

'Global crisis' of science?

Is science facing its own "Global Crisis"? The community and governments around the world are increasingly looking to science to solve the major challenges facing the modern global society. The expectations on scientists have developed from just doing research and publishing their work in peer-reviewed academic journals to participating in the process to solve major problems such as public health and aging, provision of energy, providing the innovative boost to make our economy prosperous and competitive and to be the engine-house for new industries. The modern scientist is expected to be entrepreneurial, competitive while making every piece of research count. The fall out from this is that scientists are competing for a set funding-envelope which is distributed by competitive processes. The recent UK University of East Anglia's review on the 'leaked emails' has shown that even though there was no misrepresentation of the science, the behaviour of the scientists and the poor transparency in managing their data sets did not reflect well on the broader scientific community.

No wonder after many years of trying, the stereotypical scientist in movies and cartoons is still the villainous type out to take over the world!

So it is not surprising that all these issues have collided with the questioning of 'trust in scientists' due to the very public media and politically driven climate change debate.

However, we have increasing numbers of students enrolling to do science degrees this year in most Australian universities after a sustained effort including the reduction of university fees for science to attract young people into science. We had the biggest science budget ever in Australia in 2009. The US President, Mr Obama, has called for cuts in all aspects of government except in science where he has increased funding because he believes that science and innovation is the pathway to a new and healthy US economy.

And yet, some in our society are losing their trust in scientists and questioning their motivation. While scientists are expected to solve the major problems that beset us, the wider community really does not understand the scientific process of how they do this. The community is struggling with why there is debate and questioning of new ideas and approaches within the scientific literature and scientific conferences while the other debates in the media are considered unscientific. The community is expecting there to be a 'simple truth' which, as scientists, we know is never possible. Science understanding is developed bit by bit as we evolve the way we think about the world. The wider community does not understand the way that science research is validated and undertaken via the peer review process and how it is rigorous and at times painful for the researcher to get their new ideas published and accepted.

All this has meant that in recent time, scientists may have become too competitive and not transparent enough in important areas of public interest. Those in the wider community, who do not necessarily feel comfortable and understand the scientific process, struggle with the subtle differences between an idea first published in a book compared to one first published in a peer-reviewed journal. Whether it is climate change,

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explain the complexity that it is not just do an experiment and the right answer pops out (if only it was this easy). Rather that every research step opens new ideas, new ways of seeing things. That we must question our methods and results and work to get a broad agreement with the interpretation of the data either measured or modelled and evolve our understanding of the world.

So as the Federation of Scientific and Technological Societies (FASTS) turns 25, it is a good time for us to remind the scientific community we represent about the need for transparency of process. How we undertake peer review and give out merit and esteem must not be a result of the various pressures and expectations from our colleagues. We also need to work more closely with the broader community, including industry and the general community member, to make sure that they follow and understand our methods and thinking.

It is really timely that the road map for science communication has been developed in the recently released *Inspiring Australia* report. It is a most welcome shift to coordinate across Australia how science and the community intersect. There is tremendous good will and passion from both the scientists and all the community. We should not be worried by the current debate about science. We should use this passion on all sides to make scientific process understood and its outcomes lead the way to a prosperous Australia that is healthy, wealthy and wise and can lead the world in embracing the solutions and opportunities science offers.