out of their natural interest rather than a yardstick for their promotion unlike in universities.

Once a university teacher acquires a Ph D degree, many university teachers lapse into routine teaching assignments.

Because of this type of dual role of teaching and research without defined guidelines, university teachers can neglect either teaching or research, or sometimes both. In Indian universities, teachers are promoted based on their research publications, books written, papers presented in seminars/symposia, membership of various academic societies, etc., but much importance has not been given to the teachers' contributions towards teaching.

This type of situation in our universities tempts many teachers to neglect teaching and take up some sort of research mostly uneconomical, unproductive, outdated and repetitive type and venture into the business of publishing substandard research articles. The system normally recognizes quantity like number of Ph D students guided, number of papers published, etc. rather than quality of the research and publications.

Unfortunately, no concrete method has been developed so far to judge the teaching and research aptitude of university teachers. Some academicians argue that both teaching and research cannot be done at the same point of time. However, it is generally thought that education (even from undergraduate level) and research should coexist to complement each other. It is true that most of the breakthroughs have come from university settings abroad, in which teaching and research are intertwined.

It is high time that academicians and researchers should debate at the national level to find solutions to strengthen the quality of teaching and research in Indian universities. If university teachers are allowed to have only research projects that are approved by national level scientific committees and under such projects, only students who have the right aptitude for research are permitted to register for Ph D, it may help in improving the standard of research.

Special emphasis on assessment-oriented teaching and research will impart a new dimension to the role of the teacher. The objective of integral development of personality in the younger generation cannot be achieved without teachers developing their own integral personality. In this context, it is apt to remember the words of Rabindra Nath Tagore: 'The highest education is that which does not merely give us information but makes our life in harmony with all existence'.

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Viviparity in reptiles

There was an error in reporting the findings on the lizard, under the section 'In this issue' written by S. Ganguli[1]. However, the studies on the lizard provide an insight as to how the evolution of viviparity might have evolved among reptiles, in general. Hence, the last statement in the said section should be read as 'evolution of viviparity in reptiles' instead of 'evolution of viviparity in garden lizard'.

1. Ganguli, S., *Curr. Sci.*, 2003, **84**, 612.

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Contract teaching: Is permanence the cause of academic woes?

This is regarding the editorial 'Academic appointments: Contracts and tenure'[1] and letter by Tripathi[2]. The fact that the UGC is contemplating a drastic change in the mode of appointment of teachers in the universities and colleges is an acceptance that there is something seriously wrong with the present system. It is heartening to know that the UGC is planning to do something about it.

How the UGC has come to the conclusion, that making academic appointments on contract basis (otherwise adding an element of impermanence to these appointments) can cure the ills plaguing the system, is not known. Has the UGC undertaken an in-depth analysis of what is wrong with the present system, and come to a definite conclusion that granting permanence to an appointment (after an initial 'probation' period) is the only (or at least the main) reason for the steady decline in the quality of teaching and research in our universities and colleges? Deciding to make the academic appointments contractual, to solve the problem of declining standards of teaching and research would, in other words, mean that, in spite of having a system of selecting the most meritorious candidates for teaching positions, and maintaining an atmosphere for fostering and adequately rewarding excellence, a vast majority of our academics are not performing well. I do not think that is the case.

The problems of higher education system in the country are many and need a detailed study by experts. This sort of 'quick-fix' solutions to the problems is not going to solve the problems. In fact it will only add to the problems and

complicate them manifold. One of the immediate and sure outcomes of such a move will be further alienating the best brains from teaching jobs, and bringing the standards further down.

Secondly, has the UGC formulated an action plan for implementing the new systems? What are the criteria for evaluation? Who will assess the candidates? As the very basis for contemplating a change is the non-performance of the present faculty, can they be entrusted with evaluating those who are appointed on contract basis? As Tripathi has pointed out[2], implementations of the UGC initiatives to improve the system are very poor. NET/SET was introduced at least a decade ago. Strict implementation of a pass in NET/SET for appointment of a candidate as a college/university teacher has happened only recently. Many years ago, some universities introduced an ambitious programme of pre-Ph D course work. This was a good initiative with a view to improving the Ph D training. But most (if not all) universities dropped the course work because there was no proper planning and coordination.

The UGC must definitely do something to stem the rot in higher education. But for that the UGC may have to do a lot of homework and also groundwork.

1. Balaram, P., *Curr. Sci.*, 2003, **84**, 5.
2. Tripathi, Y. B., *Curr. Sci.*, 2003, **84**, 258.

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NEWS

MEETING REPORT

Celebrating the double helix

A 'World Science Festival-2003 and International Dialogue to Celebrate Golden Jubilee of DNA Double Helix Discovery' was held in New Delhi between 12 and 14 February 2003. Since the significant discovery of the double helix structure of deoxyribonucleic acid (DNA) in 1953, biological and medical sciences have made great leaps forward. India has also taken several initiatives and in the post-genomic era holds even further promise to take on several challenges. The first day at the Festival saw a somewhat odd mix of speakers in the theme summit 'What is life' with L. M. Singhvi, New Delhi on the 'The Indic vision of life' and Moulana Wahijuddin Khan also from New Delhi, on 'What is life with reference to Islam', to scientists among others. The Union Minister of Science and Technology, Murli Manohar Joshi felt that experiments and experiences needed to be viewed in totality for a clue towards life in a deeper and broader sense, for a better understanding of solving the riddle at the molecular level and ethical questions pertaining to cloning.

This was followed by technical sessions comprising speakers whom D. Balasubramanian, Hyderabad had aptly described to the delight of the audience as 'pre- and post-DNA children'. One such speaker in the first technical session 'DNA and Gene Structure' of the Festival, from the pre-DNA group was M. Vijayan, Indian Institute of Science, (IISc), Bangalore on 'Structural genomics of microbial pathogens'. This endeavour is a consortium approach involving various groups with biochemical and structural biology background for probing three-dimensional structures of bacteria, viruses and parasites such as *Plasmodium falciparum* (causes malaria) and *Leishmania donovani* (causes Kala-azar). A task set out to achieve is to unravel the structure of single stranded DNA binding protein from *Mycobacterium tuberculosis*. One success has been in deciphering the structure of the *E. coli* enzyme, uracil DNA glycosylase solved in 1998. As part of the TB Genomics programme, the structure of the nucleotide binding site in *M. tuberculosis* and *M. smegmatis* has led to the understanding of lowered ATPase activity due to the P loop expansion in the case of mycobacterial proteins as when compared to *E. coli* RecA protein and also the significant involvement of L_1 and L_2 loops in DNA binding. Vijayan felt that at the heart of design and synthesis of drugs and pharmaceuticals was a due need for the basic understanding of both structure and function of biomolecules using X-ray crystallographic tools, which the structural genomics programme in the country has set out to do.

The themes of various technical sessions held at the National Institute of Immunology, New Delhi criss-crossed on the pattern that biosciences research in India was shaping up to providing a fascinating insight into a variety of research topics. This also lent an idea as to the possible weak links in spheres of research that require careful focus and nurturing, both in terms of funding and training, especially those directly linked to the health of the Indian society. The sessions ranged from Genomics, Genetics and Biology; DNA, Cells and Health; Diversity and Evolution; Bioinformatics and Future of Biology to Genes and Society.

Of recent interest are multistranded DNA helices and their site-specificity that are important in therapeutic applications by acting as repressors in infected cells (K. Muniyappa, Indian Institute of Science, Bangalore). Another interesting concept is the DNA as a 'molecular clock' that uses the ribosomal RNA gene to map a 'Universal Phylogenetic Tree' (Yogesh S. Shouche, National Centre for Cell Science, Pune). This has not only helped in revising taxonomic classifications but also in studying back in time, relationships with now-extinct species using the polymerase chain reaction for solving the puzzle of evolution.

In the areas of plant genomics, genetics and biology reports of work related