

SYDNEY MORNING HERALD, NATIONAL SCIENCE WEEK ARTICLE

Published 17 August, 2015.

Science at core of human progress

By Ian Chubb

It's national science week, the one week in 52 when we make a national effort to think about science.

When I think about science, I think of knowledge. I think of an ever better understanding of our natural world, and our constructed world, and what knowing more might allow us to do in the future. I think of our need to anticipate that future and plan for a world of super global competition; where smart companies lead, with new industries and sources of wealth and a differently skilled workforce; science at the core of success.

When I think about science, I think of the role it will play as we strive to solve, adapt, mitigate or manage many of the great challenges that face us as humanity.

I think of climate change. And I think of the evidence that relentlessly accumulates that we and our actions are changing our planet. Science provides that evidence and it will present us with options to manage, mitigate or adapt to the changes.

I think about pandemics and epidemics, actual or potential; whether it be influenza, or Middle East Respiratory syndrome (MERS) or any of the others that suddenly spring to prominence like Ebola.

And I am heartened by the recent announcement from the World Health Organisation that scientists building on decades-long research investment were able to produce quickly a candidate vaccine that has performed strongly in early trials.

Wherever we look – be it eradicating hunger and providing clean water, addressing antibiotic resistance, building more liveable cities or sharing global wealth around – science is the difference between hand-wringing and doing something sensible together.

Science is not the only thing in the gap between wanting, and having. However, it is central, so we need to use it well.

Former British prime minister Tony Blair expressed it as well as anyone ever has: "Science is just knowledge. And knowledge can be used by evil people for evil ends. Science . . . allows us to do more, but it doesn't tell us whether doing more is right or wrong. The answer is that with scientific advance, we need greater moral fibre; better judgment; and stronger analysis of how to use knowledge for good not ill."

So education is critical, and not just for those who expect to practise science but for everyone who lives in the modern world. It is critical to the sort of planet we will hand on to the coming generations: from their jobs, to their environment, health, food, transport; to their quality of life and their prosperity.

All of us have to know enough about how science works to support as best we can the people who practise it. And we have to know enough, and care enough, to ask questions and to make wise decisions as a community: local and global. It is not questioning that is a problem for science, it is ignorance.

I note with approving the government is taking steps to improve and extend science-based education in our schools; not with an aspiration that everybody will end up a scientist, but rather in the expectation that higher scientific literacy in our community is an essential means to the future we want to build.

In short, we must educate, investigate, innovate and collaborate.

The cost, some might say, is high, but so too is the cost of doing nothing.

As Carl Sagan, the American astrophysicist, once wrote when he was presenting a photograph of our planet from a space probe just past Neptune: "There is perhaps no better demonstration of the folly of human conceits than this distant image of our tiny world. To me, it underscores our responsibility to deal more kindly with one another, and to preserve and cherish the pale blue dot, the only home we've ever known."

Science will be integral to how we are able to preserve and cherish, while we build for a future that we would be proud to hand on to the coming generations.

Professor Ian Chubb is Australia's Chief Scientist.