

EDITORIAL

The central theme of this editorial is the role of academic research per se. Diverse demands are being made of academic institutions of higher learning practically all around the world. All wish to be world class – a label that is very ill-defined but extensively used term. This is often interpreted to mean that they must excel in teaching, research and in providing service to the academic community at the university, the profession, the society and indeed the whole world. Various criteria have been established in good faith by the various administering and governing as well as financing bodies to ensure that these institutions do their perceived jobs well and become internationally recognized.

I will focus only on what I think is the university's role as far as research is concerned. There is little or no controversy regarding the teaching or educational function of such institutions. The service component, while important, also can be interpreted flexibly and thus lead to minor dissent among peers. Research, on the other hand, is a difficult topic since it also tends to be expensive. Basic research, as commonly defined and understood, does not produce perceptible benefits in the short term. Thus, it may be considered a luxury. Applied research may produce short term economic fallout which may or may not be of enough general interest and archival value. The more affluent institutions, regardless of their geographic location, can afford basic research in science and engineering (some scientists may legitimately label all engineering or technical research as applied.) The primary question remains: what is the purpose of academic (or university) research?

Simplistically, academic institutions should provide a fertile training ground for researchers of the future by fostering creativity and innovation. The short stay of 3-5 years that a typical PhD student gets in residence at a university is barely adequate to prepare him for a research career. Professors are constantly provided with novice researchers whom they must train from ground zero and hopefully make them good enough researchers so that they can be awarded the PhD degree as a stamp of approval. Thus, professors in most parts of the world - there are of course welcome exceptions - are asked to train or educate researchers. Their research output then is a valuable by-product of the training process. If the focus is only on the output of papers, then the researcher will become more of a technician adept at producing repetitive results with little insight, creativity or innovation. The research training aspect of university professor's job must not be underestimated. Thus the current emphasis on producing research papers in journals of so-called high impact factor (not necessarily of high impact) is counter-productive to the main theme of academic research. I believe that the true research career of a PhD starts once he becomes a researcher on his/her own in academe or industry.

Can academic research in most institutions compete successfully against industrial R&D laboratories of large multi-nationals? The short answer to this question is No! Some of the really ground-breaking research of today requires human and financial resources which are way out of line of what academic research granting agencies can afford perhaps all over the world. The latter may be able to devote orders of magnitude

greater resources to a truly epoch-making discovery. What academics can strive and hope to do is provide industry with well trained researchers so that they can actually accomplish the mammoth tasks ahead. If they can do this successfully, I feel they have done their job and they should feel proud of their accomplishments.

To sum, I feel academic research should focus on producing high quality researchers (where research output is a valuable by-product), while industry and government laboratories should utilize this valuable resource to produce R&D that drives the national economic engines competitively. This will be a true win-win situation for both parties. Universities trying to commercialize research are unlikely to get rich producing results that cannot match what major industry partners can do on their own. Also, making conflicting demands on academia can only have demoralizing effect on their performance especially in resource-challenged institutions of today.

I look forward to hearing from readers of this journal their thoughts on the subject of this editorial.

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