

gramme which will comprise: (a) providing excellent books in OM from class 7 to 12 (or even earlier); (b) having two (or at least one) special classes per week in OM only for good students in mathematics, from these classes, in order to provide appropriate learning material along with guidance in learning and problem-solving on their own; (c) introducing a continuous evaluation all through the year in addition to annual examinations in OM and conducting final examinations at 10th and 12th level, incorporating innovative methods of evaluation.

Existence of mathematics Olympiad activity in India has ensured the availability of a large number of excellent books, advocated in (a). To achieve (b) and (c), all examination boards (e.g. CBSE, which can take a lead first) must introduce papers in OM, at 10th and 12th level, based on special enrichment material. These papers, meant only for those who have interest in learning deeper aspects of mathematics, would test good understanding of mathematics and ability to solve challenging problems. Marks scored in these papers must be recorded in transcripts. Problems set for these examinations must test the competence

in mathematical deductions and not in employing tricks and mere practice. The responsibility of setting these papers and evaluation must be given to a special autonomous cell (headed by an eminent mathematics professor), set up for this purpose, in the examination boards. The cell would choose college and university teachers along with some school teachers for this task.

One may wonder 'why optional paper in mathematics alone and not in other subjects?'. We mention some answers to this: (i) Majority of the students taking OM would go in for a career in disciplines other than mathematics, and their enhanced capability in mathematics would enrich other disciplines. (ii) In contrast with other subjects, those who miss good mathematics till class 8 are not likely to learn good mathematics later on. (iii) Success of bright students in OM programme in many schools would instill confidence and will provide an excellent opportunity to the children of unprivileged members of the society to compete with other students in admissions to national institutions, an opportunity which probably no other existing programme can provide. (iv) USA's example, in rectifying

and revamping mathematics education, after USSR's launching of the *Sputnik*, should not be lost sight of.

Olympiads and Government supported KVPY programme are serious attempts to spot and nurture talents. But there is no arrangement for students to learn various subjects (mathematics included) deeply at an early stage. In developed countries there exists provisions for bright students to learn subjects of their interest at their own pace. OM programme will provide this opportunity (at least in one subject). One great advantage of the OM papers at the 10th and 12th level will be a decrease in the number of examinations (like RMO; JEE and KVPY at least in one subject; and admission tests of many institutions of higher education).

In view of OM schemes, there will be no need to burden every student with too many deeper and difficult concepts in mathematics.

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Disappointment for Indian submissions in innovative global health funding opportunity

The Grand Challenges Explorations (<http://www.grandchallenges.org/Explorations/Pages/Introduction.aspx>) is a creative funding opportunity supported by the Bill and Melinda Gates Foundation (BMGF). Hoping to encourage innovative out-of-the-box thinking, twice every year, multiple grants of US\$ 100,000 are given out, with a possibility of follow-up funding of US\$ 1 million for successful projects. Targeting important problems of the developing world like the need for new diagnostic tools and vaccines for diseases such as malaria and TB, these grants can especially help and encourage young researchers in global health. Grant applications are limited to two pages, and the decision on funding is taken within four months of submission through a rapid review process (<http://www.grandchallenges.org/Explorations/Pages/GrantProcess.aspx>).

The results of the second round of funding were announced on 4 May 2009.

Eighty-one grants were awarded to investigators from 17 countries and five continents. No India-based Principal Investigator received the grant in this round (the first round had only one India-based grantee from Puducherry). Interestingly, quite a few of the grants in round two went to investigators of Indian origin, but working in foreign universities. The lack of any grant from India in the awardees could be due to two reasons: a lack of knowledge about the grant opportunity, or a reflection on the quality of proposals (since it is a global grant competition). One hopes it was more of the former. Recently, two programme officers from BMGF came to India to encourage submission from Indian researchers for the next round¹. They highlighted that of the 7000 applications from 118 countries received in the first two rounds, only 3% came from India.

I hope that more Indian applications will be submitted and selected in the

forthcoming rounds: applications to be submitted by 28 May 2009 for the third round and the fourth round will be announced on 2 September 2009 with applications due by 2 November 2009. Indian scientists should take advantage of this new funding mechanism to engage in path-breaking research to address outstanding health needs in our context.

1. iGovernment Health 2009. Gates targets Indian researchers for health grants; <http://www.igovernment.in/site/Gates-targets-Indian-researchers-for-health-grants/>, accessed on 5 May 2009.

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