For many years the German Region of the Biometric Society and many of its members have been very active developing and implementing novel statistical methods. In addition, there is an ever increasing need for continued education and life-long learning also for the more experienced researchers. At the annual meeting of the society results from the methodological work are regularly presented. To further strengthen the educational part in our society the board of the society has decided to start a series called Education for Statistics in Practice which will be integrated into the annual meetings. Within half a day an international expert will present about a topic that is relevant for practical statistical analyses. State of the art statistical techniques and software will be discussed; issues that arise when using these in practice will be addressed. Extended abstracts will outline the key issues and provide references. The session aims at all researchers who are interested in the application of sophisticated statistical techniques to real data. As we are aiming to reach a large audience we decided to integrate this series into the main program of our annual meetings.

In many areas of science empirical data are analyzed with the aim to derive a model which helps to assess the association between two or more variables. Often, model building techniques are applied, which constitute areas of active research with applications in many disciplines such as medicine, biology and economy. Statistical models are, of course, always a simplification of real life processes. To improve these models, researchers develop new and more complicated approaches. Obviously, expert knowledge is required to apply these models; the importance and implications of underlying assumptions have to be understood and statistical software has to be available. Furthermore, the respective models may need adaptation to critical issues of real data, such as measurement error or missing values. Certainly, it is not good statistical practice to ignore these issues and conduct statistical analyses as if these problems would not exist.

In the last decades, statistical methodology, such as statistical model building and the assessment of such models have seen substantial enhancements. The improvement of computer facilities can be seen as the cornerstone for this development. Nowadays it is possible to assess properties and compare complex model building strategies by simulation studies. Resampling methods such as the bootstrap and Bayesian methods by using MCMC allow investigations which were impossible a decade ago. In some fields machine learning approaches are interesting alternatives to more traditional approaches. A wealth of new statistical software packages, often freely available through the internet, allow a rapid implementation and verification of new statistical ideas. However, many sensible improvements are ignored in practical statistical analyses. The overwhelming concern with theoretical aspects in the literature without guidance about the practical consequences may discourage the researcher from utilizing more sophisticated and possibly more appropriate methods in applications. To improve this situation at least two different tasks are important.

First, experts in specific methodological areas have to work towards developing guidance for specific issues in statistical model-building. Obviously, that has to be done in international cooperation.

Second, as a result of the expansion in statistical methodology and software, there is an ever increasing need for continued education and life-long learning also for the more experienced statisticians. As statistical approaches play a key role in many research areas with a large variety of issues, it becomes obvious that the statistical toolkits have to be diverse. Obviously, no individual person can follow the progress in all different fields. For applied researchers analyzing their own data it can be difficult to follow the progress in statistical methodology even in their main application area. Reasons for that are diverse, but consequences are that analyses might be deficient. As in many other areas it is important that the knowledge gained through research on statistical methodology is transferred to the broader community of researchers analyzing real data. Many of them would be most grateful for an overview on the current state of the art and for guidance developed by experts.