

Age of Principal Investigators in EMR schemes of CSIR: How do young scientists fare

Human Resource Development Group (HRDG), CSIR provides funds for extramural research (EMR) schemes in any area of Science and Technology, including engineering and medicine. For this, applications are entertained throughout the year from Universities, Post-Graduate Colleges and other Institutes of Higher Learning including non-CSIR R&D laboratories.

No age limit, upper or lower, has been fixed for the General Research Schemes. There are retired but active scientists above 65 years of age, as well as scientists below 30 years who have received CSIR grants to pursue research under this scheme.

An analysis was done as regards the distribution of age of the Principal Investigators (PIs) as on the date of sanction of their scheme. Depending on the area in which the schemes were sanctioned, the data was then grouped into three major disciplines as under:

- Biological sciences, which included plant, animal and medical sciences.
- Engineering sciences, which included all areas of engineering, chemical and material technology.
- Physical and chemical sciences, which included physics, chemical sciences, mathematical and earth sciences.

HRDG, through a well-established selection mechanism has been supporting research schemes mainly in Indian universities for long. For this purpose, presentation of the data and relevant information in a structured and scientific fashion to the concerned Research Committee were being done, and that helped in selecting the best from among the deserving applicants. This procedure not only gave the PI a fair chance to establishing his track record at an early age, but also fruitfully culminating the research output. Promising meritorious cases are given adequate chance through deferred scheme mechanism to improve and compete.

A total of 902 (out of about 2500) schemes sanctioned in the last seven years (from 1990 to 1997 March) were analysed. Figure 1 shows the distribution of age of PIs in all subjects areas. The

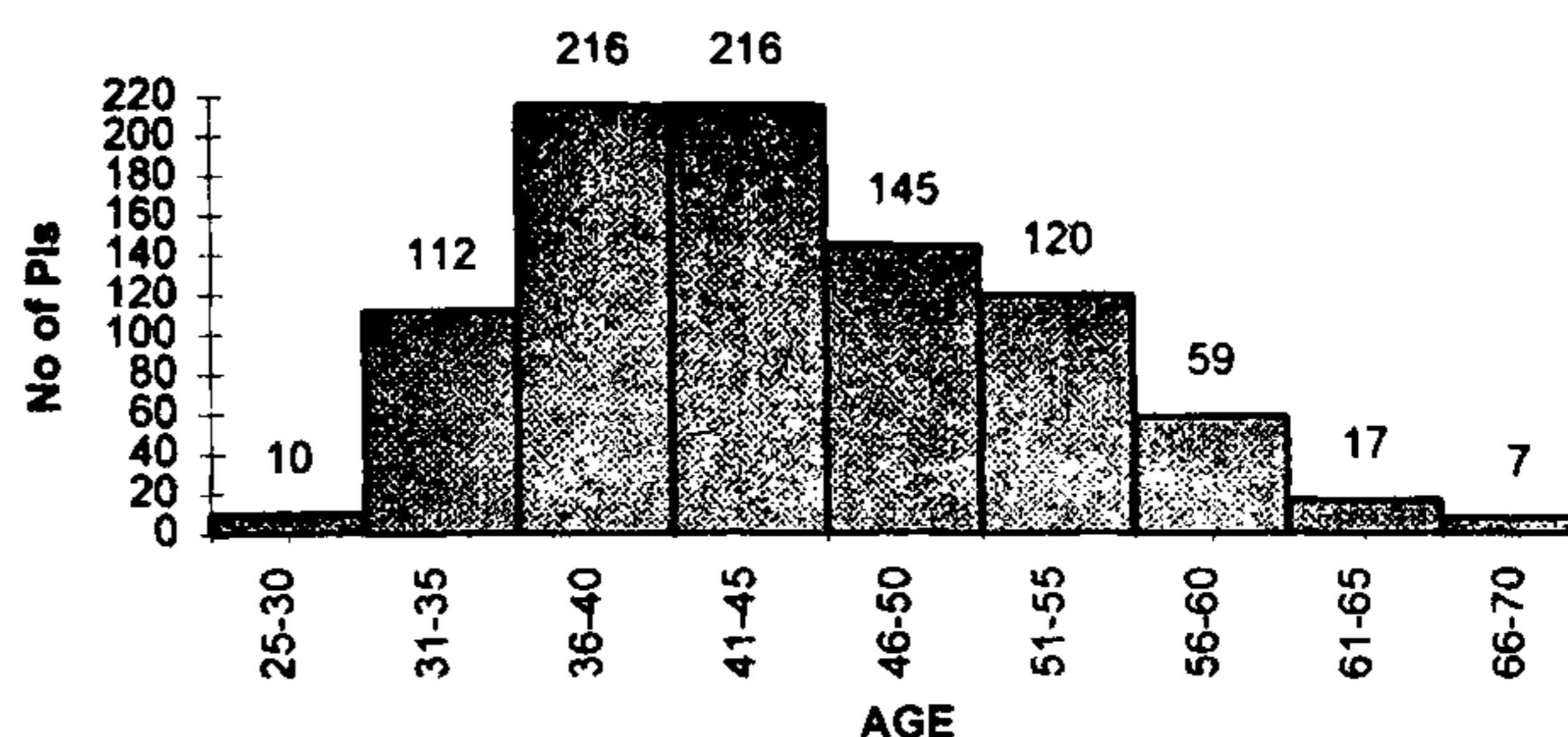


Figure 1. Distribution of age of Principal Investigators (PIs) of 902 EMR schemes (1990-97).

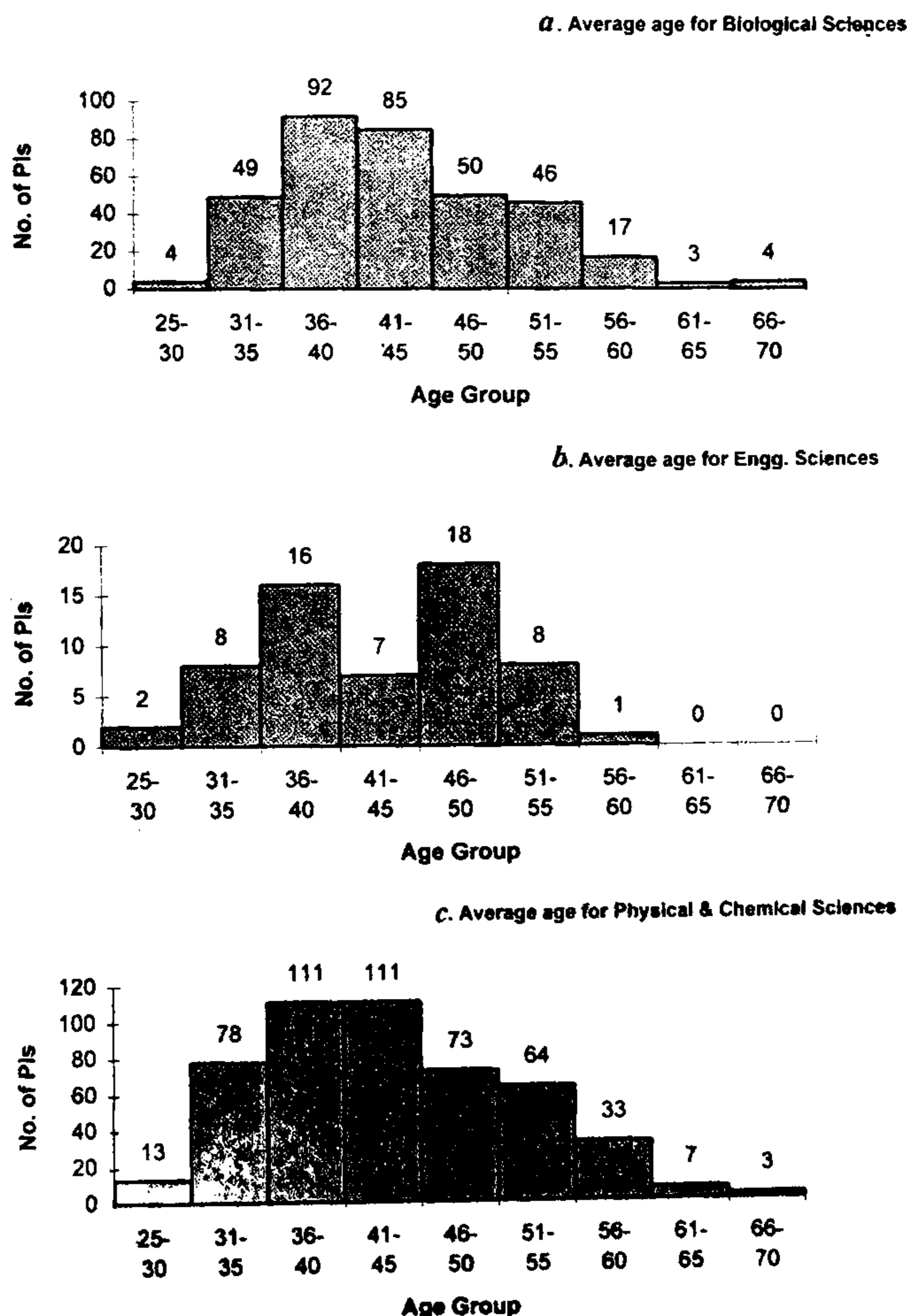


Figure 2 a-c. Distribution of age of Principal Investigators (PIs) in three major areas (1990-97).

concentration is around 36 to 45 years, the peak being at 41 years. Figure 2 a, b, c shows the average age distribution of PIs in biological sciences, engineering sciences and physical and chemical sciences, respectively. Here also the peaks are at around 40 years of age except engineering sciences where the two peaks are identifiable, the prominent one has shifted to 46–50 age group.

In India a fresh Ph D normally gets a permanent job in the University system/ R&D institution after a few years of post-doctoral work either here or abroad and he/she gets it sometime around 30 years of age. The Shanti Swarup Bhatnagar (SSB) Award, the highest coveted award in India for recognizing research contribution, puts the upper age limit as 45 years. The average age of SSB awardees is 42 years. The SSB award is for research contributions made during the last five years preceding the year of prize. Since research work is an essential part of the activities of a faculty member/ scientist in R&D organization, it can be said that a young faculty member gets scientific independence around the age of 40 years and can manage a project independently. They are able to train younger people into R&D work through

Ph D programme at this time. The age distribution concentrating around 40 years is considered on the higher side *vis-à-vis* the policy of supporting basic research in University system. Looking at the average age of SSB awardees, concentration around 35–37 years would have been ideal.

The present mechanism of peer review and screening through expert committee which has a strong scientific base is, in a way responsible for the large number of researchers coming to CSIR for getting a moderately well-funded project to establish themselves in the field of their specialization. It is felt that there is a need to improve the system (to get scientific independence) at university level so as to attract more younger researchers to take up high quality basic research.

In engineering sciences, major peak around 46–50 age group is a misfit in this model (applicable to science subjects). This may be due to several factors like:

- R&D engineers are much in demand for consultancy and other developmental work not exactly fitting into EMR type of scheme.
- Lack of adequate infra-structural faci-

lity to take up R&D work in many of the engineering degree colleges.

- Non availability of research scholars with engineering background, to work in R&D project.
- Lack of tradition to go for research work/paper publication/patent awareness in the institution.

There is an urgent need to take steps to attract younger researchers in the area of engineering sciences. Integration of appropriate academic institutions with CSIR laboratories through collaborative projects has been envisaged in CSIR 2001 vision and strategy.

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RESEARCH ASSOCIATE/PROJECT ASSISTANT POSITIONS

Research Associate (Ph D) and Project Assistant (M Sc) positions in a DBT-sponsored 'Facility on Transgenic Animals (Mouse)' are available at Indian Institute of Science, Bangalore. Candidates with recent Ph Ds or those who have submitted their thesis in the area of Animal Breeding and Nutrition or Embryo Biology or Veterinary Sciences (for Research Associates) and those with M Sc degree in Biological Sciences (for Project Assistants) are encouraged to contact Prof. M. R. S. Rao, Department of Biochemistry, Indian Institute of Science, Bangalore 560 012. Fax: (080) 3341683, e-mail: mrsrao@biochem.iisc.ernet.in. Please apply with a brief CV along with two letters of recommendation.

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