

Preface

The PHYSTAT05 Conference was held in Oxford on September 12th to 15th, 2005. Its theme was “Statistical Problems in Particle Physics, Astrophysics and Cosmology.” It was the fifth meeting in a sequence that started with the Confidence Limits Workshops held at CERN and Fermilab in 2000, followed by Conferences in 2002 at the Institute for Particle Physics Phenomenology in Durham, UK, and in 2003 at SLAC. While the first 3 meetings had been attended largely by Particle Physicists, at SLAC and at Oxford there was also involvement of Astrophysicists and Cosmologists. The SLAC and Oxford meetings really benefited from a strong presence of statisticians. They enhanced the usefulness of the Conferences in many ways: they were involved in the planning of the meeting, gave invited and contributed talks, and were simply available to discuss statistical issues with Physicists either during or in the breaks between the sessions.

We were delighted to have the Keynote Address given by Sir David Cox. Other invited talks were divided almost equally between Statisticians and Physicists, and there were parallel sessions for the contributed talks. There was also time for a poster session. A Panel Session was devoted to discussion of questions submitted in advance by PHYSTAT05 participants, and the meeting ended with summary talks given by a Statistician, an Astrophysicist and a Particle Physicist. The transparencies of most of these talks are available at the Conference web-site: <http://www.physics.ox.ac.uk/phystat05> .

The Conference would not have been possible without the considerable help and effort of many people. Some of these are acknowledged in the Conference after-Dinner talk, extracts of which appear below. We would also like to thank Beverly Roger: the fact that the Panel Discussion appears in these Proceedings is due to her amazing ability to interpret and give meaning to the audio recording of that session.

We hope that these Proceedings will provide a useful record of most of the talks at the Conference. Thanks are due to members of the international Scientific Committee who reviewed the articles appearing here. In several cases this involved very active participation in the production of the final text.

Final thanks go to all the participants in PHYSTAT05 for keeping the speakers and Panel members on their toes, and helping to make it such a productive and interactive meeting.

Louis Lyons and Müge Karagöz Ünel

Part of talk by Louis Lyons at the Conference Dinner in the Jesus College Dining Hall

First I would like to welcome you all to Jesus. The College was founded by Queen Elizabeth I in 1571, just a few years before the publication of his first paper by our keynote speaker, Sir David Cox.

The Hall is adorned by the portraits of Founders, Benefactors and famous old members. The actual work of founding the College was performed by Hugh Price, whose small portrait is below the very large one of Elizabeth. The Queen however insisted on being ‘the first author’ on the publication of the foundation document of the College. Her portrait is by Nicholas Hilyard, who was a famous miniature painter. This was his largest miniature portrait.

A famous old member depicted here is Sir Harold Wilson. He was well-known in being a predecessor of Sir David as President of the Royal Statistical Society. He also found time to be Prime Minister.

I feel that on an occasion like this it is appropriate to quote from “The Good Book”. For those of you with a different background or education, I should explain that by “The Good Book” I of course mean the one that I wrote on “Statistics for Particle and Nuclear Physicists”. On the inside cover, there is a quote

overheard at an international conference: “This experiment was inconclusive so we had to use statistics.” I didn’t hear anyone say this at PHYSTAT05, but we did have some very enlightening talks.

So I really want to thank all our invited speakers, who put so much effort into their talks. The success or otherwise of the Conference is largely due to them. Especial thanks go to Nancy Reid, Andrew Jaffe and Gary Feldman who are undertaking the task of summarising the Conference in the concluding talks tomorrow. We are also very grateful to the Statisticians who devoted time, effort and patience to explain statistical issues to physicists, both in their talks and in the numerous discussions that took place between the sessions.

I would also like to thank the speakers of the contributed talks and those who produced posters. We attracted so many presentations that it was necessary to have parallel sessions. I think we were all sorry that we could not be in more than one place at a time. Thanks are due in advance to all speakers who will send in their contributions for the Proceedings by the deadline. The Chairpersons of all the sessions did an admirable job in keeping speakers and discussions within the time constraints imposed by a very tight programme.

The International Committee (whose members are listed at the end of these Proceedings) was very helpful in the planning of this meeting. I feel very fortunate to have had access to this source of advice. An enormous amount of work was undertaken by the local Committee of Andy Carslaw, John Cobb, Sue Geddes and Pete Gronbech. Especial thanks go to Sue. Apart from taking on the bulk of the organisation, she also dealt with the numerous requests from the Conference participants. I think she had an average of about i^{-i} e-mails per person. She coped with all this with great efficiency and good humour. Many thanks Sue!

I would also like to mention Emily Down who undertook the work of arranging that the talks were ready for presentation at all the sessions. With a tight time schedule it was important that this was efficiently done, and Emily certainly did that.

The Conference would not have been possible without the financial support of PPARC, the Institute of Physics, the Royal Statistical Society, the Oxford Statistics Department and the Astor Fund – we appreciate their help. Oxford Particle Physics provided great logistic support. Thanks are especially due to Professors Brian Foster and Susan Cooper, who were very encouraging and supportive of the idea of having this Conference here in Oxford. Brian was also responsible for arranging for the musicians for the excellent Concert in the Holywell Music Room.

I am deeply grateful to my wife Elaine for her ideas of the visit to Bletchley Park and of having a concert in the Holywell Music Room, and even more so for putting up with me during the period when I was arranging the Conference. I promise her not to arrange another Conference, at least in the period until I retire.

Finally I thank all of you for attending the Conference and contributing to its success. I hope you are finding it stimulating and productive.