

ISI Presidential Address

Dennis J. Trewin, President of the International Statistical Institute

Distinguished guests, ladies and gentlemen, especially those involved with the organisation of the 54th ISI Session. I am going to use the opportunity of the Presidential address to speak to you for a few minutes about the future of the statistical profession.

Our profession should be in a position of strength. We live in the information age in which strategic analysis and management of information is crucial to a range of government, business and community activities. Statisticians should have a pivotal role. We are the people best able to design information systems to support statistical analysis. We are best able to establish relationships implicit within data sets, including changes over time. With our understanding of variation, we are best able to present summary information so that it informs in a reliable way.

I would like to quote Peter Green in his recent presidential speech to the Royal Statistical Society in which he refers to the lack of engagement of statisticians by many potential clients. I quote:

„In a world in which information has become a global currency and a global product, in which uncertainty is undiminished and its impact much widely appreciated, and in which quantification rules, it is astonishing that a discipline whose centrepiece is the quantification of uncertain information should have this image.,,

The state of our profession should be especially robust. Our services should be in high demand. The number of young people seeking to be statisticians should be increasing rapidly. Yet in many countries, including my own, this is not the case. The ageing profile of the ISI membership reflects what is happening in many countries. We love our profession but we are not encouraging enough people to follow in our footsteps.

Why is this so? What can we do about it? One of the most important legacies we can leave as we move into retirement is a stronger profession so it is important that we address this both internationally and nationally. In saying this, I recognise that many countries have already taken steps to address this problem and we can learn from their experiences.

In the remainder of this short speech, I will outline some of the things I think we should do - here I am thinking of the statistical profession, not just the ISI.

First, we should work together as a profession and regard ourselves as a coherent group. Our particular fields of statistics and interests may differ but that is also true for other professional groups. It is for these reasons I support professional accreditation of statisticians. It focuses on the common elements of our work - the core principles and codes of conduct under which we operate. An accreditation scheme has been established in Australia and a relatively small number of other countries. The Ad Hoc Membership Committee, led by David Moore, also made a very ambitious recommendation for an international accreditation system.

Second, we must use what-ever opportunities exist to promote our work, not just to fellow statisticians but to broader audiences. In my world of official statistics, the media is a great ally. Most of the public find out about official statistics through the media which is why many national statistical offices have public relations sections. I think this same general sentiment should apply to the profession as a whole. We need to persuade the media to take an interest in statistical stories - real life problems where the proper use of statistical science has helped to provide a solution. Cultivating a close relationship with a few select but interested journalists is a good start. Whilst national statistical offices may be able to afford small public relations units, not many employers of statisticians can do so. The national professional associations might be able to assist in this regard. Of course, this means that we also need to provide coaching programs for

people likely to come in contact with the media, remembering that a journalist's primary interest is in a good story.

It may be of interest that the Statistical Society of Australia has recently arranged a media campaign to promote the work of statisticians using interesting anecdotes (such as the Challenger Disaster) to provoke interest. Feedback to date certainly suggests the advertisements have been noticed.

For those of you not familiar with Challenger Disaster anecdote, the managers of the project estimated the chance of a major failure as 1:100,000; engineers estimated it as ranging from 1:100 to 1:300 whereas statisticians, consulted after the event but working with data available before the event, showed the correct estimate was about 1:8.

Promotion of our profession will increase public awareness of statisticians, including to parents, teachers and students. It should help increase interest in statistics as a career, noting the significant influence parents and teachers can have on career choice. This leads me to my third point.

Our profession must work closely with educators to promote statistics. This can happen in several ways.

(i) They could promote statistics as a distinctive and rewarding career choice; it will assist them if we can provide careers material that will show how interesting and rewarding our work can be.

(ii) They can help us convince education authorities that „statistical thinking,, is essential tool - indeed, a life skill - for all students, not just those who might want to undertake more advanced studies in statistics and that appropriate courses should be included in schools curricula.

(iii) We should look at innovative ways such as the United States „Advanced Placement,, program to encourage those who with strong mathematical skills to undertake tertiary studies in statistics.

Generally speaking, mathematics teachers are most likely to be called upon to teach statistics. They are generally not well equipped to do so. As a profession, we need to work with mathematics teachers and help provide the training and resources they need.

The final point that I want to make is that we need to change our attitude to what I call para-statisticians. Too often, we regard them as creeping into our territory - doing the work of real statisticians. Is this appropriate? In the medical professions, there are range of paramedical staff helping doctors to apply their skills to where they can contribute greatest value. Might this also be true of statisticians? Developments in statistical software make it easier for para-statisticians to do effective statistical analysis. Of course, they need a certain level of training. To use an analogy, the ability to use a spreadsheet doesn't make you an accountant. Likewise, the ability to fire up a statistical software package doesn't make you a statistician. But wouldn't it be better to work with the para-statisticians rather than wishing they didn't exist, providing them with sufficient training to know when to call for the help of a professional statistician? This may even lead to increased demand for statisticians, rather than decreased demand. It will certainly help us to apply our skills to where we can obtain greatest value.

Whilst much of the initiative for improving the lot of the statistical profession depends on national initiatives lies with the national associations, the ISI can play a role as a facilitator of debate and discussion. It can also assist in sharing the experiences of various countries - what has worked and not worked. The updating of the Professional Code of Ethics is also relevant.

But no doubt we can do more. It will be one of the more important challenges for the next ISI Council. If you are interested in participating in a debate on these issues, why not contact the ISI Office in the first instance.

To conclude, I would like to wish you a very rewarding enjoyable ISI Session.