Assessing researchers based on membership of journal editorial boards

Research assessment of scientists or scientific work is a complex process. Often people use journal impact factors (IFs), citations, *h*-index, *g*-index, etc. while evaluating the performance of individuals. These have come in for scathing criticism in recent times. The National Health and Medical Research Council (NHMRC), Australia, no longer uses journal IFs in awarding research grants and fellowships[1]. Researchers, funders and editors who met at the annual meeting of the American Society for Cell Biology (ASCB) in December 2012 came up with the San Francisco Declaration on Research Assessment (DORA for short) which states that the journal IFs must not be used as 'a surrogate measure of the quality of individual research articles, to assess an individual scientist's contributions, or in hiring, promotion, or funding decisions'[2]. Stanford professor Richard Zare, appalled at the misuse of citation data and journal IFs in academic circles in countries like China and India, emphasized the critical importance of enlightened peer opinion in matters of granting tenure in research institutions. According to Zare, Stanford and most other American universities do not pay much attention to the number of papers published, IFs of journals in which they are published, *h*-index, etc.[3]. They depend entirely on the opinion of their tenured faculty members and outside experts.

Despite the concerns expressed by ASCB[2] and several others[4–8] on using journal IFs for assessing an individual's work, many funding agencies, assessment boards, R&D laboratories in India and other countries still use them as a surrogate measure of the quality of research by individuals for the selection and promotion of scientists and research fellows. In countries like China, South Korea and Turkey, scientists are paid cash incentives when they publish in high IF journals[9].

Now a new kid on the block has emerged in the evaluation arena, viz. editorial board membership in journals. In the past two decades, there has been a mushrooming of on-line scientific journals – both open access and non-open access. Unfortunately, not all open access journals are genuine; some are started with a view to making a profit through article processing charges, while a few others promote a set of mediocre researchers. Jeffrey Beall[10] calls them predatory journals. Unfortunately, India is home to many predatory journals. Some toll-access journals are also predatory. For example, a publisher based in Delhi, publishes over 150 journals and charges anyone who wants to read or publish in them[11]. Beall has set various criteria for determining predatory open access journals. Recently, Bohannon[12] had exposed the hollowness of many predatory journals through a sting operation.

Many commercial publishing firms, individuals and companies with no background in science or publishing, publish open access journals solely with a view to making money through article processing charges. The administrators of such journals simply ask gullible scientists to become editors of their journals or be on their editorial board. Moreover, some of the journals include names of scientists in their editorial boards without the knowledge of the scientists. Considering it an honour, some scientists also accept such requests from the journals and use this dubious honour to claim promotion or career advancements.

Even though much awareness is being created about predatory journals by the media[13,14], scientists in countries like India keep publishing in such journals and become editors/reviewers of such journals as well. Such unhealthy practice among our scientists should be curbed. Research assessment boards, funding agencies, universities and research councils should not give any recognition to membership of editorial boards of such dubious journals. Indeed, they should give them negative weightage.

Another fraud being perpetrated on the Indian academia is in the matter of claiming credit for publishing papers in journals irrespective of the quality of the journals. While the Council of Scientific and Industrial Research gives credit to papers published in journals indexed in *Science Citation Index*[15], the University Grants Commission is content with papers 'published in reputed/refereed journals' and 'contributions to editorial boards' clearly encouraging researchers to publish and be on the editorial board of any journal[16]. The Medical Council of India[17] stipulates 'two research publications in indexed journal' for promotion of teachers in medical colleges. The Indian Council of Social Science Research[18] also specifies 'papers in professional journals' giving scope to publishing in predatory journals.

Funding agencies will do well to look at the quality of research performed/reported instead of counting the number of papers. Otherwise, predatory journals will have a field day. Researchers also should explore the background of any journal by its publisher, place of publication, peer-review process, editorial board members and the quality of articles published in that journal before sending a paper for publication or accepting to be on its editorial board.

1. National Health and Medical Research Council, Australia, April, 2010; http://www.nhmrc.gov.au/_files_nhmrc/file/grants/peer/impact%20factors%20in%-20peer%20review.pdf (accessed on 7 April 2014).
2. American Society for Cell Biology, The San Francisco Declaration on Research Assessment (DORA), 16 December 2012; http://am.ascb.org/dora/files/SFDeclarationFINAL.pdf (accessed on 7 April 2014).
3. Zare, R. N., *Angew. Chem., Int. Ed. Engl.*, 2012, **51**, 7338–7339; DOI: 10.1002/anie.201201011.
4. Keyser, J., In 'Insurrection', scientists, editors call for abandoning journal impact factors, 16 May 2013; http://news.sciencemag.org/2013/05/insurrection-scientists-editors-call-abandoning-journal-impact-factors#.UfBnRNWpia0.facebook (accessed on 6 April 2014).
5. Pulverer, B., *EMBO J.*, 2013, **32**, 1651–1652; DOI:10.1038/emboj.2013.126.
6. Balaram, P., *Curr. Sci.*, 2013, **104**, 1267–1268.
7. Wouters, P., Bibliometrics of individual researchers. *The Citation Culture*, 29 July 2013; https://citationculture.wordpress.com/2013/07/29/bibliometrics-of-individual-researchers/ (accessed on 6 April 2014).
8. Xue-li, L. *et al.*, *Curr. Sci.*, 2013, **105**, 1480–1484.
9. Stephan, P., *Nature*, 2002, **484**, 29–31.

10. Beall, J., http://scholarlyoa.com/publishers/ (accessed on 19 March 2014).
11. Beall, J., Greedy Indian publisher charges authors and readers, requires copyright transfer, 18 March 2014; http://scholarlyoa.com/2014/03/18/greedy-indian-publisher (accessed on 6 April 2014).
12. Bohannon, J., *Science*, 2013, **342**, 60–65.
13. Prasad, R., *The Hindu*, 26 September 2012; http://www.thehindu.com/sci-tech/technology/internet/on-the-net-a-scam-of-a-most-scholarly-kind/article3939161.ece
14. Shaw, C., *The Guardian*, 4 October 2013; http://www.theguardian.com/higher-education-network/2013/oct/04/open-access-journals-fake-paper
15. Council of Scientific and Industrial Research, New Delhi; http://csirhrdg.res.in/jrfsrfra2.htm (accessed on 7 April 2014).
16. University Grants Commission, New Delhi; http://www.ugc.ac.in/oldpdf/xplanpdf/researchaward.pdf (accessed on 7 April 2014).
17. Medical Council of India, *The Gazette of India – Extraordinary, Part III-Sec 4*, 6 September 2012; http://www.mciindia.org/Rules-and-Regulation/Gazette%20-Notifications%20-%20Amendments/TEQ_06.09.2012.pdf (accessed on 7 April 2014).
18. Indian Council of Social Science Research; http://www.icssr.org/fello_senior.htm (accessed on 7 April 2014).

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Chemical crystallography in India

This is with reference to the article 'Some themes in chemical crystallography pertinent to the Indian contribution' by Desiraju[1]. I was particularly interested in Section 1: 'When did chemical crystallography start in India? Why did it not start earlier?' Having been associated with the field since the late 50s, I wish to make the following observations.

As Desiraju mentions, crystallography in India began in physics departments, primarily because, in my view, chemists while interested in the structure, did not have the necessary mathematical background. In the early days crystal structure analysis was done manually using visually measured X-ray photographic data, with mathematical calculations including Fourier summations and least square refinements in two dimensions using an electrical calculator. I recall the time when chemists from the Organic and Inorganic Chemistry Departments at the Indian Institute of Science (IISc), Bangalore would come over to the Physics Department with their crystals for structure solution. In fact, for the structure determination of echitamine iodide, which was my Ph D problem, the crystals were sent to us from Madras (now Chennai) by the eminent organic chemist, T. R. Govindachari, of Presidency College. The situation, however, changed in the late 70s with the advent of computer-controlled diffractometers, together with software packages for structure determination. With more accurate data and more computing power available, crystallographers could take up, apart from crystal structure analysis of larger molecules, more challenging problems like polymorphism, charge density studies, crystal engineering, etc.

Realizing the importance of this powerful analytical tool, the Inorganic and Physical Chemistry Department at IISc in a far-sighted move, decided to create a faculty position in the Department to train students of chemistry and initiate research in the field. I had the privilege of being selected for this position and joined the Department as a Lecturer in the summer of 1965. Thus, chemical crystallography had its 'formal' beginning in India in that year and not in the mid to late 70s as Desiraju concludes.

A home-made Weissenberg camera was constructed in the then Central Workshop and courses in crystal symmetry, X-ray crystallography and crystal structure analysis were delivered tailored to the needs of chemists. My early research in the 60s and 70s was focused on the coordination chemistry of lanthanide complexes and conformational studies in cyclophosphazenes, both areas being investigated in the Department. Another line of research was the crystallographic aspects of solid state reactions. In the 80s, my research shifted to the synthesis and structural studies of metal interaction with molecules of biological interest. During the intervening period, inorganic chemists trained in X-ray crystallography had joined the faculty and started work in areas of their interest. All this goes to show that chemical crystallography in India had been initiated and practised successfully by inorganic chemists, rather than by physical organic chemists. As a footnote I may add that crystallography was introduced in the Organic Chemistry Department at IISc in 1971.

1. Desiraju, G. R., *J. Indian Inst. Sci.*, 2014, **94**, 1.

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