[EDITORIAL]

The Challenge of Communication

The coming years are full of challenges for physics and physicists. Researchers are under more and more pressure to provide value for money to governments, and funding models are evolving towards supporting specific technical goals of relevance to society and industry.

Curiosity-driven research into the fundamentals is perceived as increasingly unaffordable. The need to focus on applied research and industrial concerns is understandable to address problems in areas such as telecommunications, climate change, sustainable energy, healthcare, agriculture and so on. Ensuring that there is a critical mass of technical effort in applied research fields is of course important.

Yet it is clear from history that many of the most pervasive technologies that we now benefit from have not arisen from target-driven research at all, but have developed from curiosity-driven directions with no link to their ultimate application. Using an example from my own field of optical physics, laser pioneer Charles Townes in his wonderful book *How the Laser Happened: Adventures of a Scientist* (Oxford, 2002) illustrated this beautifully by asking: "What research planner, wanting a more intense light, would have started by studying molecules with microwaves?" The laser is a clear example of the unpredictability of technology development from fundamental science. Indeed, whilst some of the applications of lasers such as industrial machining or perhaps even surgery might have been expected as a practical use of a bright light source, who would possibly have anticipated the use of lasers as a critical component of audio products?

There are many similar success stories that show how basic research in science has led to dramatic and unexpected benefits to society. As scientists, we recognize these achievements, but we are also motivated in our research by the belief that the creation of new knowledge provides intrinsically valuable insight into the physical world. We need no further convincing.

Yet the recent pressure being placed on fundamental research support suggests that we are clearly not effectively explaining its benefits. So we must try harder to ensure that the importance of physics and its central place in education and research is clearly communicated to policymakers.

But this is not easy. Our training as scientists does not necessarily prepare us for the environment of vigorous debate that is needed to interact in a political context. We often prefer to remain in our familiar research environments rather than spend the necessary days and weeks in committees and on boards.

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Yet it is essential that we leave the comfort of our laboratories and argue effectively for our research. This aspect of communication with decision-makers now forms an essential part of our educational mission.

Pressure on basic research is strongly felt worldwide, and is not just a problem for physics, but for all of science. It is here that EPS can play a central role in coordinating efforts between different national societies, and by acting together with professional societies in different fields.

The problem is of concern for all scientists. Participating in the activities of professional and learned societies on a national and international level is more important than ever as we work together to solve it. ■

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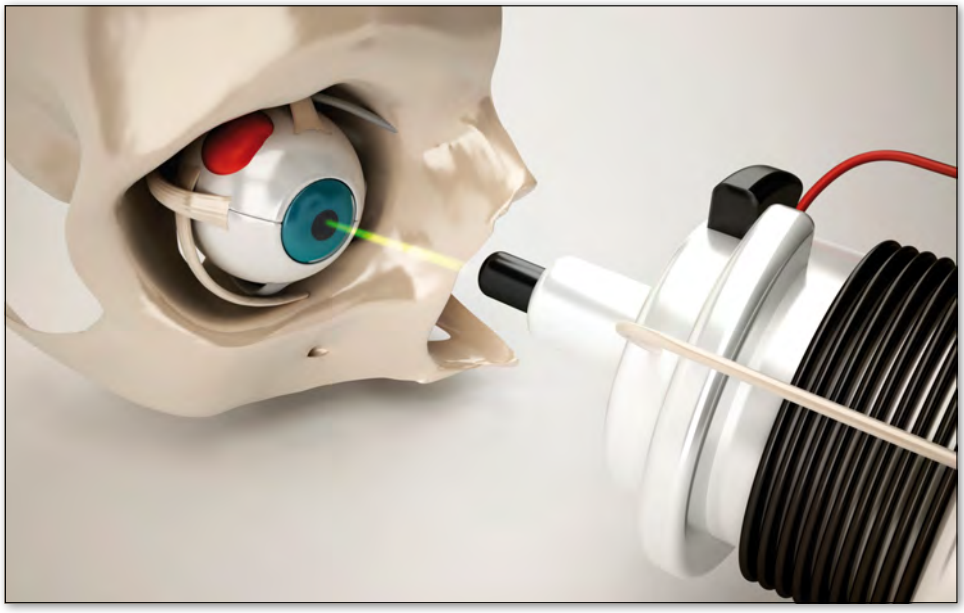
President of the EPS



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