

Bibliometrics

A Spanish Rival

Thomson Scientific, industry's leader for citation and publication databases, is facing a serious challenge to its decade-long dominance in the provision of quantitative tools for evaluation of scientific journals. The new rival comes from Spain where, in December, the SCImago Group (headed by Félix de Moya Anegón from the University of Granada) launched its open-access database, SCImago Journal & Country Rank (SJR).

Input data is provided by SCImago's contract partner, Scopus, which is an abstract database owned by Elsevier, the giant Amsterdam-based science publisher.

To distinguish itself from Thomson's Journal Impact Factor, SCImago calculates a new quantitative journal parameter called the "SJR indicator". This tool uses a citation window of three years and applies a new algorithm, based on Google's "Page Rank", in which each citation is weighted according to the SJR of the citing publication.

Apart from the SJR indicator, the database (<http://www.scimagojr.com>) provides a whole plethora of bibliometric indicators for journals and research performance at a country level. Furthermore, the ranking can be assessed using different indicators: SJR, citations per document, h-index (an index of scientific productivity and impact), journal titles, documents, quotable documents and total number of citations.

That's the technical description, which we put to the test using two sample inquir-

ies. For the first, we selected all publications from the period 1996-2006 in the subject area "Biochemistry, Genetics and Molecular Biology". Arranging the resulting country indicators according to citations per document, we found Switzerland in first place (22.40), followed by the United States (21.75) and the United Kingdom (18.75).



We then tried journal indicators instead of country indicators. Again, we selected the subject area "Biochemistry, Genetics and Molecular Biology" and chose the year 2006. Dedicated review journals are not included. Here, *Cell* (15.22) achieved the highest rank according to the SJR indicator. This was followed by *Nature Genetics*

(9.08), *Cancer Cell* (8.21), *Molecular Cell* (8.18) and *Genes and Development* (8.09). Alternatively, arranging the data according to citations per document yielded the following top five journals: *Cell* (30.35), *Nature Medicine* (25.07), *Nature Genetics* (23.50), *Cancer Cell* (23.42) and *Cell Metabolism* (15.57).

Obviously, it will require more time to properly assess the SJR. In particular, it is difficult to compare SJR rankings directly with those based on impact factors because each of them is based on different databases.

Nevertheless, many experts have already welcomed the SJR as a serious alternative source for journal evaluation. One of the prime reasons being that Thomson Scientific does not reveal the primary data on which its pay-to-use databases are based, whereas the SCImago Journal & Country Rank is a freely available, open-access tool. —RNe

Women in science

Seriously Underpaid

If you are a woman, working in a lab located somewhere in Europe, you might be severely frustrated that your income is less than that of your male colleagues. Sadly, when it comes to remuneration, males and females are poles apart. Science is no exception. This sobering inequality has been revealed by a new European Commis- ▶▶

BY RAFAEL FLORÉS

PAUL THE POSTDOC



Recently Awarded

► **Howard Cedar** and **Aharon Razin** of the Hebrew University-Hadassah Medical School in Jerusalem were announced to receive the 2008 **Wolf Prize in Medicine**, endowed with \$100,000. According to the jury, "their experiments have been critical for establishing the fundamental role of DNA methylation in the control of gene expression". Cedar and Razin first helped determine the patterns of DNA methylation *in vivo*, and then linked these methylation patterns to the recruitment of histone modifications associated with gene inactivation. Furthermore, they showed how gene specific methylation is erased by an active demethylation process promptly after fertilisation. By the gastrula stage the genome becomes globally methylated and somatic methylation patterns are reestablished by gene specific demethylations during organogenesis.

► **Charles M. Rice**, Head of the Laboratory of Virology and Infectious Disease at Rockefeller University in New York, received the **M.W. Beijerinck Virology Prize**, worth €34,000, from the Royal Netherlands Academy of Arts and Sciences. Together with his team Rice elucidated the organisation, expression and functions of the viral proteins of the Hepatitis C virus. Moreover, they produced the first infectious molecular clone of HCV, with which they demonstrated the genetic sequences involved in a Hepatitis C infection. However, Rice is known primarily as an expert on other RNA viruses: flaviviruses and alphaviruses, which are transmitted to vertebrates by insects.

► **Ada Yonath** of the Structural Biology Department at the Weizmann Institute of Science in Rehovot, Israel, is the "Laureate for Europe" among five women researchers who will receive the 2008 **L'OREAL-UNESCO Award For Women in Science**. She and her team succeeded for the first time in crystallising ribosomal complexes in various phases of protein bio-synthesis and in determining their exact three-dimensional structure and architecture using X-ray crystallography.

► sion study, which has found that equally qualified female scientists in Estonia, the Czech Republic, Israel and Portugal earn 35% less than their male colleagues! Women in Bulgaria, Denmark, Greece, Iceland and Norway fare a bit better, they manage up to 85% of men's income. Although there is a gleam of hope in – surprise, surprise – Malta! On this little island, female scientists actually earn "more" than their male co-workers.

This study also shows that, in general, "good old" Europe is financially rather an unattractive region for scientists. On average, they have to be content with €40,000, a year, whereas they could be making



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€63,000 in the USA, €62,000 in Australia, or at least €45,000 in India. Taking into account cost of living variations in each country, only Austria, The Netherlands, Israel, Switzerland and Luxembourg have an average remuneration comparable to the United States.

These salary differentials arise from both poor pay for women, and the extreme differences in remuneration between the various EC countries. While, on average, researchers in Austria make €60,000, a scientist in Slovakia can count himself lucky with €18,000. Bulgaria is bottom of the league with a mere €9,770.

No wonder so many scientists pack their bags and abandon the old continent.

(Link: http://ec.europa.eu/eracareers/pdf/final_report.pdf)

-KHO

England

Think Big

Plans have been announced for the building of the UK Centre for Medical Research and Innovation (UKCMRI), set to become Europe's largest biomedical research centre. Representing a fusion of several existing research structures, the UKCMRI is expected to house 1500 researchers and technicians upon completion in 2013. Total project costs set at over £500 million are to be met by a consortium of the government's Medical Research Council (MRC), University College London (UCL), and the large medical charities, Cancer Research UK (CRUK) and the Wellcome Trust. The chosen site, covering 1.4 hectares, is next to the new high-speed European rail terminus at St Pancras.

Emphasising the location near London's teaching hospitals, the director of the Wellcome Trust, Mark Walport added, "A key fo-



cus of the centre will be to ensure that new discoveries and technological innovations lead to health benefits. The location of the centre adjacent to a national and international communication hub will be key to the success of the centre. Medical science and science communication must be pursued in a global context."

UKCMRI intends to gather research teams from the MRC's National Institute for Medical Research (NIMR), the Cancer Research UK London Research Institute (CRUKLRI, formerly ICRF) and UCL, working closely with researchers located in surrounding universities and research-intensive hospitals. British Prime Minister, Gordon Brown, also stressed the potential advantages to the UK economy from improved commercial exploitation of clinically-relevant biomedical research.

However, there are few concrete details of the future centre's research composition: CRUKLRI will relocate 550 scientists specialising in cell growth, signal transduction and genome maintenance, the UCL some 150 researchers; the centre will include ►►

► the largest animal research laboratory in Europe and a category 4 containment lab (which has already raised biosafety fears).

The Wellcome Trust has committed £100 million to the project and UCL some £50 million. The remaining £350 million is supposed to come from the MRC and CRUK. However, there are continuing doubts about the MRC's contribution (expected to be over £200 million). Parliament found the MRC guilty of financial mismanagement in 2003, and the recent announcement represents its latest attempt to shut down and relocate NIMR, its largest research institute, from Mill Hill (North London). Previously failed proposals included a move to Cambridge or, together with UCL, to another, 0.4 hectare site, in central London (dropped after scathing parliamentary criticism).

The 19 hectare site at Mill Hill houses 750 scientists and staff. A prime interest in relocation to a much smaller site appears to be of a financial nature. On the one hand, plans are already afoot to develop a commercial science park on the old site, on the other, the relocation is widely seen as an

opportunity to downsize NIMR's current research base. Furthermore, only a week after announcing the £85 million sale of the government-owned St Pancras land (itself dogged by controversy since London Council had earmarked it for social housing) to the UKCMRI consortium, the Treasury was harshly condemned by the Royal Society for "coincidentally" taking £92 million from the MRC's commercial fund (amassed from commercial exploitation of MRC research discoveries). Uncertainty about the fate of existing NIMR research teams, who will relocate to the new centre in 2013 and what will happen to the others, could see many researchers seeking more secure alternatives.

Meanwhile, sorting out the broad direction of the new centre's research and its essential facilities is the responsibility of the scientific planning committee, headed by Paul Nurse (2001 Medical Nobel Prize winner and former director of the CRUKLRI) who is currently President of Rockefeller University in New York.

-JGa-

Correction

"Bad" Is "Good"

In our last issue we mixed up the illustrations of the "good" and the "bad" forms of the prion protein, PrP^c and PrP^{sc} (*LT* 5/2007, p. 32). Thus, the model referred to as "good" pri-



on protein does, in fact, show the conformation of the "bad" one, and vice versa.

In addition, Hilary McMahon, with whose research the article dealt, informed us that according to more recent data, the "good" prion protein, PrP^c, now contains three alpha-helical domains (shown in red in the figure) rather than four as was previously thought – and as was shown in our "bad", and equally outdated, illustration.

We apologise for these oversights.

Beware of Your Kids!

Spanish ecologists discover a novel "upward vertical" route of viral transmission.

What will one have to study first, in order to be able to understand the evolution of infectious disease and host resistance? There are, indeed, several central issues and one of them is undoubtedly the pattern of pathogen transmission. Therefore, it's rather strange that we still lack detailed information on the modes of virus dispersal across hosts at the population level.

A couple of months ago, a group of Spanish avian ecologists, led by Jaime Potti at the Estación Biológica de Doñana-CSIC (Sevilla, Spain), set out to fill part of this gap. In a search for the effects that nest ectoparasitic blowflies (*Protocalliphora azurea*) may have on the biology of a forest passerine migrant species, the European pied flycatcher (*Ficedula hypoleuca*), they screened birds' blood for the prevalence of several virus groups, including circovirus, polyomavirus, reovirus, smallpox and West Nile virus.

So far, two modes of virus dispersal are thought to have been generally prevalent: vertical transmission, from a parent (usually the mother) to the offspring across host generations, and horizontal transmission, such as transmission through contact with infected non-parental individuals or objects in the environment. With their results, however, Potti et al. were able to add another "upward vertical" route of transmission.

The ecologists found a particularly high degree of association between the presence of larval blowflies, common nest ectoparasites of cavity-nesting birds, and polyomaviruses in the nestlings (*PLoS ONE* 2(12): e1276). These DNA viruses are known to produce disease in some bird species.



The following scenario finally emerged from the population study. The larval blowfly vectors almost invariably transmit the polyomaviruses to nestlings, while breeding adults acquire and renew the same viral infections via the disposal of nestling faeces from their offspring. The Spanish researchers further confirmed this "inverse" pattern of viral infection by exchanging clutches and cross-fostering experiments.

The authors, therefore, conclude that their study constitutes "the first known natural example of a primary, rather than sporadic, route of upward transmission of a potential pathogen from offspring to adult individuals". And they finally speculate that this previously undescribed route of viral transmission from ectoparasites to offspring to parent hosts might be a common mechanism of virus dispersal in many taxa that display parental care.

-RNe-

(More research results from European labs on p. 24-29)