

Worthy aspirations for the Nobel Prize

THIS year's Nobel Prize winners have been announced. These prizes are arguably the most prestigious global recognition that can be given to an individual or organisation (for the Peace prize). The five original categories were Physiology and Medicine, Physics, Chemistry, Peace and Literature.

This year's Literature prize was criticised by some because it was given to the songwriter Bob Dylan, who they do not consider as a "writer". The youngest ever winner was for the Peace prize in 2014 to Pakistani education activist Malala Yousafzai, who was then 17. It almost seems that nowadays, anyone can win a Nobel.

I am not demeaning their achievements, but merely illustrating that the door is open to anyone. So when is a Malaysian going to win a Nobel Prize?

This year's Physics winners are expatriate Britons. One of this year's Chemistry winners is also another British expatriate. Duncan Haldane, one of 2016's three Physics laureates, related in an interview how in the 1970s, Britain saw a de-emphasis on fundamental research in favour of "useful" (applied) research — a situation arising perhaps from funding agencies asking the question of what a particular research can be used for and what products can be marketed from it?

To which he added: "...all the big discoveries of really useful things don't really come about because someone sits down and thinks 'I want to discover something useful'. They occur because someone discovers something interesting and it turns out to be tremendously useful."

Are we enabling a Malaysia-based Malaysian to one day win the prize?

Statistically, one must be an European or American to increase the chances of winning. In practice, it is awarded for groundbreaking science or extraordinary human endeavour that has enriched our collective knowledge and life's experience.

What can be considered groundbreaking science?

For starters, I've not heard of a laureate intentionally start out to win a Nobel Prize. The reason is simple — if you're working on something popular and current,



Records by US singer-songwriter **Bob Dylan** lie in a record store in Munich, Germany. Dylan won the **2016 Nobel Prize in Literature**.



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then it's probably not groundbreaking.

While Nobel laureates are generally regarded as highly intellectual, some of their paths towards success had not always been obvious. John Gurdon, a Medicine and Physiology laureate, once did so poorly at school that he was advised against a career in biology as that "would have wasted not only his time, but those who had to teach him". Others, such as 2016's Yoshinori Ohsumi and 2009's Venkatraman Ramakrishnan, mentioned how they had been rejected for jobs because their CVs were not impressive enough.

There are numerous stories of Nobel laureates slogging through work that others did not believe in. After all, if a problem has been around for centuries or millennia, is incrementally chipping away at it as we often do in applied research the way forward? Am I against applied research then? Definitely not. We would probably never have anything useful if it was all left up to fundamental research scientists such as myself. We need applied research. But the foundation for applied research to flourish and develop into products for the consumer market must also be placed first.

To stop the rain, we do not immediately build a roof, but start

with a foundation. Although the immediate solution would be a roof to keep out the rain, much more can now be developed on top of that foundation.

A *New York Times* op-ed (Oct 3) urged the Nobel Prizes to include other fields and applied research. This call misses the point of the Nobel Prizes — they are not just about research that provides a return but about exploring the unknown, and enlightenment that blows away the mists shrouding the edge of humanity's knowledge. Applied research will require fundamental understanding of physics and chemistry.

There are now other awards that reward human ingenuity with even larger financial gains than the Nobel Prize, such as the Breakthrough Prizes. But perhaps such debates further illustrate the prestige of the Nobel Prize.

There have been many analyses and attempts at determining a formula for winning the Nobel Prize. The Nobel Prizes are a celebration and recognition of human ingenuity and perseverance in the acquisition of knowledge.

Perhaps even strategising on how to win one demeans us in some way. What we should do is to continue satisfying our curiosity and celebrate the quest for knowledge.

This is perhaps where the roles of the policy makers as well as government and funding agencies come into play.

We need to invest in research including fundamental research. While applied research is necessary to get products to the market,

fundamental research is needed to gain the knowledge to make those products.

The research ecosystem can provide jobs in the form of postgraduate researchers who will go on to provide expert human capital. Incubating research will provide opportunities for future businesses through innovations in yet to be realised markets and fields.

I have had the privilege of collaborating with Sir Richard Roberts, a Medicine and Physiology laureate. Perhaps after repeatedly being asked regarding the route towards a Nobel Prize, he drafted a humorous "to do" list that was still sound advice.

Number one — do not start a career by intending to win one! Simply focus on doing the best science.

Number two — hope that your experiments failed often.

It certainly looks like I'm well on my way to a Nobel Prize then. The rest of the list will throw me out of the running, so we shall not discuss them! Let's not dwell too much on how and if a Malaysian will ever win a prize.

Allow the winners to inspire aspiring Malaysians to explore and invent a better future for the world. As the Bob Dylan song goes — *the times they are a-changin'*.

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