

The value of pure science

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Scientists with the National Research Council have a history of doing research that results in new products and technology, including work that helped build a billion-dollar canola industry in this country.

So word that the NRC is shifting its focus in favour of more research that is in direct support of industry may not sound like anything particularly new. But the devil is in the details.

In addition to supporting work that has helped industry and technology, the illustrious history of the NRC includes pure science -research done without any specific result in mind. This kind of "curiosity" research may seem like a luxury to outsiders, but it is actually the basis of most discoveries and is crucial to maintaining a strong scientific base and to keeping world-class scientists working in Canada. Without pure science, in other words, there would be no applied science with which to directly support industry.

It is not surprising, therefore, that a shift in favour of more research that directly supports industry and away from such "curiosity" based research has raised eyebrows.

Among those who are uneasy with the shift is John Polanyi, whose voice should be heard when it comes to matters pertaining to science. Polanyi won a Nobel Prize in chemistry in 1986 for his work in chemical kinetics in addition to a number of other awards, including the Gerhard Herzberg Canada Gold Medal for Science and Engineering, named after one of Canada's leading scientists, who worked at the NRC. Polanyi did post-doctoral work at the NRC.

Polanyi warned the NRC against concentrating too much on industrial work at the expense of pure science. "The NRC laboratories have the valuable function of bridging the gap between academe and industry. My fear ... is that the NRC's bridge will get weaker," he told a Citizen reporter.

Ted Hewitt of the University of Western Ontario, on the other hand, welcomes the news, saying pure research should largely be the purview of universities and research done at the NRC in support of strategic industries should complement what is done at universities.

The NRC's plans involve focusing on some so-called "poster-child" projects that officials say are of national importance; they include doubling the productivity of wheat farming, using algae to soak up carbon dioxide from emitters, the development of bio-composite materials, and printable electronics, a method of spraying electronic circuits onto plastic or paper to make smart labels. These sound like some of the kinds of innovative research Canada needs. And one of the benefits of this focus may be to draw attention to the kind of important work the more than 4,000 employees of the NRC (2,300 of the in Ottawa) have long been doing.

But the concerns expressed by Polanyi are important. If, as part of an effort to better support industry, the NRC undermines some of what has made it such an important organization, any gains from this new direction will come at a greater long-term cost.

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