy Blauwkamp, Ming Fang, Ken M Cadigan
The EMBO Journal **26**: 2284–2294
(02 May 2007)

Reconstruction of a pathway of antigen processing and class II MHC peptide capture

Catherine X Moss, Timothy I Tree, Colin Watts
The EMBO Journal **26**: 2137–2147
(18 Apr 2007)

An alternative branch of the nonsense-mediated decay pathway

Wai-Kin Chan, Lulu Huang, Jayanthi P Gudikote, Yao-Fu Chang, J Saadi Imam, James A MacLean II, Miles F Wilkinson
The EMBO Journal **26**: 1820–1830
(04 Apr 2007)

Role of *Arabidopsis* AGO6 in siRNA accumulation, DNA methylation and transcriptional gene silencing

Xianwu Zheng, Jianhua Zhu, Avnish Kapoor, Jian-Kang Zhu
The EMBO Journal **26**: 1691–1701
(21 Mar 2007)

The morphology proteins Mdm12/Mmm1 function in the major β -barrel assembly pathway of mitochondria

C Meisinger, S Pfannschmidt, M Rissler, D Milenkovic, T Becker, D Stojanovski, M J Youngman, R E Jensen, A Chacinska, B Guiard, N Pfanner, N Wiedemann
The EMBO Journal **26**: 2229–2239
(02 May 2007)

www.embojournal.org



science & society

Fraud: causes and culprits as perceived by science and the media

Martina Franzen, Simone Roedder, Peter Weingart
EMBO reports **8**: 3–7
(01 January 2007)

Fostering creativity

Carl J Neumann
EMBO reports **8**: 202–206
(01 March 2007)

reviews

Calcium: a fundamental regulator of intracellular membrane fusion?

Jesse C Hay
EMBO reports **8**: 236–240
(01 March 2007)

Replication fork barriers: pausing for a break or stalling for time?

Karim Labib, Ben Hodgson
EMBO reports **8**: 346–353
(01 April 2007)

scientific reports

Spliced-leader RNA silencing: a novel stress-induced mechanism in *Trypanosoma brucei*

Yaniv Lustig, Lilach Sheiner, Yaron Vagima, Hanoch Goldshmidt, Anish Das, Vivian Bellofatto, Shulamit Michaeli
EMBO reports **8**: 408–413
(09 March 2007)

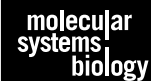
Telomere dysfunction suppresses spontaneous tumorigenesis *in vivo* by initiating p53-dependent cellular senescence

Wilfredo Cosme-Blanco, Mei-Feng Shen, Alexander J F Lazar, Sen Pathak, Guillermina Lozano, Asha S Multani, Sandy Chang
EMBO reports **8**: 497–503
(30 March 2007)

RNA channelling by the archaeal exosome

Esben Lorentzen, Andrzej Dziembowski, Doris Lindner, Bertrand Seraphin, Elena Conti
EMBO reports **8**: 470–476 (01 May 2007)

www.emboreports.org



editorials

Integrating scientific cultures

(meeting highlight)
Trey Ideker, Vineet Bafna, Thomas Lemberger
Molecular Systems Biology
doi:10.1038/msb4100145 (17 April 2007)

research articles

Genome-wide transcriptional plasticity underlies cellular adaptation to novel challenge

Shay Stern, Tali Dror, Elad Stolovicki, Naama Brenner, Erez Braun
Molecular Systems Biology
doi:10.1038/msb4100147 (24 April 2007)

Backup without redundancy: genetic interactions reveal the cost of duplicate gene loss

Jan Ihmels, Sean R Collins, Maya Schuldiner, Nevan J Krogan, Jonathan S Weissman
Molecular Systems Biology
doi:10.1038/msb4100127 (27 March 2007)

Gyrase inhibitors induce an oxidative damage cellular death pathway in *Escherichia coli*

Daniel J Dwyer, Michael A Kohanski, Boris Hayete, James J Collins
Molecular Systems Biology
doi:10.1038/msb4100135 (13 March 2007)

reports

Inferring condition-specific transcription factor function from DNA binding and gene expression data

Rachel Patton McCord, Michael F Berger, Anthony A Philippakis, Martha L Bulyk
Molecular Systems Biology
doi:10.1038/msb4100140 (17 April 2007)

news & views

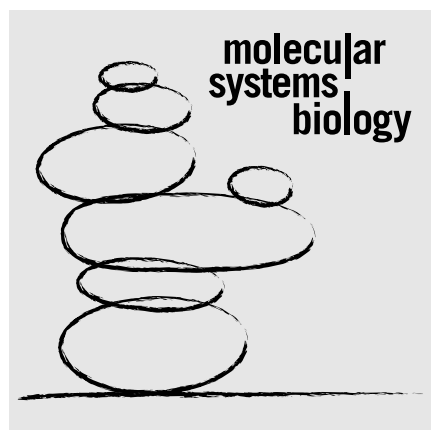
Chance and necessity in cellular response to challenge

Eugene V Koonin
Molecular Systems Biology
doi:10.1038/msb4100152 (24 April 2007)

www.molecularsystemsbiology.com

Rolling stones gather no moss

Molecular Systems Biology launches new blog



Molecular Systems Biology, the online journal from EMBO and Nature Publishing Group (NPG), continues its evolution with the launch

of a new blog or web log. "The Seven Stones" is an online platform that encourages vibrant exchange between all scientists involved in the fields of systems and synthetic biology.

Contrary to other online media, a blog is an evolving entity that thrives on the input of its users. Comments can be given on topics already posted and suggestions can be made for new subject areas. This interactive approach encourages lively discussions, leading to new ideas, approaches and collaborations. Users can also stay on top of the latest developments by subscribing to the blog's RSS feed, bringing recent comments and postings directly to their desktop.

Molecular Systems Biology's open-access philosophy includes offering its readers and the

wider systems biology community the latest developments in online tools and resources. The new blog will give researchers a live forum to address all aspects of systems and synthetic biology, including technical matters, general scientific issues and societal aspects. The blog is also part of the Nature.com series.

Systems biology at the molecular level is a rapidly growing and interdisciplinary field. EMBO hopes that this new blog will help support and encourage researchers to interact more frequently and productively, thereby developing and strengthening this community.

■ <http://blog-msb.embo.org>

Exploring an issue from all sides

EMBO reports introduces "Talking Points"



Scientific research has always been a playing field for conflicting or divergent opinions. However, few avenues have existed for scientists to present and debate different perspectives on a given topic. To create such a forum, *EMBO reports* launched a new feature in its February 2007 issue, entitled "Talking Point".

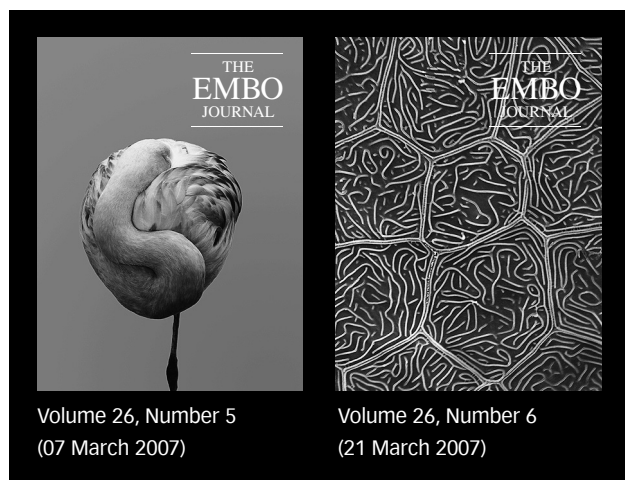
Topics will be drawn from either the Science & Society or the Reviews sections and each Talking Point will consist of two articles written by authors with contrasting views or interpretations of the field. These will be accompanied by a third, neutral commentary to place the different views in context.

The first of this series featured *Michael S. Wolfe* and *Bart de Strooper* presenting their views on the role of presenilin mutations in the development of Alzheimer's disease. A second science and society issue was tackled in

the April 2007 issue with *Martin Peterson* and *Andrew Stirling* debating the precautionary principle.

Both scientists and science stand to gain from forums like these, where scientific progress can be explored from different angles. *EMBO reports* hopes that these Talking Points will encourage readers to appreciate all sides of an issue and to contribute constructively to the debate.

■ www.emboreports.org



Have you ever wondered where *The EMBO Journal* finds the captivating images that grace its cover twice a month? Many of them stem from a pool of high-quality submissions to the

Picturing science and nature

The EMBO Journal cover contest

journal's annual cover contest.

For the fourth year running, this year's contest attracted entries from all over the world. Over 500 submissions competed for first prize in the non-scientific and scientific categories of the competition, held this past January.

Each submitted image was exposed to a very thorough grading process by a jury of EMBO Editors and other staff. First prize for the best non-scientific cover image was awarded to *Vladimir Prassolov*,

Professor at the Engelhardt Institute of Molecular Biology at the Russian Academy of Sciences in Moscow. His image, entitled "Pink Ball", shows a resting flamingo at Hagenbeck's Zoo in Hamburg, Germany.

The winner of the best scientific cover image went to *Marilyne Malbouyres* and *Florence Ruggiero* of the "Extracellular Matrix and Development" group at the Institute for the Biology and Chemistry of Proteins (IBCP) in Lyon, France. Their winning image shows a high magnification SEM view of epithelial cells in zebrafish embryo skin 72 hours after fertilisation.

■ www.embojournal.org

Stem cell research: status, prospects, prerequisites

EMBO publication offers concrete recommendations



EMBO does not shy away from potentially contentious subjects with regards to European science policy-making. The organisation monitors key issues and facilitates debate, offering sound and balanced scientific advice on a variety of, sometimes hot, topics. Focus meetings, organised by the EMBO Science & Society Programme, result in publications that provide a solid scientific background to policy-making.

The often controversial issue of stem cell research is the latest topic to be addressed by

EMBO. Under its direction, sixteen prominent scientists met in April 2006 to discuss research in this area, its application and patient advocacy. This concerted scientific input has been summarised in a 77-page document entitled, "Stem Cell Research | Status, Prospects, Prerequisites", published in November 2006.

An executive summary and introduction to stem cell science prefaces the document. Articles by the participating scientists cover topics such as basic research, commercial application, clinical medicine and patient advocacy. Ten concrete recommendations outline action needed at the policy level to ensure that European stem cell research and development fulfils its potential for advancing healthcare, biological sciences and the economy.

With its introduction to stem cell biology and its terminology for non-specialists, this document appeals to educators as well as policy-makers. Almost 2,000 hard copies have been circulated to scientists, educators and policy-makers in Europe. The high level of interest is also shown by more than 11,000 downloads of the PDF version from the EMBO website. Italian scientists have also translated the document for circulation in secondary education establishments in Italy.

To request free hard copies, please send an e-mail with the subject "Request stem cells publication" to: scisoc@embo.org.

■ www.embo.org/scisoc/stemcell.html

photo by M. Schupp (EMBL Photolab)



Are you a scientist with a flair for communication?

2007 EMBO Award for Communication in the Life Sciences

EMBO invites entries for its sixth Award for Communication in the Life Sciences.

Presented annually to a life scientist in Europe, the award highlights the exceptional efforts made by many scientists to combine science communication activities with a full-time research career.

The prize consists of a personal award of 5,000 euro and a handcrafted medal. EMBO

also nominates winners for the European Commission's Descartes Prize for Science Communication. An international jury, including EMBO Members, will evaluate the entries and the award will be presented at the next EMBO/EMBL Joint Conference on Science & Society from 2–3 November 2007 in Heidelberg (see page 9).

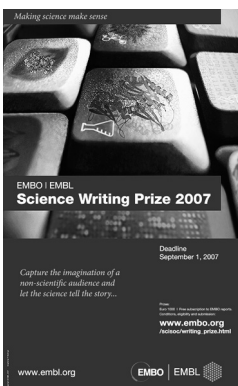
Recipients of past awards include *Fran Balkwill*, *Edoardo Boncinelli*, *Peter Csermely*, *Armand Marie Leroi* and *Ronald Plasterk*.

Annual application deadline (as of 2007)



■ www.embo.org/awards/communications.html

poster by P. Riedinger (EMBL)



Communicating science creatively

EMBO/EMBL Science Writing Prize 2007

It's time for Europe's young scientists to get those creative juices flowing and submit their entries for the 2007 EMBO/EMBL Science Writing

Prize. Jointly organised by EMBO and EMBL, the annual writing competition recognises science writing excellence. The contest encourages young researchers to present a topic using language and style suitable for a non-scientific audience.

All life scientists who are working in Europe and are 35 or younger at the time of submission are invited to participate. This year's winner will receive 1,000 euro plus one year's free subscription to *EMBO reports*. The young researcher will also be invited to present the winning entry at the 9th International EMBL PhD Student Symposium, from 25–27 October 2007 in Heidelberg.

A multinational jury, comprising EMBL PhD students, EMBO Members, and EMBO and EMBL staff will be looking for eloquent essays that catch the attention of a non-scientific audience. The winner of the 2006 prize was *Jelena Jovanovic*, a post-doc at

London's National Institute for Medical Research. Her engaging essay about the social impact and molecular origins of Alzheimer's disease was the winning submission amongst entries from all over Europe.

■ www.embo.org/scisoc/writing_prize.html

Annual application deadline



Evolution, disease and sustainable development

Upcoming EMBO/EMBL Conference on Science & Society

EMBO EMBL

The future of our species
Evolution, disease and sustainable development

8TH EMBO/EMBL JOINT CONFERENCE ON SCIENCE & SOCIETY
2-3 NOVEMBER 2007
EMBL, HEIDELBERG, GERMANY

FRIDAY 2 NOVEMBER
SESSION I
Emerging and re-emerging and persistent diseases
What can we predict?
How can we prepare and react?

SESSION II
Global sustainability and biology
Are we disinvesting our future?
How do we reconcile progress with "biosensitivity"?

SATURDAY 3 NOVEMBER
SESSION III
Treatment and enhancement
Necessary therapy or questionable improvement?
Are there limits to the applications of science?

SESSION IV
Human evolution: once were apes...
Are we still evolving?
If so, where next?

REGISTRATION FEE: 40€
STUDENTS: 20€

CONFIRMED SPEAKERS
Claudio BORDIGNON
Stefan BRINCEZU
Riccardo CORTESE
Julian DAVIES
Eve-Marie ENGELS
Ilkka HANSEN
Thomas HENNINGSEN
James HUGHES
Jürgen KLUGER
Bruno LATOUR
Zunaid MAVILIO
Thomas Gale MOORE
James ORBINSKI
Albert OSTERHAUS
Stuart PIMM
Zoltan PUNZIG
Jan STAMAN
Zeynep F. STOCK
Mark STONEKING
Felix WILLEKENS

www.embo.org/scisoc/conference07.html

Global warming is looming ever larger in the headlines these days. Scientists, and increasingly, the general public are becoming more aware of the reality of climate change and its impact on our future. To what extent are humans compatible or in competition with the rest of life on earth? In which direction will the evolution of *Homo sapiens* be steered?

These and other questions will be addressed at the 8th EMBO/EMBL Joint Conference on Science & Society from 2-3 November 2007 in Heidelberg, Germany. "The future of our species – evolution, disease and sustainable development" will explore major themes such as emerging, re-emerging and persistent diseases; global sustainability and biology; treatment and enhancement; and human evolution.

Organised by EMBO and the European Molecular Biology Laboratory (EMBL), these annual multidisciplinary conferences focus on scientific topics making the headlines. The most recent of these, "Genes, Brain/Mind and

Behaviour", was held in 2006. The tradition of these international events is to bring together over 200 participants from different sectors of society, including the biosciences, sociology, philosophy, journalism, communication and science education.

Past conferences have explored topics such as science and security; time and ageing; genetics, determinism and human freedom; and infectious diseases. DVDs of conference proceedings and special issues of *EMBO reports* have reflected these themes. Scientists and other interested members of the public are invited to participate in this multidisciplinary forum. For members of the media, registration is free of charge.

■ www.embo.org/scisoc/conference07.html

Funding innovative science communication

EMBO Fund for Science and Society Actions

Sparking the public's interest in science sometimes takes a bit of creative thinking. It also takes money. This is where the EMBO Fund for Science and Society Actions comes in. The scheme offers small grants for innovative science and society activities and sponsors speakers at scientific meetings.

Using the entertainment and art worlds is one of many effective ways of explaining scientific topics to a general audience. One EMBO-funded project at Portugal's University of Minho followed this concept, using Hollywood films to explain scientific subjects to high school students and teachers. Films like "A Beautiful Mind", dealing with schizophrenia, and the climatology thriller "The Day after Tomorrow" were used to promote discussion. Screenings were followed by Q&A sessions with scientists specialising in the featured subjects. "Hollywood Science – Film Cycle" was the name of this project, organised by the Life and Health Sciences Research Institute (ICVS).

EMBO's Science & Society Programme has been funding initiatives like this one since 2005. Applications are invited from all practising life scientists who work in Europe and have innovative ideas. Grants of up to 2,000

euro are available for science and society activities or for the start-up phase of larger-scale initiatives taking place in Europe. Other funded projects to date have included workshops for students and teachers, round-table discussions, websites, art exhibits, public information stands and practical experiments.

In March 2006, the EMBO Fund for Science and Society Actions was used in the UK to provide specialist equipment and reagents for lab practicals during "Schools Week" at the University of Bristol's Biochemistry Department. Three hundred and fifty secondary school students and their teachers were treated to a day of scientific talks and demonstrations, interacting closely with the department's lecturers and postgraduate students.

Some initiatives have shown the public the artistic side of science. In July and November 2006, the "Science in Pictures – Hidden Reality" photographic exhibition in Split, Croatia presented scientifically relevant photographs in an imaginative context. Taking part were 24 life scientists from Croatia, France, Germany, The Netherlands, Norway and the US.

One of the activities to be funded by the scheme this year will be an international

media writing contest at the FEBS Congress in July 2007. Participants are invited to enter the contest and write press releases about their recent research. The three best entries will be awarded cash prizes and the winning texts will be published as original press releases via the Austrian Press Agency – Original Text Service (APA-OTS). The aim is to encourage scientists to practice communication with the media and to promote their scientific research among a lay audience.

Funding for science and society speakers is another initiative of the scheme. Scientists organising meetings in Europe can apply for sponsorship of a speaker to talk on a science and society topic such as communication, public perception, ethics, risk or education. Funding covers travel and accommodation costs up to 1,000 euro and the EMBO Science & Society Programme is also happy to advise on the choice of topic and speaker. In the past, speakers have included *Bruno Latour*, *Alexandre Quintanilha* and *Steven Rose*.

■ www.embo.org/scisoc

Untangling a complex web

Centrosome 3D consortium

First dubbed the "centre of the cell" over a century ago, the centrosome lies at the heart of one of the most cleverly orchestrated processes in biology – cell division. When things go wrong, it also plays a part in diseases such as cancer. Despite considerable progress in centrosome research, its precise molecular structure remains somewhat of an enigma. The Centrosome 3D consortium, co-ordinated by EMBO Member *Luis Serrano*, hopes to change this.

Funded by the Spanish government, Centrosome 3D involves more than eight Spanish research groups, including two other EMBO Members, *Miquel Coll* and *Isabelle Vernos*, and several EMBO Fellows. Together this multidisciplinary group will work on unravelling the complex molecular matrix of the centrosome, stripping it down to reveal its structure, components and behaviour. The

team will look in particular at the assembly and interaction of proteins, mapping their location within the centrosome.

This approach will rely on a novel mix of experimental techniques including three-dimensional electron microscopy, X-ray diffraction, nuclear magnetic resonance and structural bioinformatics. The ultimate goal is to gain a better structural understanding of the centrosome's function and shed new light on its role in disease. Perhaps the most significant of these is cancer, but the consortium will also look at more recent links with neurodegenerative disorders such as Parkinson's and Huntington's. In addition, Centrosome 3D will work with another Spanish consortium, Centrosome CAM, involving research groups based in and around Madrid.

■ <http://ub.cbm.uam.es/research/centrosome.php>

EuroBioFund

Funding without frontiers

EuroBioFund

Trans-national support of European research has been the common cause of many scientific organisations in recent years, not least in the run-up to the European Research Council (ERC). In 2006, the European Science Foundation (ESF) took up the cause with EuroBioFund. Supported by the European Commission, the initiative promotes a co-ordinated strategy to funding European research in the life sciences.

EuroBioFund takes a somewhat unique approach, using an annual networking event, EuroBioForum, to bring scientists and funding organisations together. Each year, the conference concentrates on specific research areas, based on ideas put forward by the scientific community, public funding organisations and private foundations from across Europe. These ideas are reviewed by a steering committee of leading European

scientists, including EMBO Members *Carlos Martínez-A* and *Janet Thornton*.

The chosen themes represent major challenges in current life science research that could benefit enormously from co-ordination and funding at the European level. EuroBioForum gives scientists and funding organisations the opportunity to address these challenges in a structured way. The first EuroBioForum was held in Helsinki in 2006, taking important steps towards developing and co-ordinating future research programmes.

The next conference will be held in Lisbon from 5–7 December 2007 in collaboration with the Portuguese Foundation for Science and Technology (FCT). Scientists are invited to submit their "Expressions of Interest" by 28 May 2007.

■ www.esf.org/eurobiofund

EMBO Members to gather in Spain

Frontiers of Molecular Biology Workshop

Barcelona will set the scene for the next EMBO Members Workshop from 26–29 October 2007. "Frontiers of Molecular Biology" promises to be a strong scientific meeting, with the introduction of the EMBO Members elected in 2006. Participation is open to the entire scientific community.

In addition to the regular programme of talks by the new members, a mini-symposium on "Human Disease" is planned. This year's Nobel Lecture will be given by EMBO Member *Aaron Ciechanover* and the 2007 EMBO Gold Medal winner, to be selected later this year, will deliver an award lecture at a special ceremony.

Other highlights of the workshop will include a special interactive EMBO Science & Society Session, also open to the public, which will focus on how to communicate controversial scientific topics. A members' forum will also give the EMBO membership the opportunity to enter into direct dialogue with EMBO and discuss its activities.

Held annually in a different EMBO Member State, the EMBO Members Workshop is a unique networking opportunity, bringing together leading scientists from the molecular biology community. Existing EMBO Members have the chance to meet and welcome the new members, exchanging news of the latest developments in their research areas.

EMBO Members *Juan Valcárcel*, *Pere Puigdomènech*, *Miquel Coll* and *Francesc Posas* are responsible for the local organisation. Interested participants should ensure that they register to attend as soon as possible.

■ www.embo.org/members_meeting07

EVENT UPDATES FROM THE EMBO COMMUNITY 2007

FEBS Advanced Course
Lipid signalling pathways: from cell biology to novel drug targets
2–28 June, Ortona, IT
Daniela Corda, Antonella De Matteis, Peter Downes
www.negrisud.it/febscourse

BioTethed 4th European Course on Biotechnology Ethics
An interactive approach
20–27 August, Vilnius, LT
Franco Celada
www.biotethics.org/news/index.html

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

ELSO 2007
Frontiers of cellular, developmental and molecular biology
1–4 September, Dresden, DE
Kai Simons
www.elseo.org

FEBS Immunology Summer School
Immune system: genes, receptors and regulation
10–17 September, Hvar, HR
Meinrad Busslinger, Diane Mathis, Klaus Rajewsky, Michael Reth
www.febs-hvar2007.org

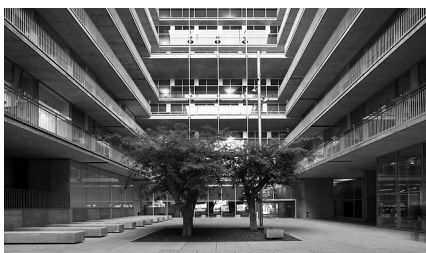
Getting to the root of disease

Centre for Genomic Regulation



In the years since the sequencing of the human genome, scientists have found increasing evidence that disease is determined, not by our genes, but by the genomic structures that regulate them. The Centre for Genomic Regulation (CRG), as its name suggests, focuses on this key area of biomedical research. Directed by EMBO Member *Miguel Beato*, the CRG recently moved to new state-of-the-art facilities at the Biomedical Research Park of Barcelona (PRBB).

Amongst the 360 researchers based at the CRG's new premises are four other EMBO Members – *Thomas Graf*, *Luis Serrano*, *Juan Valcárcel* and *Isabelle Vernos*. Thomas Graf heads up the centre's Differentiation & Cancer Programme and Isabelle Vernos is the acting coordinator of the Cell & Developmental Biology Programme. Luis Serrano recently moved from the European Molecular Biology Laboratory (EMBL) to run the EMBL/CRG Research Unit in Systems Biology. Other research priorities at the CRG include Bioinformatics & Genomics, Genes & Disease and Gene Regulation.

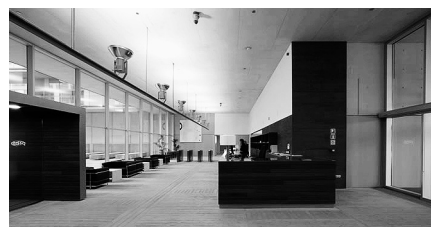


From its picturesque sea-side location at the Biomedical Research Park of Barcelona, the CRG aims to take advantage of its high-tech facilities to lead the way in the most significant areas of genomic research, collaborating closely with the clinical and pharmaceutical worlds. The hope is that greater understanding of genomic regulation in human cells, and how these processes are disrupted in disease, will lead to better diagnoses and treatment.

EMBO Member and CRG Director Miguel Beato sums up the motivation behind the centre's research: "The great challenge we face is to take advantage, responsibly, of the opportunities offered by understanding the genome to improve our quality of life. If support is given to projects such as the CRG, in only five or six years, the biomedical research scene could well have undergone radical change."

■ www.crg.es

The CRG's new facilities at the Biomedical Research Park of Barcelona (PRBB)



© photos by PRBB

Covering all the bases

Center for Biomembrane Research

Membrane proteins are responsible for an impressive range of biological functions. They control the flow of nutrients into the cell, drive out waste products, and transmit messages that support life or trigger cell death. They also play a major role in disease, making them an important target in biomedical research and drug development. The new Center for Biomembrane Research (CBR), led by EMBO Council Member *Gunnar von Heijne*, aims to exploit these multi-faceted proteins to their full potential.

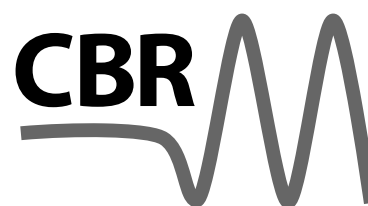
A broad research area requires a comprehensive approach and this is certainly reflected at the CBR, based at Stockholm University. With over 15 research groups, the centre com-

bines theoretical and experimental expertise in biochemistry, molecular biology, proteomics, bioinformatics and structural biology. "I don't know of any other settings that span the entire range from fundamental molecular and cell biology to structural biochemistry and bioinformatics," says Gunnar von Heijne. This collective competence offers new opportunities in the study of membrane proteins, traditionally a difficult area to study.

The main stumbling block in biomembrane research is the "fat-loving" quality of membrane proteins. Buried deep in the fatty cell membrane, they are almost impossible to purify using standard water-based methods, for the simple reason that fat is insoluble.

Through its interdisciplinary approach, the CBR aims to develop effective systems for overproduction and purification, as well as identifying and characterising new proteins and protein complexes. The centre will also foster contacts with industry, working closely with pharmaceutical and biotech companies.

■ www.cbr.su.se



AWARDS OF EXCELLENCE

■ EMBO Members

German Cancer Prize 2007, DE

Achim Leutz for his excellent work on the development of blood cells and leukaemias

GlaxoSmithKline Award 2008, Biochemical Society, UK

Stephen Jackson for his pioneering work on cellular response to DNA damage

Gottfried Wilhelm Leibniz Prize 2007, DE

Magdalena Götz and *Detlef Weigel* for their outstanding research

Heatley Medal 2008, Biochemical Society, UK

Venki Ramakrishnan for his seminal work on the bacterial ribosome and eukaryotic chromatin

Honorary Degree, Charles University, CZ

Ueli Aebi for his pioneering contributions towards understanding of molecular machines and continuous support of Czech science and education

Louis-Jeantet Prize for Medicine 2007, CH

Venki Ramakrishnan for his outstanding research on the ribosome and *Stephen West* for his pioneering work on DNA repair mechanisms

March of Dimes Prize in Developmental Biology, US

Anne McLaren for her contributions to the field of reproductive technology

Novartis Medal and Prize 2008, Biochemical Society, UK

Stephen West for his exceptional work on the molecular mechanisms of DNA repair and the relationship between genome stability and tumour genesis

Paul Ehrlich and Ludwig Darmstaedter Prize 2007, DE

Ada Yonath for her outstanding contributions to the analysis of the three-dimensional structure of ribosomes

Santiago Ramón y Cajal Prize for Research in Biology 2006, ES

Juan Modolell for his work on the early development of the nervous system of *Drosophila*

Thudichum Award 2008, Biochemical Society, UK

Eric Barnard for his pioneering work on the molecular biology of neurotransmitter receptors and his landmark contributions to neurobiology

UCSD/MERCK Life Sciences Achievement Award 2007, US

Stephen C. Harrison in recognition of his discoveries and groundbreaking work in protein research

Wolf Prize in Chemistry 2006/2007, IL

Ada Yonath for her structural discoveries of the ribosomal machinery of peptide-bond formation and the light-driven primary processes in photosynthesis

■ EMBO Young Investigators

Colworth Medal 2008, Biochemical Society, UK

John Rouse for his outstanding work on deciphering the mechanisms by which eukaryotic cells sense and signal DNA damage

A GOOD READ – PUBLICATIONS FROM THE EMBO COMMUNITY

■ books

Archaea: Evolution, Physiology, and Molecular Biology

(Blackwell Publishing Ltd, ed. 2007)

Edited by

Roger Garrett and *Hans-Peter Klenk*

Blackwell Publishing says:

"Introduced by Crafoord Prize winner Carl Woese, this volume combines reviews of the major developments in archaeal research over the past 10-15 years with more specialized articles dealing with important recent breakthroughs... The review chapters and specialized articles address the emerging significance of the Archaea within a broader scientific and technological context, and include accounts of cutting-edge research developments. The book spans archaeal evolution, physiology, and molecular and cellular biology and will be an essential reference for both graduate students and researchers."

Lectins

Second Edition

(Kluwer Academic Publishers, ed. 2003)

by *Nathan Sharon* and *Halina Lis*

Springer says:

"Since publication of the first edition in 1989, great strides have been made in several areas of lectin research... As a result, this book is about 470 pages long (three times the size of the first edition), with over 200 figures and some 30 tables. The book starts with an overview of lectin research followed by a survey of the occurrence of lectins in nature and a detailed description of their properties, with emphasis on specificity, structure and interaction with ligands at the atomic level. The biosynthesis and genetics of lectins are then discussed, as are their numerous applications in biology and medicine. A summary of the nutritional effects of lectins follows, and finally their functions in nature are dealt with."

■ research

Lectins: Carbohydrate-specific reagents and biological recognition molecules

(part of the "Reflections" series)

Nathan Sharon

Journal of Biological Chemistry **282**:

2753–2764

(02 Feb 2007)