

Need for the introduction of undergraduate research in physics

Sushan Konar¹ has advocated the introduction of undergraduate research (UGR) in physics: 'It is now widely believed that research should be an essential and integral part of undergraduate studies. In recent years there has been a conscious effort to bring research opportunities to the physics undergraduates in India.'

The author fails to define undergraduate (UG) and postgraduate (PG) as understood in the Indian university system. In India, B Sc and lower status diploma courses are classified as UG; M Sc and post-M Sc diploma courses as PG. However, in USA the nomenclature is totally different, graduate means Master's and Ph D programme leading to research. The author seems to be working on the assumption that with the introduction of the five-year integrated programme in Indian universities, this distinction between UG and PG will get obliterated soon.

Again, the author based her observations on the data available from the US universities and failed to establish their relevance to data pertaining to Indian universities: 'Recent studies also indicate

that the growth of physics as a field and the retention of students desirous of taking physics as a career is the lowest among all STEM (Science, Technology, Engineering and Mathematics) subjects². It appears that the development of a professional identity is important for student retention and UGR can play a major role in this direction.'

The author has discussed in detail the current scenario for UGR (physics) in Indian universities by taking recourse to curricular and extra-curricular introduction of research component. She defines curricular research: 'A curricular UGR project is a part of research undertaken to fulfil the requirements of the university syllabus where a student is enrolled for her/his UG (Bachelor's/Master's) degree. One type of curricular research that is becoming increasingly popular is the short-term course project, forming a part of a standard course.'

Extra-curricular UGR is also defined: 'In contrast, an extra-curricular research is something a student embarks upon of his/her own volition. The motivation for such an undertaking has a wide range –

from a genuine desire for research, to securing an early admission to a prestigious graduate programme, or perhaps to simply affect an improvement to the bio-data.' It is noteworthy that facilities for both types of UGR (physics) are available in India and its pace is picking up among Indian undergraduates. I shall appreciate if the author undertakes quantitative studies on the effect of UGR on physics research in India, instead of relying on mostly anecdotal inputs as she admits it herself.

1. Konar, S., *Curr. Sci.*, 2016, **111**(12), 1908–1910.
2. Irving, P. W. and Sayre, E. C., *Phys. Rev. Spec. Top. – Phys. Educ. Res.*, 2015, **11**(2), 020120-1– 020120–21.

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NEWS

Not 'fake news': IUPAP statements on the American 'executive order'

The Council of the International Union of Pure and Applied Physics (IUPAP) has issued, in February 2017, two statements concerned with the US Government's executive order on the so-called border security and immigration enforcement 'improvements'. The IUPAP Council has decided to refrain from supporting any conferences to be held in the US, if there are any bans on entry into the country of citizens from any country, beginning October 2017. This decision is in consonance with the IUPAP Policy on Free Circulation of Scientists. The full

statement can be accessed at <http://iupap.org/statement-1-conferences/>

The statement issued by IUPAP notes that 'the Executive Order has negative consequences for physics in the US and around the world, and noting the IUPAP Resolution on the Universality of Science, adopted in 2011, and Statute 5 of the Principle of Universality (freedom and responsibility of Science) of the International Council of Science, the IUPAP Council respectfully requests that the Executive Order be revoked, that no similar bans on the movement of people

based on nationality be implemented, and that the legitimate concerns about the access of terrorists to the US be addressed through more focussed and thus more effective measures.' The 2011 statement can be accessed at <http://iupap.org/news2/statement-2-free-circulation-of-scientists/>

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