

Session B6

Teaching Statistics to Students in the Life Sciences and Medicine

- Organiser:* Geoffrey Berry (Sydney, Australia)
- Invited Speakers:* Geoffrey Berry, P Glasziou and J M Simpson (Sydney, Australia)
T Krishnan (Calcutta, India)
Peter Lachenbruch (Los Angeles, California, USA)
- Abstracts and Short Presentations:* K E Basford and J Priest (Brisbane, Australia)
Stevan Hadživuković (Novi Sad, Yugoslavia)
David G Kleinbaum (Sydney, Australia)
Akihiko Miyake (Kawasoki, Japan)
Harry Shannon, Ruth Milner, David Streiner and Geoffrey Norman (Ontario, Canada)

Introduction

This was the first ICOTS Conference to have a session specifically devoted to medicine and the life sciences. The papers covered both the undergraduate and post-graduate levels.

Biostatistics is an essential part of postgraduate courses in public health, and Lachenbruch described the situation in the United States based both on his personal experiences and on a survey of other Schools of Public Health. The teaching methods include lectures sometimes supplemented by laboratory and discussion sessions. Courses are practically-based and require calculations, but the integration of micro-computers into the courses varied. At the undergraduate level, Berry and his colleagues argued that the methods of decision-making, based on probability, including Bayes' theorem, should be given more emphasis, and that it is unnecessary for medical students to be proficient in analysing data themselves since only a minority will do research. Shannon and colleagues discussed a problem-based teaching method which involves no lectures and no pre-set order of material. Miyake described a teaching strategy involving the application of statistics to research problems, and Kleinbaum discussed the place of short intensive courses, mainly for graduates wishing to upgrade their skills, based on his extensive experience in running such courses.

Krishnan's paper was on the data analysis workshop as a teaching aid. In this method, data sets were the focus of a short course. Several logistical problems in running such a workshop are described, but the approach proved successful in meeting a number of practical teaching objectives. Basford and Priest discussed the importance of teaching biometry in a practical way in order to overcome the lack of motivation of many agricultural students. Hadživuković also spoke on the problems of teaching statistics to students in agriculture and stressed the importance of an independent statistical unit to provide a productive working environment for statistical teachers.

In both medicine and the life sciences, a problem faced by the teachers was to convince the students that the statistical courses were relevant to their major subjects of study, and to find means for the students to learn the practical application without too much emphasis on the mathematical aspects which act as a barrier for many students in these fields. Another recurring theme, as in other sessions of the Conference, was the extent to which microcomputers should be integrated into courses; not surprisingly, in view of the rapid advances in hardware and software in recent years, this is an area where practice is in transition.