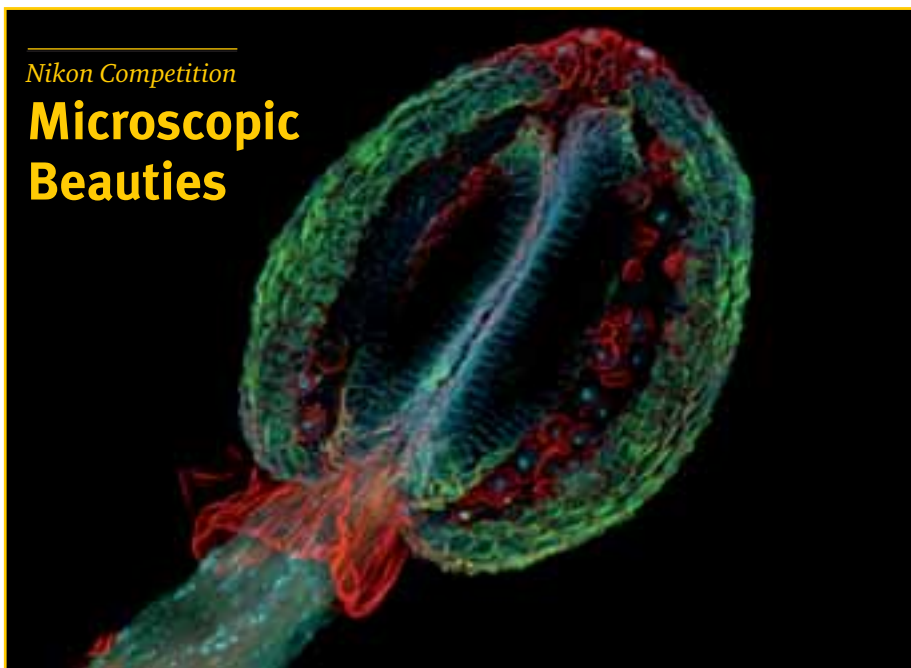


Nikon Competition

Microscopic Beauties



Winning confocal image of an *Arabidopsis thaliana* anther by Heiti Paves from the Tallinn University of Technology at Nikon's Small World Photomicrography Competition 2009

Fake conferences

Sweet-and-Sour

Not so long ago, a new phenomenon of fraud caused a stir in the world of science. Wolfgang Linke from the Ruhr University Bochum, Germany called it to the attention of *Lab Times* and, shortly after, *The Scientist* also reported about it in its NewsBlog, in August. Apparently, leading scientists were cordially invited to a cardiology congress in Shanghai, China. Nothing special

about that but the rather interesting thing here was that two congresses were happening at the same time, in the same place – the “1st Annual International Cardiology Congress 2009 (ICC-2009)” and “BITs 1st Annual International Cardiology Congress (ICC)”. Sounds odd? Well, it is. As it turned out, one of the invitations was a fraud – or to put it into biology terms, a novel form of aggressive mimicry.

By definition, the aggressive mimic shares the same characteristics as a harm-

less species. In this case, an identical website was built and similar invitations were sent out to the unsuspecting prey, which was lured by promises of a high-class meeting in an exotic location. But, in contrast to the (lower) animal kingdom where, after successful capture, the prey is eaten alive, the victims of this deception escaped with their lives but, unfortunately, they didn't get off so cheaply. Many paid the registration fee of US\$600, plane tickets and accommodation and even decided to book an additional tour through the country, as was cunningly offered by the “organisers” for a mere US\$1,200.

It all sounded pretty normal until the participants received an email by a lawyer from BIT Life Sciences, the organising company of the *real* conference, talking about an “unpleasant confusion” of the two congresses and that all the money had been transferred to personal accounts of the mimicking organising committee. Simply said, they had been duped. The mail goes on, “It dooms an international spam (sic) for quick hit and run”. The false conference website has been closed for some time now but the conference is still listed on many conference calendar pages. Investigations by the local Chinese police in Dalian are underway.

On the *genuine* conference website there's only one statement about the incident, “Recently, we have found out that some people in China are using the name of BIT to set-up false conference sites, in order for our participants to identify BIT's conferences, please click here for our forthcoming conferences! BIT will not take any re- ▶▶

BY RAFAEL FLORÉS

PAUL THE POSTDOC



Recently Awarded

► **Rudolf Jaenisch** from the Massachusetts Institute of Technology (MIT) received this year's **Ernst Schering Prize** for his work on genetically modified animals, therapeutic cloning and his insights into stem cell biology. The award comes with a prize money of €50,000.

More stem cell research was honoured by the Albert and Mary Lasker Foundation, USA. This year **John Gurdon** from Cambridge University and **Shinya Yamanaka** from Kyoto University accepted the award for their research on nuclear reprogramming and stem cells. The **Lasker Awards** carry a honorarium of \$250,000 for each category. Other winners include **Brian J. Druker**, **Nicholas B. Lydon** and **Charles L. Sawyers** for their life-saving discoveries in the treatment of leukemia.

► **Jan-Åke Gustafsson**, from Karolinska Institutet and the University of Houston was awarded with the most prestigious medical prize of Scandinavia, the **Fernström Prize**, endowed with SEK 1,000,000. Gustafsson won the award for his research on nuclear receptors and their role in several common diseases and disorders like cancer and depression.

► **Fiona Powrie**, from the University of Oxford has taken home the **EFIS-EJI Ita Askonas Prize**, which recognises female group leaders in immunology in Europe. The award, bestowed with a prize money of €10,000, acknowledges her research on the disturbed immune regulation in inflammatory bowel disease (IBD), which led to the identification of several new targets for the treatment of IBD.

► **Elizabeth Blackburn**, **Carol Greider** and **Jack Szostack**, jointly received the noblest of all awards, the **Nobel Prize** in Physiology or Medicine for their prediction and discovery of telomerase. The Nobel Prize in Chemistry was given to three ribosome researchers, **Venkatraman Ramakrishnan**, **Thomas Steitz** and **Ada Yonath**. More information about the lucky winners can be found on our website www.lab-times.org. -KG-

► responsibility for conferences which are not listed".

According to the latest conference programme, there are still many opportunities to give speeches. Anyone willing to take a chance?

Image manipulation

(Photo)-Shopping Craze

Seeing is believing! This is not always true of scientific papers. However, at a recent seminar organised by the Association of Learned and Professional Society Publishers, ALPSP, in London Virginia Barbour, chief editor of PLoS and council member of the Committee On Publication Ethics, COPE, presented results from a one-year



pilot study concerning image manipulation in scientific articles. What doesn't fit will be made to fit – this seems to be the favourite new motto for one or another “over-ambitious” scientist. And with ever-improving and easy-to-handle picture processing programmes at everyone's disposal, the available options are endless – duplication, deletion, insertion, splicing. Terms that belong rather to a genetics class. But it seems that if it comes to, for example, digitally processing blot or gel pictures, some scientists apparently feel the urge to show off their Photoshop skills to the world.

The study results show that in PLoS Medicine five “problem images” were found in three out of 13 papers checked and in a time frame of only two months PLoS Biology found five “problem images” in three out of 35 papers. A shocking number – not only for journal editors but also for the rest of the

honest, scientific community! In many cases, Barbour and her investigators found that authors of “problem papers” mysteriously lost their original data as well.

Another recent report by the US Office of Research Integrity, ORI, shows that the number of manipulated images has been constantly on the increase, especially over the last two years. In 2009 alone, ORI opened cases against 12 researchers who fabricated data or falsified images and, as a swift form of punishment, the “cheaters” have been published on the office's website. A clear signal then to journal editors that in future a lot more effort has to be put into checking all images submitted for publication.

Detecting possible image fraud, however, will get harder and harder and so journals may soon need to employ so-called digital image forensics who, not unlike the crime scene investigators you see on TV, look for the tiniest irregularities and digital manipulation left-overs to expose the wrongdoers. Let's hope for the sake of science that the situation doesn't go from bad to worse within the next two years. As the ORI report so nicely states “software creates opportunity” but (basic scientific) honesty is still the best policy!

European Research Policy

Viva la Revolución

We're on the verge of a revolution - at least if it's up to the European Research Area Board (ERAB), the advisory board of the European Commission. Just recently, it has published its first annual report entitled “Preparing Europe for a New Renaissance - A Strategic View of the European Research Area”, which aims to get Europe back to the scientific top.

Judging by the location of recent Nobel laureates' host organisations, European research has been “outsmarted” by Americans for the last 40 years. According to a report by the European Research Council (ERC), nowadays, Europe underperforms especially in fast-emerging fields like biotechnology and nanoscience. The recent ERAB report points out exactly where the problems lie. “Our research universities, though often prestigious, are underfunded: in 2002 the EU spent 1.1% of gross domestic product, GDP, on higher education, compared with 2.6% in the US. Mobility of researchers is hampered by outdated tenure, pension and social security systems”. Moreover, quantity isn't quality! Even though ►►

►► European scientists produce about one third of all research papers, the most highly-cited articles come from the US. Thus, if Europe wants to stay competitive then things need to be done, need to be changed. Janez Potočnik, European Commissioner for Science and Research, states, “This is a time of tremendous transition in the way researchers and their supporters undertake their work within an increasingly open culture. This is a time of great opportunity that will involve high risks.”

Things are starting to take shape but there are still too many barriers, especially in the administrative sector. In the last issue, *Lab Times* reported about urgently needed reforms within the main funding body of the European Commission, the ERC. €7.5 billion seem to be at hand but the application and payout procedures are simply too overly-complicated. “Despite good will we had to work under tight constraints, which, in the long run, will endanger the existence



of the ERC,” says Ernst-Ludwig Winnacker, former secretary general of the ERC, in the German newspaper *Die Zeit*.

Now, the ERAB, created in 2008, has come up with a plan on how the “revolution in thought, society and science” could take place by 2030. Six fundamentals were formulated and milestones set, to follow the progress:

- the creation of a united European Research Area, ERA ;
- the solution of our Grand Challenges (climate change, energy supply, ageing societies, etc.);
- the interaction of science and society;
- the collaboration of public and private sectors in open innovation;
- the encouragement of excellence;
- and the promotion of cohesion.

The report concludes, “If we succeed in creating a truly open environment for research and innovation to flourish across the ERA, we will fulfil our obligations to catalyze the new Renaissance and improve our species’ chances of survival. If we do not, if we fragment into competing disciplines, industries, nations and regions, we will miss our historic responsibility to Europe and the world.

Big words, let’s hope that those words are followed up with action!

-KG-

Genes From Junk

Two teams from Germany and Ireland have found evidence for genes that have emerged *de novo* from junk DNA.

Need a new gene? No problem. Just take one of the many genes you already have, copy it (or parts of it) and successively adapt the copy to the new function by carefully employing a couple of mutations. That has been evolution’s ‘easy way’ of generating novel gene functions since the origin of life. Not least, because the emergence of a new gene from non-coding DNA, in contrast, would take a lot more time and effort.

Therefore, those latter cases are considered to have occurred extremely rarely in the evolution of genomes. So rarely that researchers have only recently begun to find likely candidate genes in *Drosophila* and yeast, which might once have emerged from junk DNA.

Enter now mice and humans. In *Current Biology* (vol. 19: 1527-31), Tobias Heinen *et al.* from the Max Planck Institute for Evolutionary Biology in Ploen, Germany, describe the identification of a house mouse gene that has arisen within the past three million years in a large intergenic region on chromosome 10. This region is present but inactive in many other mammals, including humans; only in the genus *Mus* did distinct mutations produce a 5’ regulatory sequence, which has indeed made active transcription possible.

The new gene is apparently not translated into protein and its RNA transcript is produced almost exclusively in postmeiotic cells of the testis. When the authors knocked out the gene in a laboratory mouse strain, reduced sperm motility and testis weight were the results - indicating that the RNA product might play a regulatory role in spermatogenesis.

At the same time, even three genes that have probably evolved in the human line from non-coding DNA are described by David Knowles and Aoife McLysaght of the Smurfit Institute of Genetics at Trinity College Dublin (*Genome Res.* vol. 19: 1752-59). All three are absent from chimp, gorilla, gibbon and macaque, however, only because all

of them, in contrast to the situation in the human genome, share the same disabling sequence difference. This fact, as the authors wrote, “Supports the inference that the ancestral sequence was non-coding over the alternative possibility of parallel gene inactivation in multiple primate lineages.”

The three genes do not contain introns and, according to evidence from expression and proteomics

data, are actively transcribed and translated into proteins. So far, not much is known about the functions of these proteins, except that one of the genes was first described as being upregulated in chronic lymphocytic leukaemia.

Since the authors identified the three genes from a pool of 4,000 genes that had fulfilled their pre-screen criteria, they estimate that “0.075% of human genes may have originated through this mechanism leading to a total expectation of 18 such cases in a genome of 24,000 protein-coding genes”.

Thus, ‘a gene from junk’ indeed seems to be an extremely rare ‘species’.

-RN-

(More research results from European labs on pp. 30-35)

