

THE ROLE OF SCIENCE STUDIES IN SCIENCE POLICY

by Roger A. Pielke, Jr.



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In recent decades, science has been increasingly called upon to forge closer connections with the broader society. The days of the basic researcher toiling away in a laboratory with little concern about or accountability to external influences seems to be growing more distant every day. The trend toward a more societally-responsive scientific enterprise has been well documented by scholars who study science in society. Concepts describing this trend – such as "Mode 2 science," "use-inspired basic research," and "well-ordered science" – will be quite familiar to anyone well-acquainted with the discipline of "science and technology studies." But this trend is not just something that affects natural scientists. It also affects scholars like myself who study science in society. This leads me to ask: What is the relationship between science studies and science policies? And how should that relationship be shaped?

One reason for the trend toward a more socially-responsive scientific enterprise is the significant contributions by which science can improve people's lives around the world. At a recent forum on science and technology academies in Africa, Lee Yee-Cheong, coordinator of the UN Millennium Project Task Force on Science, Technology, and Innovation, commented to his fellow scientists that, "Merely offering advice is not enough. I appeal to you: Get your hands dirty." Edward K. Kirumira, a member of the executive council of the Uganda National Academy of Sciences, expressed similar thoughts when he said at the same forum, "[Science and technology] is not only about finding the vaccine, for example; it's also finding solutions for community survival and mechanisms for care and support." There is a very real expectation that scientists today must do more than advance knowledge: They must participate in making that knowledge useful to society.

At the same time, there has been a recognition that science may be more supportive of society and better governed when stakeholders are involved in making science policy. Such involvement includes contribution to setting research priorities and also developing guidelines for research that threatens societal values, for instance research on genetically modified organisms or nanotechnology. Lord Winston, former Chairman of the UK House of Lords Select Committee on Science and Technology and current President of the British Association for the Advancement of Science, writes in the preface to a recent Demos pamphlet called "The Public Value of Science": "The scientific community is beginning to realise, but often reluctantly accept, that we scientists need to take greater notice of public concerns, and relate and react to them."

Helga Nowotny and her colleagues have observed that the ongoing transformation of science has been met

with an understandably mixed reception. They write that those with the most to gain have accepted change positively. These include "politicians and civil servants struggling to create better mechanisms to link science with innovation, researchers in professional disciplines such as management struggling to wriggle out from under the condescension of more established, and more 'academic', disciplines and researchers in newer universities, other non-university higher education institutions or outside the academic, and scientific, systems strictly defined." On the other hand they assert that there has been more resistance from those whose interests were already being served quite well by science policies, including "researchers in those established disciplines and institutions who feared that the quality of science would be eroded if these levelling ideas gained political currency and that their own autonomy would be curtailed if more explicit links were established between research and innovation."

This dynamic can be seen in a February 2005 editorial in *Science* by Alan Leshner, Chief Executive Officer of the American Association for the Advancement of Science, who recognizes that science is in fact changing, but also believes that many scientists will not be happy about it. Writing earlier this year, Leshner observes, "historically science and technology have changed society, society now is likely to want to change science and technology, or at least to help shape their course. For many scientists, any such overlay of values on the conduct of science is anathema to our core principles and our historic success."

In this context it is quite easy for us scholars who study science in society to see ourselves as champions of Nowotny's practitioners and interdisciplinarians. But in recent years when I looked at what I actually did on a day-to-day basis, I saw myself writing grants, publishing papers, and generally acting exactly like those established researchers concerned about the quality of their science and autonomy – and thus preserving the status quo. If there was indeed a revolution going on towards a more socially-responsive science, it had yet to exert much influence on the field of science and technology studies.

Other scholars have come to similar conclusions. For example, Helga Nowotny and Michael Guggenheim observe that, unlike academic environmental studies programs that successfully educate environmental professionals, the science studies community "has succeeded merely in establishing its own academic base." This is problematic because the knowledge gained through such studies has much to offer practitioners of science policy.

To be sure, a number of science studies scholars have been exceedingly effective at transitioning their own work in accordance with the broader trend toward societally-responsive science – names like Jasanoff, Sarewitz, and Wynne come to mind. But for the field as a whole, many of the same challenges facing the broader scientific enterprise during this transitional period have yet to fully take root. Undoubtedly there will be increasing pressure, and increasing resistance, to science studies forging a much closer connection to the

practice of science policy. The good news is that we should know exactly what's coming and how to deal with it. We just have to take a look at science studies of other disciplines and apply them to ourselves.

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Links and references:

<http://www.nationalacademies.org/nairobi/index.html>

<http://www.demos.co.uk/catalogue/publicvalueofscience/>

<http://www.sciencemag.org/cgi/content/summary/307/5711/815>

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