

Max Perutz, 1914 - 2002

Max Perutz, Nobel Prize-winning biologist and an important figure in EMBL history, died on Feb. 6, 2002 at the age of 87.

Perutz visited EMBL in May 2001 to participate in opening ceremonies for the new EMBO building. During his visit he gave talks about science and the history of EMBO and EMBL. He also took time out for an interview, which appears in this issue.

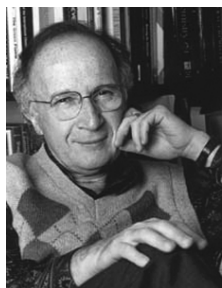


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EMBL and HD University Clinic establish Partnership Unit

EMBL and the Medical Clinic of the University of Heidelberg have created a new cooperative research unit. The Dean of the Medical School, Prof. Hans-Günther Sonntag, and EMBL Director General Fotis C. Kafatos announced the news at a press conference held on January 25. The "Molecular Medicine Partnership Unit" will be housed in the University Clinic and is designed to fill a gap that exists between clinical and basic research, as well as to bring together university and external research. The research unit will be co-directed by Prof. Andreas Kulozik, who is the Director of the Hematology, Oncology, and Immunology Departments of the Children's clinic, and Dr. Matthias Hentze, who is a research group leader and senior scientist at EMBL.

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science and society

The poetry of a scientist; the science of a poet

On March 19, Roald Hoffmann, winner of the 1981 Nobel Prize for chemistry and accomplished artist and poet, will visit EMBL Heidelberg to give a distinguished lecture entitled "One culture, or the Commonalities and Differences between the Arts and the Sciences." In this issue of *EMBL&cetera* he shares some of his poetry and essays with our readers.

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What mother doesn't know... *from the sister sciences*

Black pepper is bad for you. Drink your orange juice within eleven minutes of squeezing. Grate your carrots. What are the facts behind those nutrition myths our mothers have handed down to us? Find out in this issue's column *from the sister sciences...*

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EC's Director General for Research visits EMBL



Achilleas Mitsos, the European Commission's Director General for Research, paid a visit to the EMBL Main Laboratory in Heidelberg on Jan. 28. Director Mitsos met with Director General Fotis C. Kafatos and senior representatives of the Laboratory to discuss research and general topics related to European research policies. The EC is putting the finishing touches on the Sixth Framework

Programme. Stops on the Director's tour of the Laboratory included visits to the new EMBL core facilities, as well as to the on-campus start-up company Cellzome.

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obituary

Science is not a quiet life: Max Perutz (1914-2002)

Like a great encore to round off a brilliant concert, Max Perutz's last talk at EMBL in May, 2001, made an impression that will be remembered for a long time to come. The Operon was packed full as this frail man stepped up to the front, placed his handwritten notes on the lecturn, adjusted his horn-rimmed glasses to a slightly-crooked angle on his long face, and began to speak about science. He talked for forty-five minutes without a pause, glancing at his notes three or four times, then adroitly fielded questions, followed by thunderous applause. It was the last time he would speak at the Laboratory he helped to conceive. Max Perutz died on Feb. 6, 2002, at the age of 87.

Perutz was the mentor of Sir John Kendrew, EMBL's first Director General, and shared the 1962 Nobel Prize in Chemistry with Kendrew in recognition of their solution of the first protein structures. Perutz solved the structure of haemoglobin. 1962 was the year that Watson and Crick won their Nobel Prize for their work on DNA, and John Steinbeck was awarded the Prize for Literature.

Perutz's scientific accomplishments are far too numerous to list here; many of his important papers appear in the book, *Science is not a Quiet Life*. He continued to practice science actively long into his "retirement", and in his later years, he wrote extensively on the history and social aspects of science. He collected a number of pieces which he wrote for the *New York Review of Books* in a vol-

ume called *I wish I'd made you angry earlier*, with the subtitle *Essays on Science, Scientists, and Humanity*. His preface to this work begins, "Every now and then I receive visits from earnest men and women armed with questionnaires and tape recorders..." and goes on to say gently that, in pursuing the social factors that contribute to great science, many of these interviewers are barking up the wrong tree. The essays themselves are beautifully-written exposés about science and its practitioners.

While it was an exciting opportunity to be able to speak with Max Perutz, it was also a daunting prospect to interview someone whose works provide a model for writing about scientists. He very generously spared a few minutes during his visit to EMBL to sit down and have this chat. He apologized for breaking it off, but he needed, he said, just a few quiet minutes to prepare his talk.

Unfortunately, he never had the chance to review or correct this transcript. So any mistakes that appear here are mine. Fortunately, a broad collection of interviews has been made by the Vega Science Trust; in 2001 they recorded over eight hours of conversations with Max Perutz. Their website offers a selection of recordings from interviews on the following web site:

<http://www.vega.org.uk/series/facetoface/perutz/>

– Russ Hodge



Max Perutz at EMBL in May 2001.

photo by Marietta Schupp

YOUR WORKS REFLECT A WIDE VARIETY OF INTERESTS AND INTROSPECTIONS THAT GO FAR BEYOND "PURE SCIENCE." HOW WELL-ROUNDED DO YOU THINK A SCIENTIST NEEDS TO BE TODAY?

The more well-rounded the better, because you never know where the next clue is going to come from. You will be better prepared if you read a lot and keep informed. A scientist doesn't have to be well-rounded, but it enriches your life if you have a lot of interests. We hear that a lot of people's lives become very empty when they retire. Mine is very rich indeed. Retired people often complain the years go by quickly, almost without their noticing. Well, mine don't. They are full of interesting events.

I WISH I'D MADE YOU ANGRY EARLIER HAS A LOT OF PASSION IN IT FOR SCIENCE AND FOR HISTORY, AND IN IT YOU TAKE UP YOUR OWN PERSONAL HISTORY. YOU WRITE, FOR EXAMPLE, THAT YOU FELT LIKE YOU HAD "WASTED" THE FIRST YEARS AT THE UNIVERSITY WHEN YOU WERE STUDYING INORGANIC CHEMISTRY. IT TOOK A LOT OF PASSION TO SPEND SIX YEARS LOOKING AT SPOTS IN DIFFRACTION PATTERNS. WHERE DID THAT PASSION COME FROM?

Indeed, I wrote that I wasted a lot of time on inorganic chemistry, but I'll tell you a

story. As a 17-year-old in Vienna, I had an English girlfriend. She then returned to England and we kept writing to one another. Luckily she kept all my letters and a few years ago, she sent them back to me. I found some marvellous things in those letters. I read, for example, that I was thrilled with chemistry. And in every letter I wrote to her, I claimed that I enjoyed being a chemistry student. In my third semester in Vienna, I expressed my worries that I would have to give up chemistry. My father was a textile manufacturer. His idea was that I would finish my studies and then I would go into the business. The letters were full of my turning over in my mind how I could escape becoming a textile manufacturer in a Czech village, how I could escape giving up chemistry. And I found another thing: I wrote that it would be immeasurable what mankind would lose if I didn't win the Nobel prize! As a nineteen year old chemistry student! As you can see, we wrote to each other a bit tongue-in-cheek.

COULD YOU HAVE IMAGINED YOURSELF GOING IN TO ANOTHER FIELD? LITERATURE?

No, no. I don't really have a gift for literature. I couldn't write fiction. I don't remember conversations well enough to characterize people; that's a necessary skill. But I am interested in people. I am often pushed to write my autobiography, but truthfully, I am much more interested in other people's lives. If you read the book you see what fascinating characters writing has gotten me to know about.

YOUR LIFE IS FULL OF INTERESTING STORIES. DURING WORLD WAR TWO, FOR EXAMPLE, YOU PARTICIPATED IN A SECRET GOVERNMENT PROJECT CALLED "HABBAKUK," AIMED AT MAKING SOMETHING LIKE LARGE AIRCRAFT CARRIERS OUT OF ICEBERGS... IN RETROSPECT THE WHOLE THING SOUNDS KIND OF CRAZY. WHAT DID YOU THINK AT THE TIME?

It is absurd, yes. For a long, long time even I wasn't told what our research into "strengthening ice" was for. It was so secret I wasn't allowed to know. When I did find out, I was really duty-bound to do my best. It was not for me to shoot this project down.

YOUR COLLECTION ALSO CONTAINS A VERY EXTENSIVE CRITIQUE OF THE BOOK *MOTHER COUNTRY*, BY MARILYNNE ROBINSON, WHO CLAIMS THAT THE BRITISH "ARE POLLUTING THE IRISH SEA, THE BRITISH ISLES, AND THE ENTIRE GLOBE WITH THE RADIOACTIVE DISCHARGES FROM ITS NUCLEAR PLANTS AT SELAFIELD." IT'S A LONG, VERY DETAILED ARTICLE AND ONE CAN TELL THAT YOU SPENT AN IMMENSE AMOUNT OF TIME DOING RESEARCH, GOING BACK TO ORIGINAL SOURCES, TO WRITE IT.

This is a book that I received from the

editor of the *New York Review of Books*. When I read it, I was sure that it was just sensationalism without any scientific foundation, but I really had to demonstrate it. If you want to disprove somebody's thesis, you have to have very good evidence; simply expressing an opinion has very little value. So I really went carefully into it – and then of course I always get hooked and interested in the problem – if the children in Robinson's book didn't get leukemia from the radioactivity in the place, what could they have got it from? During my reading, I came across a paper saying that such increases in the incidence in leukemia seem to arise if people move into new communities where they are not immune to the viruses that are about there. This is a plausible report with reasonably good evidence, the viral origin of leukemia is also supported, yet it is really hard to prove anything.

My first encounter with the *New York Review* was similar to this. I had been writing a few reviews for English journals, and one day to my surprise, I got this request from the *New York Review*. I was terribly pleased because it is by far the best literary journal in the world. Then I read the first book they sent – by an American Columbia physicist about the future of science – and I found it was complete nonsense. So I rang the editor and said I was very pleased to get this request, but I couldn't review this book –

it was just nonsense. He asked me, well, why is it nonsense? Tell me. The author had written that in the future, computers would be plugged into people's brains. Spare organs would be kept in hospitals like carburetors in a garage. I said this was all outrageous fiction. To which the editor replied: but this is what all Americans believe – show them that it is nonsense. And that was my first effort for him.

PUSHING MOLECULAR BIOLOGY IN EUROPE AND THE CONCEPT OF EMBL WAS A HARD THING TO DO FORTY YEARS AGO. YOU MUST HAVE HAD A PASSION FOR EUROPEAN SCIENCE.

I did, but Kendrew much more so. I am still an enthusiastic European, all in favour of Britain fully joining in. Yes, I was disappointed that molecular biology had found so little echo in Europe. It was partly the result of the war, but not entirely. It was also partly the result of the conservatism of professors in University departments. The biochemists were continuing to work on enzyme chemistry that had been the hot subject before the war. The physiologists did electrophysiology. And so on. They didn't really show very much interest in borderline subjects. I liked the ideas that we were developing, those that led to the establishment of EMBO and EMBL. It was hard for young people in Europe to get any training because the Americans could get traveling fellowships to come over, but the



From left to right: Maurice Wilkins, John Steinbeck, John Kendrew, Max Perutz, Francis Crick and James Watson collecting their Nobel Prizes in 1962.

Europeans couldn't – Germans, for example, couldn't even get a travel fellowship to come and work in the Pasteur Institute in Paris. There was no money for such a thing. Tuppy was lucky. He is an Austrian biochemistry professor now, and he recalled during a talk that shortly after the war, my former professor in Vienna wrote to me that he had a young man in his lab who would like to come and do work in Cambridge. This was Tuppy; he got a grant from the British Council that enabled him to live in Cambridge. He became a postdoc with Fred Sanger and in fact determined the amino acid sequence in one of the chains of insulin. And that is what made his reputation. Returning to Austria he had a very good career. But that was exceptional at the time.

SO MOBILITY WAS A KEY PART OF THE EARLY PLANNING.

Yes. I was very keen on getting traveling fellowships and summer schools so that people would be trained. On 1963, at the founding meeting in Ravello, I felt to talk about a European Institute was premature because there was far too little molecular biology in Europe to get it going. So I was very keen on this traveling fellowship and summer school thing. We managed to get the money for this from the Volkswagen Foundation. That was one of these lucky coincidences. Putenahnt, who was then president of the Max Planck Gesellschaft, was also professor of biochemistry in Munich. He sponsored a young man working on the amino acid sequence of the chains in hemoglobin, which was a formidable undertaking in those days, and you see, through hemoglobin, we got together, and became friendly with Putenahnt. I

was able to go to him and tell him about this scheme of ours. By chance he was also chairman of the governing board of the Volkswagen Foundation. So, he sponsored our application and got us this grant for three years, and they renewed it for another three years, and by that time the programme was so successful that governments were beginning to take it over. But we could never have got the money from governments originally.

LET'S POSE THE QUESTION THAT YOU POSED IN YOUR LETTER AS A 19-YEAR-OLD AGAIN. WHAT WOULD MOLECULAR BIOLOGY HAVE BEEN LIKE WITHOUT MAX PERUTZ? YOU INFLUENCED SO MANY YOUNG PEOPLE WHO HAVE HAD A VERY SIGNIFICANT IMPACT ON THE DEVELOPMENT OF THE SCIENCE...

It is nice to hear that. I am always pleased when somebody says that in something I have written or in some lecture I have created interest. What if...? You can never really say what somebody else would have done. But it was a crazy idea to try to solve the structure of a protein; crystallographers thought that it was "megalo-mania". To try to tackle hemoglobin when the structure of sugar was still unknown...

YOU SPENT SIX YEARS LOOKING AT SMALL SPOTS ON PHOTOGRAPHIC PLATES. HOW DID YOUR WIFE FEEL ABOUT THIS?

She had marvelous faith in me, that something would come out of it. I was so involved that I think I must have been difficult to live with. I couldn't think of anything else all of that time.

At many stages we experienced failure after failure, and occasionally I thought that maybe my colleagues were right, that I was wasting my life on an irresolvable problem. But if you want to make

your name in science, you try to accomplish something that has defeated everyone else. And I was just terribly lucky that there were other young people who realized that this was a field with a future and that John Kendrew and Francis Crick and Jim Watson, Sydney Brenner and others all came along to this small unit that started at the Cavendish, this unit that encouraged a lot of marvelous young men who achieved wonderful things. Perhaps one fact that has helped is that I am not jealous of other people, colleagues who work with me and make greater discoveries than my own... I think it is an important thing. So many people are petty and jealous and can't tolerate anybody. They wouldn't have tolerated Crick in their laboratories.

IN THE BOOK YOU STRESS THE IMPORTANCE OF GIVING CREDIT WHERE CREDIT IS DUE.

It is incredibly important to give credit to young people, yes. There was a great tradition in the Cavendish that you don't sign a paper unless you have actually done some science, made a contribution yourself. You don't sign it just because you are the head of the lab. Just suggesting the experiment was not enough. I am always upset that this principle is now disregarded – it's unnecessary, because the average professor has already got enough credit. He doesn't need it. It is the young people who need it. It also must be very difficult now for young people – if every paper has a dozen authors, will you really get credit for what they have actually done?

– interview by Russ Hodge

Alumni Association announces Swedish postdoctoral fellowship

The Swedish Foundation for Strategic Research has announced plans to sponsor a Swedish postdoctoral fellowship at EMBL. The grant will fund the research of a postdoc at EMBL for three years. The Royal Swedish Academy of Science will advertise the position and propose a selection of suitable candidates to the selection committee, which will include representatives from the Academy, a Swedish EMBL alumnus, and the EMBL evaluation committee. Lennart Philipson, Director-General of the EMBL from 1982 to 1993, was instrumental in securing the fellowship.

This is the second foundation to sponsor an EMBL fellowship: the Louis Jeantet Foundation, in Geneva, sponsors predoctoral students from Eastern Europe.

"This is a delightful development," says Angus Lamond, president of EMBL's Alumni Association. "We hope that this will be the first of many such initiatives; the Alumni Association plans to actively contact other foundations who might do the same."

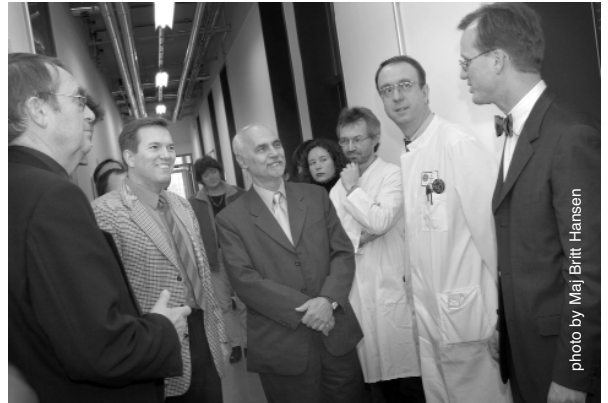
– Sarah Sherwood

**Are you an EMBL alumnus? Keep us updated about your current address and we'll keep sending you EMBL &cetera.
Email us at info@embl-heidelberg.de**

New research unit established between EMBL and University of Heidelberg Clinic

EMBL and the Medical Clinic of the University of Heidelberg have created a new cooperative research unit. The Dean of the Medical School, Prof. Hans-Günther Sonntag, and EMBL Director General Fotis C. Kafatos announced the news at a press conference held on January 25. The "Molecular Medicine Partnership Unit" will be housed in the University Clinic and is designed to fill a gap that exists between clinical and basic research, as well as to bring together university and external research. The research unit will be co-directed by Prof. Andreas Kulozik, who is the Director of the Hematology, Oncology, and Immunology Departments of the Children's clinic, and Dr. Matthias Hentze, who is a research group leader and senior scientist at EMBL. The two scientists have already led fruitful collaborations; over the past few years they have made important contributions to under-

standing the molecular mechanisms behind common blood diseases – such as thalassemia, the world's most common inherited disease. The mechanism involves an impairment of "quality control" mechanisms as the information contained in genes is expressed in proteins. Another important collaboration by Kulozik and Hentze revealed a new molecular mechanism by which blood clots form, sometimes leading to deadly embolisms. They discovered that a change in gene expression leads to an overproduction of a particular clot-promoting protein in the blood. The researchers have expanded their investigation to pursue the question of whether



Fotis C. Kafatos and Matthias Hentze meet with representatives from the Heidelberg University Faculty of Medicine to announce the formation of the Molecular Medicine Partnership Unit.

this mechanism might also play a role in other diseases.

– Annette Tuffs, Universitätsklinikum Heidelberg; translation by Russ Hodge

letter

A vote that counts: choosing the right Staff Association representative

The time of year is again rolling around when we're asked to check off a few names on a ballot to choose our representatives to the Staff Association (SA). Every year, a few positions become open on this important committee. Unfortunately, most people don't seriously consider the idea of participating themselves. There's usually only one candidate for each open slot (and sometimes none).

Of course, who fills these positions doesn't really matter if the issues at stake are how much money each club gets for its activities, or how many parties will be subsidized. Before I joined as a post-doc representative four years ago, that was my impression of what the SA was mostly about. But things were changing. At that time important decisions were being considered: the renewal of the Intermedex contract and a potential major overhaul of the health plan, a new pension scheme, changes to the EMBL Rules & Regulations, and official responses to several ILO rulings.

Several years later, many of these issues still haven't been resolved. On the issue of health care alone, it's still not clear how EMBL might fairly implement a 'Pflegeversicherung' (insurance for long-term care) to benefit those who stay in Germany after they leave EMBL – such care might become a burden for the majority of EMBL staff, who eventually leave the country and wouldn't benefit from it; another issue is how to provide catastrophe insurance for the institute; yet another is to resolve the problems faced by outstation staff, who have to deal with health care systems that differ dramatically from those in Germany – on which their care is currently based.

Clearly, these are major issues. And who is working on them? Although it has no direct power of its own, the SA is meant to advise the Administration on the needs and interests of the staff on such matters before the Administration makes a formal rec-

ommendation to Council. The SA should represent a cross-section of the EMBL staff in Heidelberg, with at least one representative each for pre-docs, post-docs, technicians, administration, group leaders, and ancillaries, as well as a so-called 'floating' position, plus one or two representatives for each of the outstations. In theory, SA members should also represent EMBL's various other social groupings, including different nationalities, family status, staff eligible for pensions, etc. At the moment, though, there are a number of imbalances. Strikingly, the committee has long been without a pre-doc or post-doc representative and the group has become rather senior.

There is always a danger that a lack of representation will lead to some points of view being left out, and these are important issues that will affect people differently. If you have young children, will anyone necessarily realize what problems might arise for you by changing certain policies? As a post-doc, would you be upset if your premiums went up significantly to pay for long-term benefits that only apply to pensioners or to staff members who stay in Germany after they leave EMBL?

What is the solution? The least you should do is find out who the current SA members are and how they intend to deal with the issues that are currently on the table. Then get to know any new candidates when they are announced. Find out how open-minded they are, whether they know what your concerns are, and whether they are willing to balance them with their own. If you're not happy with what you hear, let them know what your views are. Be sure to vote for someone who will represent you effectively – maybe even run yourself.

Get to know your representative, because it really may matter!

Chris Blaumüller
Former Staff Association Representative

from the Administration

ILO Judgments

Judgment 2081 (Salaries)

Council and the Administration are anxious to bring this long-running issue to a satisfactory close. Unfortunately in the judgment in the last outstanding salary case, which was delivered on January 30, the Tribunal declined to give the legal clarification sought by the Laboratory. This has left doubts about how the Tribunal's judgments should be implemented. On the one hand a blanket application of an increase of 2.1% on the salary scales in all duty countries would preserve equality of purchasing power between staff in all our centres of operation but is likely to be challenged by some of the complainants. On the other hand a simple application of the pay increases given in 1995 to salary scales in every subsequent year could not be challenged by the complainants but would create imbalances between the salaries of staff in different service countries.

The Administration has discussed the options with EMBL's Staff Association and made its recommendation to Council, who are currently considering their response. A decision is expected by the first week in April.

Judgment 2082 (Pension Transfers)

In this case the Tribunal ruled that members of personnel who had previously been refused permission to transfer rights they had accrued in the German pension system before joining the EMBL pension scheme should now be allowed to transfer them. At the time the complainants had made their application to transfer in funds, the Regulations permitted such transfers to be made. This facility was subsequently withdrawn and requests for such transfers cannot now be accepted. Although the judgment affects only the 8 members of personnel who complained to the ILO, the Administration takes the view that in equity any other members of personnel who had previously applied formally to transfer funds into the EMBL pension scheme and been refused permission by EMBL should also have the right to reactivate their requests.

Judgment 2089 (Calculation of Pension Increases)

Some members and former members of staff had complained that Council's amendment of the method of calculation of pension increases was an arbitrary breach of contract and a denial of their acquired rights. The Tribunal decided that the changes made by Council did not constitute a breach of the complainants' acquired rights and dismissed the complaints.

from the Staff Association

ILO Salary case In November Council voted "in principle" to implement ILOAT Judgment 2057 on salary adjustments (filed by 3 private individuals) by applying 2.1% to the salary base in all countries to preserve salary parity. In January the ILOAT verified the Staff Association claim that salary adjustments in 1995 must be reflected in the salary base for subsequent years (Judgment 2081). After this second judgment, the Lab and member states are in the process of clarifying the legality of their original interpretation of judgment 2057. The Staff Association expects a written statement from the Administration in March on its final recommendations to Council on implementing the two judgments. These recommendations will be voted on by Council in either a mail ballot or, if necessary, at an extraordinary Council meeting in March. Although the Staff Association would like to end the case and does not plan any further appeals at this time, we are waiting for the Council's reaction to Judgment 2081 before deciding our next steps.

Pension scheme In January the ILOAT also decided on two EMBL pension cases. In Case 2089, EMBL pensioners appealed Council's decision in 2000 to amend Article 36 of the Pension Scheme Rules, which made mandatory the adjustment of pensions according to the cost-of-living index (till then coupled to salary adjustments), but eliminated the discretionary standard-of-living increase. The Court ruled that EMBL pensioners do not have an acquired right to pension adjustments in line with salaries as given by the rules until 2000. It stated that the change to Article 36 is not necessarily disadvantageous to pensioners: if pensions are tied to salary adjustments, then they would, in times of economic growth, rise in conjunction with salaries in the working force; but periods of negative growth would then necessarily have a negative impact on pensions. The judgment cannot be reappealed.

In Case 2082, 8 (future) pensioners claimed their right under Article 12 of the Pension Scheme Rules to transfer pension funds they had previously paid into the German national system to the EMBL pension fund. Such a transfer had become possible in 1995 when the German government enacted a law allowing outward transfers from the national fund. In 1997

the 8 pensioners applied to the Lab to make a transfer into the EMBL fund. The Lab considered the pensioners to be ineligible, however, as its interpretation of Article 12 would allow such a transfer only at the time of taking up employment and where already allowable. As the German fund did not allow this until 1995 and as EMBL had no corresponding instructions for such transfers, it decided that the pensioners could not retroactively take advantage of the new law. The Lab's decision was contested by the 8 complainants before the ILOAT, which decided in their favor: the inward transfer must be allowed. Article 12 has since been abolished, however, so that this decision applies only to the 8 appellants and has no effect on other (future) pensioners.

Intermedex has a new manager. Don McPhee, a former EMBL employee. They now have multilingual employees and an e-mail address (intermedex@t-online.de) for better service. The current health scheme (Intermedex) has been extended until December 31, 2004.

Staff Association elections will be held again this April. Time to think about running for office! Positions open include administration, ancillary, post-doc and pre-doc representatives. See your friendly Staff Association representative for more details!

Legal Advisor Following a recommendation from the Staff Association, the Administration is currently holding interviews for the new position of legal adviser. S/he will advise the management and the Staff Association on legal questions. Consultations on private legal matters for staff members will not be possible, however.

Health Scheme and Rules and Regulations revisions In January the Staff Association resumed discussions with the Administration on revising the health scheme and reviewing the Rules and Regulations. In a series of bi-weekly meetings throughout 2002, a working group comprised of Administration, Staff Association and staff members will negotiate on revisions to both.

Inspiration is everything...

Have we achieved anything in science communication over the last 10 years? I would like to think so, but judging by the Eurobarometer 55.2 study, published in December last year, not much has changed. Only 18% of those questioned had visited a science and technology museum in the previous 12 months, and of the remainder, the largest proportion – 33% – were not interested. When people are asked to list 9 disciplines in order of "scientificness" (*i.e.*, how scientific they appear to them), medicine comes out top, biology 3rd, mathematics a paucity 5th, and economics 8th, after, wait for it, astrology! Answers to simple questions such as "Antibiotics kill viruses as well as bacteria: true or false?" (26.6% true, 35.3% false, 38.1% don't know) show that sadly nothing much has changed since the previous Eurobarometer study in 1991. Strikingly, however, people regard scientists as the most trustworthy profession when it comes to explaining an incident of national concern. That is some responsibility.

But responsibility is not limited to individual scientists. Scientific organisations and institutes are increasingly involved. EMBO's tradition in Science & Society goes back to 1995 when the EMBO Council decided to found a science and society committee. This committee monitors events and helps plan the direction and activities of EMBO's Science & Society Programme. Multidisciplinary public meetings have since been joined by a science communication competition, "science in the pub", teachers workshops

in molecular biology, and media workshops. An often neglected component of society, especially when it comes to science, are women. 2001 saw the launch of the EMBO Women in Science Project, and in February 2002 the Restart Fellowship scheme was started.

Broadly speaking, the challenges that scientists and society must meet are two-fold: 1. to educate the new generation, providing it with the tools it needs to become the scientists and informed consumers of tomorrow; 2. to establish cross-cultural and cross-disciplinary opportunities for dialogue. But education is the prerequisite.

By now the embarrassment of the ubiquitous PISA study (Programme for International Student Assessment) in certain quarters is diminishing, as the PISA receptors are downregulated, and efforts turn to understanding and remedying the faults it has exposed. One thing is clear: interest largely determines pupil motivation and performance. And a motivated pupil develops the skills necessary for life long learning, an absolute necessity in today's fast moving world of new technologies. Much responsibility rests with teachers. Inspired teachers make inspired pupils.

Both EMBO and EMBL have a strong interest in promoting the liaison between scientists and schools, and it is this that inspired the EMBO teachers workshop in molecular biology last July at the EMBL. So popular was it, that the pilot phase has led to plans to expand this initiative to other European countries in conjunction with some of the EMBL outstations and



other institutes. This year's teachers workshop takes place on 5 and 6 July at the EMBL. Improving links with schools and teachers is, however, only half of the challenge. The other is making good communicators out of scientists; encouraging them to develop the skill of communicating their research to an audience with less scientific knowledge than they. An inspired communicator can win the hearts and minds of the public. Europeans could learn something from Americans in this respect. For all those who are interested to find out more, EMBO organises an annual media workshop for scientists as part of the Fellows and Young Investigators meeting. Invited media experts will reveal the dark secrets behind their business, and members of the audience will be given the chance to be interviewed by one of them. The workshop is on 13 April in the Operon.

We may have to wait for the next Eurobarometer results to know whether these initiatives have had an effect, but if we do not inspire people with science, others will inspire them against it.

– Andrew Moore

lab notes

from the Szilard Library

In response to library user requests, the Szilard Library has introduced a new electronic interactive service, *Selective Dissemination of Information*, that will alert users about the arrival of new books and journal issues on research areas of interest. Users will create their own profiles (<http://library.embl-heidelberg.de/login-personal.html>), indicating which types of books and journals they are interested in. Notification will be sent by email once a journal issue of interest has arrived; information on new books will be sent at the beginning of the month. Alternatively, users can log on to the library web catalogue for updates.

Advantages of the new system:

- highly topical and reliable
- high quality and flexibility
- information on recently received journal issues and books in the workplace
- possibility to reserve new books
- full information and table of contents (pdf) for all new book titles

from the Photolab

New photolab server. We have now set up and are running the new photolab server, which replaces the old Photolab server and EMBL Slidewriter. The new server is faster, and is accessible not only from Macs (via AppleTalk), but also from PCs and Unix platforms (via ftp). For details please check the Photolab webpages.

Think ahead! As spring approaches, so does the conferences season – for speakers, researchers and organizers. Now is a good time to think ahead and plan your posters, group photos and image preparations. And don't forget to book your beamers well in advance!

from the personnel section

Good news for car buyers! Volvo Germany has announced that it will offer EMBL personnel a 16% discount on new cars. The offer is valid for one year. For more information, contact Michael Walter from Autohaus Geisser (michael.walter@volvo-geisser.de; tel. 0721/565000). Similar offers are available from Volkswagen and other dealers. Check with the Personnel section for details.

from the sister sciences

My mother says it's horribly bad for you

Food myths for the foolhardy from around the globe

How often have you been sitting around the dinner table, about to sprinkle some pepper on your pasta, and some well-wishing table companion stops you in your tracks, saying, "ooh, I wouldn't do that, it's bad for you"?

EMBL researchers come from across the globe, each bringing cultural culinary knowledge passed on to them by their mothers, and to them by their mothers. And the myths run rampant in the canteen at lunchtime. Is what mom says food fact, or kitchen myth? In this issue of *EMBL&cetera* we set out to find the truth. Here we go...

nutrients we take in. It sets in motion the mechanisms that lead to digestion and subsequent gastrointestinal absorption.

Some say that black pepper is gritty and difficult to dissolve in the body, leading to potential festering points in the intestines, though we suspect that you would have to eat a shaker-full for this to happen. But who would want to try that anyway? One thing is true though, black pepper has been reported to congest blood vessels. Anyone who suffers from varicose veins or hemorrhoids might want to steer clear.

a bit suspect, but freshness is certainly an advantage when making the most of your juice. The main vitamin in orange juice, as we all know, is Vitamin C. Vitamin C, or ascorbic acid, is an "antioxidant" vitamin, essential to counteract harmful "free radicals". Free radicals are simply free atoms that can "fly" around and do damage to things like DNA. While small amounts of free radicals promote beneficial oxidation, in excess, they can damage cell components and contribute to several major diseases. Once Vitamin C, which is rather unstable, binds to a free radical, it self-destructs in most cases. Because it works in this way, Vitamin C has a pretty short half life, so the longer it sits around, the less antioxidant potential it has. Fresh is better than frozen, and it's probably better to gulp the fresh stuff down as soon as you can.

By the way, if you are going to forego yer good ole' glass of OJ for a quick-fix Vitamin C tablet, beware! Ascorbic acid particles will get packed into your teeth, and can rot them away. Brush your teeth right afterwards – if you want to keep your tooth enamel.

DENMARK: PARSLEY SHOULD NEVER BE REHEATED. FACT OR MYTH?

Mom might be right here. Parsley, both the curly English and the flat-leaved Italian type (or French and Spanish, as I've heard them called) have a more or less ruffly structure that increases the surface area where garden dirt and bacteria can reside. We often cut our parsley fresh from the garden, give it a quick rinse, and toss it in our salads or on top of cooked dishes. Fresh is fine. The problem is leftovers. Since those bacteria aren't usually washed away completely by harried and



ITALY: BLACK PEPPER IS BAD FOR YOU. FACT OR MYTH?

Pepper, the collective name for the fruit, *Piper nigrum*, is known as the "King of spices", and is the single most commonly-used spice in the world. Trade in pepper and other spices was a major cause of medieval wars and a driving force behind world exploration. Pepper has been used for centuries in Asia to help treat colds and coughs, muscle aches and pains. Historically it has also been referred to as a wound-healer and aphrodisiac. Well, it can't be that bad for you, then, can it?

When added to food, pepper stimulates the digestive juices, increases the appetite and aids digestion. It does this through thermogenesis, the metabolic process that generates energy at the cellular level in our body. Thermogenesis plays an important role in our body's ability to properly utilize the daily foods and

BELGIUM: FRESHLY SQUEEZED ORANGE JUICE SHOULD BE DRUNK WITHIN A MAXIMUM OF 11 MINUTES AFTER SQUEEZING, OTHERWISE IT HAS NO VITAMINS. FACT OR MYTH?

Our guess is that pinning the post-squeezing interval down to 11 minutes is





would likely leak out of the carrot into the oil and your body could digest this better than from the carrot itself.

Did you know that carrots have been known for about 3,000 years? The Greeks and Romans used them mainly for medical purposes. Greek physicians prescribed carrot root and juice to treat indigestion, skin ulcers, cancer and snake bites. Pliny, a Roman writer, reported that carrots had aphrodisiac properties. Our advice? Sprinkle some oil and pepper on your grated carrots, put on some Barry White music and turn the lights down low...

CANADA: LETTUCE SHOULD NEVER BE CUT WITH A KNIFE, ONLY TORN. OTHERWISE IT TURNS BITTER. FACT OR MYTH?

The mostly likely explanation for this is that when you cut lettuce with a knife, the sharp cut opens up pores in the plant and juices leak out which could very well create a bitter flavor. By tearing the plant, the edges of the leaf are much less regular and could have more chance to fold over each other and seal off these 'pores'. A damaged cut lettuce leaf releases an ascorbic acid oxidase, which destroys vitamin C. Cut edges also discolor quickly. One beneficial aspect of this myth,



hurried cooks, they continue to grow in the fridge. And since we don't normally reheat long enough nor at high enough temperatures, our little microbial friends find the cosy incubation temperatures of the reheating pan an ideal environment for reproduction. In general it's probably a bad idea to reheat any plant material. In fact, if you look carefully at the frozen spinach boxes in your freezer, you'll see a clear warning not to.

Incidentally, the humble parsley plant is actually a potent tonic. A tablespoon of parsley a day provides you with more than half the daily dose required to combat infectious disease. It helps alleviate menstrual pain and also reduces rheumatic crises and eases the pain caused by kidney stones.

GERMANY: CARROTS SHOULD BE GRATED, OTHERWISE THEY HAVE NO VITAMINS. YOU SHOULD ALSO PUT OIL ON THEM. FACT OR MYTH?

Well, we're not so sure about the *no* vitamin part, but grating would certainly introduce a structural change in said carrot, enhancing your body's ability to digest it. A rough grating will break down some of the carrot cell walls, much like having it chewed once for you already. We humans, unlike rabbits, do not digest plant material very well and we probably do not chew a whole carrot very efficiently. Breaking down the cell walls would also release Vitamin A, of which carrots are chock-a-block. Vitamin A is essential for healthy skin, eyes, bones, mucous membranes and hair (or feathers), and helps prevent infections. It is also fat soluble. If you pour oil (olive, not car) on your carrots, the vitamin A

however, at least for the kitchen gadget trade, is the insurgence of expensive plastic lettuce knives with corrugated blades that attempt to mimic the tearing action of your fingers. We think your fingers are a much cheaper alternative.

SPAIN: DRINKING A GLASS OF VINEGAR IS AN EXCELLENT WAY TO PROMOTE WEIGHT LOSS. FACT OR MYTH?

Ohhh, yuck. Judging from our research, this is most likely a largely myth with unpleasant side effects. One source says that vinegar works for weight loss because "the body transforms it into a powerful fat and carbohydrate burner." Another claims that vinegar helps you burn fat and increases metabolism. It is more than likely that the vinegar would kill some of the bacteria in your gut and give you the runs for a few days, leading to weight loss, mostly in the form of water. Our advice for the plumper Spaniard? Cut down on the churros and chocolate instead.

As we found in our research, reliable answers to these types of questions are difficult to come by. Each one requires a quantitative answer that requires years of study. Can current technologies in science (DNA chip analyses of what happens when a starfish meets a brussel sprout) speed things up? Nobody knows yet. But perhaps the answer is much simpler: eating healthily will increase your chances of being healthy. My dad says that actually, all these mothers, including mine (sorry, Mum) are wrong, and that the way our bodies cope with food depends on the simple ratio of n-3 to n-6 polyunsaturated fatty acids in the food we 'eat' from the point of conception onwards – that is, it really depends on what your mother eats*. So next time you are about to reach for the pepper shaker, go right ahead, and remember that it may matter less than you think.

– Sarah Sherwood
with special thanks to Scott Kuersten
photos by Maj Britt Hansen

* see *The Omega Diet: The Lifesaving Nutritional Program Based on the Diet of the Island of Crete* (Artemis P. Simopoulos and Jo Robinson, HarperCollins, 1999)

On Thursday, April 17, 2002, Hervé This, from INRA's Molecular Gastronomy group at the College de France, Paris, will speak about "Science and cooking: recent advances in Molecular Gastronomy." The lecture is part of EMBL's Forum on Science and Society. The talk will take place at 4 pm in EMBL's Operon Theater.

Cooking with Claus

If you happen to pass by the canteen at EMBL's main laboratory in Heidelberg on a Thursday or Friday evening, you might be surprised at what you'll see: a small army of spatula-wielding scientists enveloped in clouds of flour dust, furiously chopping, slicing and dicing, poaching, pickling and pureeing. Their fearless leader, clad in a white smock and red kerchief, looks on, shouting out orders every now and again to orchestrate the offensive.

What would lead researchers-by-day to trade in their lab coats for kitchen aprons, and pipettes for turkey basters? Claus Himburg's cooking club, of course! The club gives EMBL staff the chance to explore their culinary talents in a fully-equipped industrial-sized kitchen. They cook on cooktops the size of lab benches, fry in pans the size of NMR machines and attempt to master a professional assortment of knives, whisks and ladles as if they were ordinary lab tools. The more technically inclined of the bunch have even tried their hand at tackling the industrial-strength automatic whipped cream whipper.

"Doing experiments is very similar to cooking," says Cerstin Franz, a predoc in Iain Mattaj's lab. "It's all about adding the right amount of ingredients at the right time to produce good results. Both require a good measure of concentration, a lot of patience, and a little bit of luck." And, as always, the biggest challenge is reproducibility. The real test is to come up with the same results at the supper table at home.

When asked why he has embarked on this crusade to impart his wisdom gained through years of experience cooking in kitchens across the world, Claus simply replies, "Everybody has to eat, don't they? We might as well make it fun. In the cooking club we try to experiment with interesting and more complicated dishes from different countries that people might not have the resources or know-how to prepare on their own."

Dishes so far have included German spaetzle, salmon in a champagne cream sauce, venison in red wine and shallot sauce, individual mini-breads baked in flower pots, and a homemade chocolate ice cream – prepared in record time with the help of a ready supply of liquid nitrogen.



photo by Maj Britt Hansen

Trained as a chef in his native Freudenstadt just south of Heidelberg, Claus left home at the tender age of 14 to begin his culinary travels, which have taken him to such far-off places as Ireland, Norway, Morocco and Hong Kong. He also spent a year in Spain's Canary Islands where he was the chief chef at a resort hotel, catering to more than 600 people a day – twice a day, for both lunch and dinner. "That was a big challenge. I had never cooked for so many people before," he says. "But it was a lot of fun. After we closed the kitchen, I would get up on stage with the resort staff and participate in the evening's comedy entertainment show." Appropriate it seems, as we all know that Claus' sense of humor is a key ingredient to his success.

But Claus' aspirations for the cooking club don't stop with the cleaning of the dishes after the meal. He plans to gather recipes for vegetarian dishes from around the world from his EMBL protégés. Once the dishes have been given the stamp of approval from the EMBL cooking club, Claus will publish them in an EMBL recipe book. He says the book will be sure to include his now infamous 'awful falafel' recipe (see EMBL&cetera issue 8), complete with explanatory footnotes stressing the importance of baking soda in the ingredients list.

The EMBL Cooking Club meets at 6 pm, one Thursday and Friday a month. Cooking sessions are followed by eating sessions. Members are asked to make a small contribution to meet the cost of ingredients. If you are interested in joining, stop by the canteen and talk to

Claus, or call him at extension 241 or 447.

– Sarah Sherwood

Salmon steaks in Champagne sauce

2 salmon steaks, 200 g each
1 tablespoon butter
200 ml champagne or sparkling white wine
200 ml cream
salt, pepper, lemon juice

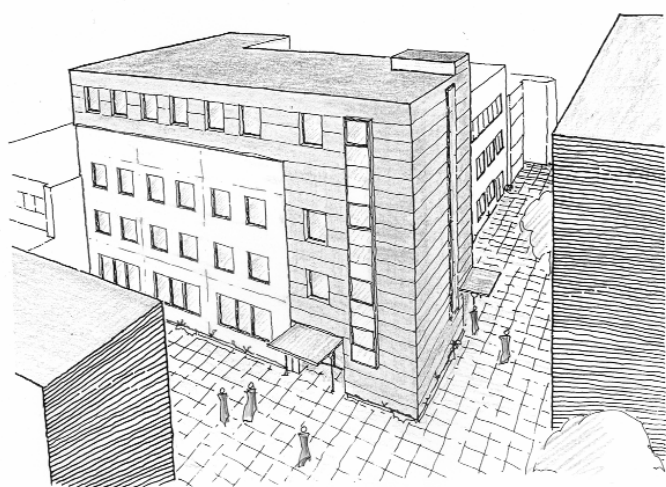
Sprinkle salmon steaks with lemon juice, salt and pepper. Heat butter in frying pan, and fry salmon steaks over medium heat, 5 minutes on either side. Pour champagne into a separate pan, and boil until reduced by half. Add cream, and continue to cook until sauce thickens. Place salmon on a bed of rice or pasta, and pour sauce on top. Buon appetit!

– Claus Himburg

The EMBL Technology Fund

The EMBL Technology Fund is a true early stage venture capital fund and currently has about €11 million under management on behalf of major institutional investors in Europe. The investment focus is life-science in the broadest sense from diagnostics, bioinformatics, target validation and drug design to technology platforms medical devices and therapeutics.

With several years of early stage investment experience we provide more than just money to early stage companies. We are committed to being the best partner an entrepreneur can have. Together with the founders we invest our experience, resources, time, imagination and entrepreneurial energy to create lasting value. To find out more please visit us at www.embl-ventures.com.
– Gabor Lamm



Design for EMBL's Hamburg Outstation. M. Stähle and R. Lebang, architects

A new look for Hamburg

Soon you might not recognize it: the Hamburg Outstation is in the midst of receiving a much-needed facelift. A number of staff members have been moved to "Siberia 1" and "Siberia 2" – container facilities – as the building they've been working in is taken apart and put back together again. Ernst Heinmöller and his building maintenance team in Heidelberg are supervising the construction, which will be completed by October. Look for the full story on the project in future issues of this newsletter.

EMBL's oldest Outstation lies on the campus of DESY – the German Synchrotron Radiation Facility – on the west side of Hamburg. Space has been tight (and the building has looked a little gloomy) for years, not really befitting one of Europe's premier service facilities. Every year, nearly a thousand scientists come to the Outstation to solve protein structures on the beamlines owned and operated by the EMBL unit. The staff currently runs seven different beamlines on the "Doris" ring, a synchrotron built in the 1960s and 70s.

Demand for such services is sure to increase in the near future. Hamburg will participate in a major structural genomics initiative that has been approved by the EU. And the Director General of DESY, Albrecht Wagner, announced last year that DESY's "Petra" ring – a 2.3-kilometer instrument built in the 1980s – will be devoted exclusively to producing synchrotron radiation starting in 2007. This means that the Outstation will soon be sitting at the most powerful synchrotron source in Europe.

– Russ Hodge

news & Events

Arms race talk at the Hamburg Outstation. On May 27, Professor Goetz Neuneck from the University of Hamburg and the German representative to Pugwash (www.pugwash.org) will visit the Hamburg Outstation talk about his 50 years of experience as a physicist monitoring the international arms race. His talk will be followed by a lecture by Professor Kathryn Nixdorff from the Technical University of Darmstadt on monitoring and controlling bioweapons. All interested are welcome to attend. For more information, contact Will Stanley (stanley@embl-hamburg.de).



EMBO announces Restart Fellowship for women in science. This two-year grant, available to women scientists who have taken a career break of at least one year for childcare, is aimed at helping female scientists re-enter the scientific profession. The Restart Fellowship programme is the first international effort of its kind, and is one of several initiatives that EMBO is taking to support women in the life sciences. The first deadline for applications is August 15, 2002. For more information on the Restart Fellowship, a summary booklet of "The glass ceiling for women in the life sciences" meeting held in June 2001, and EMBO's recently published position paper offering practical guidelines for gender parity in science, see www.embo.org/projects/women/index.html. The booklet and position paper are also available from the EMBO office.



Waldpiraten construction underway. On February 22, groundbreaking ceremonies took place at the soon-to-be Waldpiraten Summer Camp for kids with and recovering from cancer, near the Main Laboratory in Heidelberg. EMBL representatives were on hand to view the construction plans, and to find out how EMBL volunteers can continue to help with the *Deutsches Kinderkrebsforschung* project. Look out for fund-raising activities, such as the Heidelberg Triathlon, coming soon!



Red-letter day! The Staff Association's second annual EMBL Summer Party, will be held on Saturday, June 8, just after Lab Day. Staff at the Main Lab in Heidelberg and at the Outstations are invited to come out for the fun and festivities, as are EMBL alumni. We hope to see you all there!

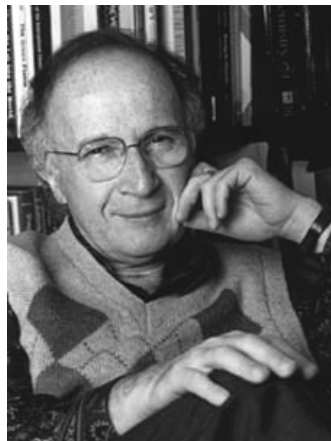


Predoc selection week. Seventy-six hopeful candidates from an application pool of 280 visited the main laboratory from March 4-8 for EMBL's annual predoc selection week. After a welcoming session, candidates were given a tour of the lab, and then began intensive interviews. This year, all candidates underwent a final admission assessment and were examined by four (friendly) panels consisting of representatives from each programme and outstation. The week culminated in the annual Predoc party, organized by current PhD students, the night before the results were announced. In the end 40 positions were offered. The PhD course will begin in Heidelberg on October 15.

science & society

The poetry of a scientist; the science of a poet

Roald Hoffmann is the Frank H. T. Rhodes Professor of Humane Letters at Cornell University in Ithaca, New York, and co-winner of the 1981 Nobel Prize for Chemistry. In addition to his world-reknowned achievements as a theoretical chemist, Professor Hoffman is also an accomplished artist and poet. On the next page he shares some of his work with EMBL&cetera readers.



Today, popular culture regards poetry and chemistry as worlds apart, separated by a chasm of dimetrically opposed views of human nature and the world, with incompatible ultimate aims. If this is truly the case, it is almost inconceivable that a person could maintain his balance with a foot in both worlds. Yet the concept of a "Renaissance man" evokes a person who masters both the arts and the natural sciences – and the species didn't die out when the Renaissance gave way to the Baroque, then the Enlightenment, and the industrial age. There are a few such figures alive today. One of the most prominent is the Nobel Prize-winning Chemist Roald Hoffmann, who enjoys a reputation as a poet and man of letters alongside his highly-distinguished career as a chemist.

"There was a time when they were together, poetry and science – these two luxuriating, contraentropic glories of the human spirit," Hoffmann writes. "They walked hand in hand with Lucretius. And in English, with Alexander Pope, who could write poetry of the frontier science of his day. Pope...had no trouble in putting the poet and the chemist side by side."

What common core is shared by the artist and the natural scientist? "Both (are trying) to understand the beautiful and terrible world around and within us," Hoffmann writes. "The natural philosopher never left poetry. But he (and she) lost his way."

In his poetry and essays, Hoffmann eloquently evokes darkness and light, history and modernity, the potential of human creativity to change for better or worse. Hoffmann has had direct personal experience of both the best and worst of humanity over the last sixty-five years. Born a Polish Jew in 1937, he survived a ghetto and a labor camp; for a year a Ukrainian hid him and his mother in a schoolhouse attic until the region was liberated by the Russians; over the next five years he moved to Krakow, Czechoslovakia, Austria, and Germany before finally settling in the United States in 1949. He attended university during a tremendous, fast-paced period in science. His work in chemistry has focused on the electronic structure of stable and unstable molecules and transition states in reactions.

English was his sixth language, he writes, but he took to it quickly. Now he crafts it deftly, with a strong evocative feel for vocabulary and rhythm. He began writing poetry both on scientific and non-scientific themes in the 1970s and achieved recognition for his work starting in the 1980s.

Who better to speak of the possibilities for a synthesis between the arts and sciences? "Too bad," Hoffmann writes, that the poet and natural philosopher took different paths, for "they could have moseyed into the twenty-first century together."

Is it too late for a synthesis? While chemistry is full of "riches upon riches: reports

of new discoveries, marvelous molecules, unmakeable, unthinkable yesterday," it is reported in a "mind-deadening" way. Hoffmann cites his own chemistry papers as examples of how the culture of scientific publications has removed qualities that used to be inherent in scientific reports. While historically, scientific articles began as personal accounts of observations, the genre underwent "ossification" into its modern, rigid form nearly two centuries ago.

Changing this genre and this culture will take a great deal of courage, Hoffmann says, and it will be a slow process. The raw materials are there. While it has been de-personified, the subject of science is not incompatible with that of poetry; it is full of metaphor. And it is a language "under stress," which is a strong impetus for poetry:

"Words are being made to describe things that seem indescribable in words – equations, chemical structures and so forth. Words do not, cannot mean all that they stand for, yet they are all we have to describe experience. By being a natural language under tension, the language of science is inherently poetic."

Perhaps the best solution at the moment is to keep a foot in both worlds, to pursue a traditional scientific career and permit unusual words and phrases to creep into one's articles, to write poetry about science. "Sometimes," Hoffmann says, "it seems to work out."

– Russ Hodge

On Tuesday, March 19, 2002, Roald Hoffmann will give a talk entitled, "One culture, or the commonalities and differences between the arts and the sciences". The lecture is part of EMBL's distinguished visitor series and the Science and Society programme. The talk will be held at 4 pm in EMBL's Operon Theater.

TIKKUN

In this century science and technology have transformed the world. What we have added, mostly for the best of reasons, is in danger of modifying qualitatively the great cycles of the planet. We see the effects of our intervention in the change in the ozone layer, the pollution and acidity of our waters, in why we wash an apple, in the crumbling statuary, our heritage, dissolving.

The effect of science and technology was surely felt before. But not till this century did the man- and woman-made, the synthetic, the unnatural, truly contend with nature. Is this a time to praise, a time to fear?

The world that men and women entered before there ever was such a thing as chemistry was not a romantic paradise but a brutish, inimical environment in which men and women hardly lived past forty. That natural world was transformed by our social institutions, our art, our science. Certainly not by science alone. We do not kill female children, nor keep slaves, nor let the sick die, all practices some societies, I'm sorry to say some religions, once thought natural. Even though we have such a long way to go, we have changed our nature. Our lives are improved by detergents and synthetic fibers, and by a social web of human, constructed support. Our lives are enriched by Mozart and Bob Marley and the Wailers, bringing to us a world of synthesized, transformed beauty and satisfaction.

Yet we also use our transforming capacity destructively – to annihilate a quarter of the species in this world, to hurt our brothers and sisters. It is we who do this; there is no hiding behind a "they." This seems to be our dark side. We have a problem in finding a balance, with not letting our transforming nature run amok; we seem to have difficulty in cooperating with our own world.

In the tradition I come from, the Jewish tradition, there is a concept that is relevant to this theme of natural/unnatural. It is *tikkun*. The word literally means "repair" – of a shoe, but also of a soul, of the world. The sense is of change by human intervention. So the word's meaning shades over to transformation. *Tikkun olam* – the transformation of the world, by human beings, more than a salvaging, a making of our future consistent with what we are given.

Friends, it is not given to us not to make new things – be they molecules, a sculpture, or a civil rights bill that a president vetoes. We are sentenced by our nature to create. But we do have a choice, to fashion this world in consonance with the best in us, or the worst. One can doubt about whether our transformations are of human value. But there can be no doubt as to what they should be.

CORRAL for Carlos Fuentes

1

To grow animal, smart, the membranes
of eucaryotic cells rim, twice, the
coded library of the nucleus, tangle
then fuse to the gaudy network of sacs
of the endoplasmic reticulum. Pinched off
subcellular organelles empower cells
with the know-how to reject transplants,
wrap a myelin sheath around a neuron, see
red, and then, see yellow. Still better
microscopes make out more partitions.
In the emerging inner texture, freedom,
to change, is built from lipid-tailored
confinements, warm prisons where enzyme
brews gel. Ways in and out are ingenious:
shaped pores, embrasures, and this chemical
escalator called active transport. Fluid,
mosaic, the membranes' holed sequestering works.

2

In 1655 Juana Inés de Asbaje begged
her mother to dress her as a boy, so
that she could study at the University
of Mexico. At the court of the viceroy
she astounded forty professors with her
mathematics and Latin odes. But it was not
a time for learned women in Mexico, so
Juana entered the convent of San Jeronimo;
within, watched two girls spinning a top, and
from what she called her black inclination
for wisdom, had flour sprinkled, so that as
the top danced out its loss of momentum
one might see its spiral trace, and not
a circle. Juana mixed earths, and in a library
of 4000 volumes wrote theology and love
poems. Sor Juana Inés de la Cruz, shutting
herself in the cell where knowing is permitted.

– Roald Hoffmann

names to faces

André à la retraite: the end of an era at Grenoble

The retirement of André Gabriel is both a happy and melancholy occasion: happy because André has arrived at the end of a rich, full professional career, and melancholy because starting in January, we will be missing a colleague – an important piece in the interesting puzzle of our scientific community.

To spend more than a quarter of a century at a prestigious Laboratory like EMBL is a remarkable thing, especially in light of our policy of limited contracts. But what is even more remarkable is that over all these years, André's work has remained at the exceptional quality of his early days with EMBL.

Speaking of these early days: André has often reminded me that he was the first collaborator at the Grenoble Outstation – even before it officially existed. The official contract for the Laboratory was signed by the member states in July 1974, and one of Sir John Kendrew's first priorities was to find good people to support a British scientist "exiled" at the Max Planck Institute in Heidelberg. I am referring to Ken Holmes, who had just demonstrated that synchrotron light had an enormous potential to push structural biology towards a "brilliant" future.

One of André's many contributions related to the detectors that were needed at the synchrotrons. Very early on, at Hamburg, André led the way to developing standards for the electronics used in the detectors, along with our friends Ken Holmes and Gert Rosenbaum. This led to the adoption of standards such as the "NIM chassis" which permits the use of interchangeable commercial electronic modules.

In 1978, Sir John asked Leo DeMayer to become the head of Instrumentation, leading to the arrival of a number of new colleagues at Hamburg: Jules Hendrix, Hans Fürst, Greg Nicolai and a few others. Leo suggested that Heidelberg establish a unit devoted to detection at the Main Laboratory, which led to André's taking up residence at Heidelberg. He and François Dauvergne installed themselves in Emmertsgrund, not far from another "legendary" figure from the early days of EMBL: our friend Jean-Claude Homo, another great specialist in instrumentation (both of electron microscopes and of Peugeot camping cars).

Leo faced the challenging task of tying together the efforts of all of the people he had collected – who were working in different directions. In those early days, each of them thought he had the ultimate solution to the problem of detection. All of this fertile activity was strongly pushed by Hugh Huxley, at Cambridge, accompanied by his faithful companion Wasi Faruqui, who were determined to turn rapid, time-lapsed pictures of frog muscles into a Nobel Prize.

This is how my personal encounters with André began: he repeatedly told me that people on the computational side of detectors were inept, because they couldn't get the pulses produced by his wire detectors into the computers. He added that my boss at the time, Richard Herzog, regarded himself as "Gutenberg" because he was more concerned about the development of word processing tools than scientific computing!

The main problem to be solved at the time was that detectors pro-

vided just two signals in order to determine the position of an "event": the location of a particular spot in a diffraction pattern. One evening, after a long discussion about the technical aspects of detector readouts, André and I went to see Richard. He sent us away with the pleasant comment that if I wanted to help André with the problem, I certainly could – after all, I had plenty of free time on Saturdays and Sundays.

We wouldn't have gotten much farther with the problem except that in an earlier life, both André and I had spent some time at CERN, which permitted us to acquire bits and pieces of some digital-time converters. After a few weeks and a few trips to Hamburg to make some adjustments, we were able to combine these strange components with a slapped-together controller into the first rapid measurement system, capable of surpassing the meager 20 KHz of Professor Stuhmann's IN 90, reaching 300 KHz. The implications were that we would be able to take time-lapse images of small-angle diffractions using synchrotron radiation.



André Gabriel

A little while later, at 2 am, with Michel Koch and Juan Bordas (the coaches of the beamline we called the "monkey cage"), we were able to help Hugh Huxley obtain his diffraction curves. Everyone was very pleased, and André and I hurried down to Heidelberg to spread the good news. Unfortunately the news arrived before we did... and the work rapidly turned into a publication in *Nature*. More unfortunately, our names didn't appear on the paper – I won't repeat what André said on that occasion!

In any case, our efforts had moved us into "first place" in the field of rapid detection, and that was the most important thing. It was a critical boost for the Hamburg Outstation.

Over the years what we called the "KGB" – Koch, Gabriel, and Boulin – continued to make advances in this area and despite a few moments of "cold war" (normal for the KGB) we became inseparable on the beamlines at the HasyLab. André worked hard to bring gas detectors from a "prehistoric" state into the twenty-first century. There's still a lot of work to be done, and we can only hope that others will continue his efforts.

André had a lot of contacts in other laboratories throughout the world and established important contacts and collaborations with them as others learned to use and adapt the detectors. We spent a great deal of time in Hamburg and became intimately familiar with the Autobahn between Hamburg and Heidelberg – also between Heidelberg and Grenoble. I want to apologize to André for having made his detectors travel so often and so fast along these 600 kilometers that separate the Laboratories in Hamburg and Heidelberg. It's true that it wasn't always reasonable to roll along at 180 km per hour with the car full of laboratory materials. Fortunately, the God of the Detectors was with us.

In closing, I hope that André will be able to use his retirement to devote himself to new activities. We thank him for all that he has done in service of the Laboratory; he will continue to be a welcome member of this international community, in a new capacity.

– Christian Boulin

"Ye may 'tak away my life, But you'll never take away my Burns night"



"We look to Scotland for all our ideas of civilisation."

– Voltaire

Hark, but listen closely, little one. Down from the mist covered mountain comes the haunting skirl of the pipes, the sound of laughter and dancing. Like Brigadoon itself, the legendary Scottish highland village reputed to appear for only one day once a century, the annual Burns Supper made a welcome reappearance at the EMBL. The Scots amongst you are a greedy bunch, having two days celebrating all things Scottish. St. Andrew's day on November 30 and January 25, when we brighten up the long, dreich winter by celebrating the birth, life and times of Scotland's well loved poet, Robert Burns. Rabbie, to his friends, was born in Ayrshire in 1759, the humble son of a tenant farmer. He died, a brief 37 years later, on the 21st July 1796, leaving a lasting inspiration of the human condition through his poetry. We gathered together on Friday, February 8 to revere, honour and cherish the immortal Bard but more importantly, to have a roaring good time.

We felt that education, a fine thing close to many a Scots heart, should feature highly in the proceedings. To this end, many excellent single malt whiskies were arrayed for sampling at the begin-

ning of the evening. Palates were treated to the smooth, round flavours of the Speyside malts contrasting with the intense dark smokiness of the whisky from the Islands. Aye, the tang of the sea, the forlorn cry of the curlew wading on a storm-lashed beach, all captured in a glass.

Seats were then required by more than a few of the partakers of the single malts. Just as well then that a glorious feast of *haggis*, *neeps* (mashed turnip) and *tatties* (mashed potato) was to follow. The haggis is an interesting dish, consisting of the stomach of a sheep stuffed with oatmeal, spices and other bits of the sheep, some of which could even be named by a really competent butcher. As befits tradition, the haggis, on a silver platter, was piped in before the assembled guests. Burn's "Address to a Haggis" was then read over the steaming delicacy, culminating in the haggis being ripped asunder by a single slash from a rather large knife, or *Skein Dhu* (Black Blade). The feasting then commenced, with more whisky being consumed, purely in the spirit of further investigation, throughout the meal. We were then treated to an excellent rendition of several well know Scottish tunes by the pipes and drums of the "Heidelberg and District Pipe Band", resplendent in kilts and traditional highland dress.

A *caleidh* (Scottish country dancing) then followed a brief respite while tables were cleared away for the dancing. I understand that further strong drink was partaken by several reprobates during this time. Oh, but then came a sight that made the spirits soar! Partners gliding over the floor in perfect complement to each other, effortlessly expressing, with grace and pride, the rich and noble sentiment of highland music. Well, at least no one required either first aid or last rites and everyone had some very beneficial exercise. Suffice it to say that the person calling the dances couldn't speak properly for several days afterwards and many a sorry soul was seen limping away from their partners. We were also further entertained by Neil Readshaw, an Australian piper of International Standing, who skirled the night away with several complex reels and jigs. The evening then ended with the traditional rendition of "Auld Lang Syne", written, of course, by the great Burns himself. The few remaining bottles of whisky were then rescued from the happy revellers as they made their way home.

Special thanks are due to the lovely folk who organised this Burns night. They are Tom Cord, Claus Himburg and his team, Joe Lewis, Don McPhee, Michelle Meredyth, Doros Panayi, Fiona Panayi, Kim Piggott, Sarah Sherwood, and the Heidelberg and District Pipe Band.

– George Reid

An open invitation to the EMBL community from the Kinderhaus

The EMBL Kinderhaus staff would like to invite all EMBL staff and researchers (scientists, students, directors, and secretaries alike!) to come up to the Kinderhaus and talk to the kids about your work. Choose a theme or idea that you find fascinating, and tell them all about it – anything goes! The only thing we ask is that you enjoy communicating with children at their level, that you enjoy spontaneous situations with them, and that you are willing to improvise.

We want our children to learn more about EMBL, the place where their parents work. We want them to grow up in a world that is

part of their parents' grown-up world. We want to be able to provide them with answers to their questions, and to reward their curiosity and interest.

You might even get a new inspiration for your next scientific project from their questions and ideas.

If you are interested, or have ideas for other exchanges with children, please send an email to puhm@embl-heidelberg.de or call extension 183.

Eva Puhm, Head of EMBL's Kindergarten

people @EMBL

Manolis Pasparakis is a new Group Leader in EMBL's Research Programme on Mouse Biology in Monterotondo. Manolis did his PhD in 1997 at the Hellenic Pasteur Institute in Athens Greece, and his postdoctoral training at the Institute of Genetics, University of Cologne, Germany. At EMBL he will continue his investigations into the NF- κ B signalling pathway in development and in inflammatory and degenerative diseases.



Faculty appointments: Detlev Arendt has been appointed team leader in the Developmental Biology Programme at the Heidelberg Main Laboratory.

awards, honors &cetera

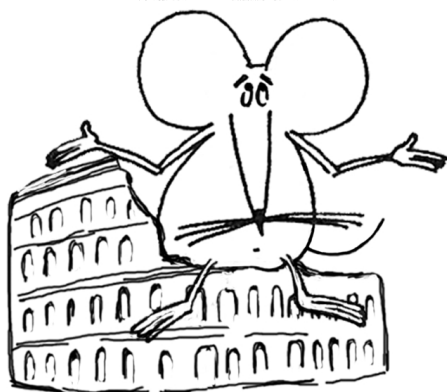
Rafael Carazo Salas, a predoctoral fellow in Eric Karsenti's group, has won Costa Rica's Premio Nacional Clodomiro Picado Twight for 2001. The prize is awarded to young Costa Rican researchers whose work demonstrates scientific excellence and originality. Carazo Salas' PhD thesis focussed on the fundamental role that chromosomes play in the formation of mitotic spindles during cell division. In February Rafael left EMBL for the greener pastures of the London Research Institute, Cancer Research UK, formerly known as the ICRF.

Hey EMBL alumni!

Do you know where your friends and colleagues who used to work at EMBL are now? Send them a note telling them how they can get their own copy of EMBL &cetera. All they have to do is send an email to

info@embl-heidelberg.de

Q. What's the animal house in Monterotondo called?



A. *The mouseoleum*

Thanks to Erich Schechinger for the joke, and to Petra Riedinger for the graphic

Who's new?

In the Biochemical Instrumentation Programme: Jan Selig (Ansorge); in the Cell Biology and Cell Biophysics Programme: Markus Grabenbauer (Nilsson and Pepperkok), Alexandr Jonas (Stelzer), Sofia Rybina (Karsenti); in the Developmental Biology Programme: Uwe Gritzan (Cohen), Sonia Lopez de Quinto (Ephrussi), Brigitte Wild (J. Müller); in the Gene Expression Programme: Wolfram Antonin (Mattaj), Maria Koffa (Mattaj), Christian Thoma (Hentze), at the Monterotondo Programme on Mouse Biology: Rossana De Lorenzi (Pasparakis), Arianna Nenci (Pasparakis), Daniela Ruffell (Nerlov), Ekaterina Salimova (Witke) in the Structural and Computational Biology Programme: Richard Bayliss (Conti), Caroline McGuigan (Gibson), Victor Neduva (Russell); in research-related services: Anja Bathke (Proteomics Core Facility), Mary Burlot (Computer & Networking Group); elsewhere at EMBL: Sharon Hannon (OIPA), Claudia Lindner (OIPA); at EMBO: Ole Hansen, Anne Seller, Jan Taplick

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to the next issue of EMBL &cetera?**

**Just send a message to
info@embl-heidelberg.de.**

**Deadline for submissions is
May 2, 2002**