

Symposium in Honour of Leslie Fox and the Sixth Leslie Fox Prize Competition

I. S. DUFF, C.Math., FIMA

Atlas Centre, Rutherford Appleton Laboratory, Didcot, Oxon



THE Sixth Leslie Fox Prize Competition was the first to be held since Leslie's death and was combined with a Symposium in his honour. Both were held in the Nuclear Physics Lecture Theatre in Oxford, the Prize meeting on Thursday June 24th, 1993 with the Symposium starting that evening and continuing on the Friday.

The attendance on both days of around 80 was very good given the fact that many British Universities were still involved with examiners' meetings and other end-of-session delights. Even more gratifying was the number of participants from overseas, several of whom were visitors to Oxford when Leslie was there.

The audience was treated to two excellent days of numerical analysis, the first in the main serious, the second with many reminiscences mixed into some very entertaining and thought provoking presentations. Speakers, chairmen, and attendees all combined to make a very fitting tribute to Leslie Fox.

The Adjudicating Committee for the Fox Prize consisted of Nancy Nichols (Chairman from University of Reading), Charlie Elliott (University of Sussex) and Christopher Baker (University of Manchester). They had the difficult task, first of selecting finalists from nineteen very high quality entrants, then the even more unenviable task of choosing prizewinners from the finalists. The finalists and their subjects are given below and, since I do not feel I could do justice to their excellent papers and presentations by summarising them here, I leave it to readers to enquire further directly with the authors. The cast (in order of appearance) was:

D. J. Higham (University of Dundee) "The Dynamics of Variable Step-size Runge-Kutta Algorithms";

Z. Jia (University of Bielefeld) "Generalized Block Lanczos Methods for Large Unsymmetric Eigenproblems";

R. Mathias (University of Minnesota), "The Stability of Parallel Prefix Matrix Multiplication with Applications to Tridiagonal Matrices";

A. Edelman (University of California, Berkeley) "Eigenvalue Roulette and Random Test Matrices";

P. Lin (University of Oxford) "Characteristic Galerkin Schemes for Scalar Conservation Laws in Two Space Dimensions";

Y. Li (Cornell University) "On the Convergence of Reflective Newton Methods for Large-scale Nonlinear Minimization Subject to Bounds".

The standard was so high that the Committee decided to award all finalists a prize with a First Prize being awarded to Yuying Li from Cornell University and Second Prizes to Alan Edelman, Des Higham, Zhongxiao Jia, Peixiong Lin, and Roy Mathias. Clemency Fox, who attended all the sessions of the meeting, presented the prizes which included book donations from IMA, OUP, and Chapman and Hall in addition to a monetary prize.



Clemency Fox presenting First Prize to Yuying Li



(l. to r.) R. Mathias, D. Higham, Y. Li, Mrs. C. Fox, P. Lin, A. Edelman and Z. Jia

A feature of the day was that the chairmen were invited to reminisce prior to fulfilling their primary rôle. To this end Nancy Nichols, myself, and John Reid all made comments about the origins and history of the Fox Prize Competition and their memories of Oxford in the golden days of Leslie. The art of chairmanship was even more displayed in the evening when Mike Powell, on the Thursday evening session of the Symposium, gave an entertaining description of sporting exchanges between the Cambridge and Oxford golf teams using the actual trophy as a visual aid. The speaker for the session was Gene Golub which was doubly appropriate because not only was he a friend and visitor to Oxford but he was also a prime instigator in the foundation of the Leslie Fox Prize. Gene spoke on modified eigenvalue problems with reference to a very early paper by Leslie on the computation of latent roots, prompting a lively debate on

nomenclature. The tone of the whole meeting was well set by the excellent atmosphere established by Mike and Gene in this first session of the Symposium.

The setting of the Fellows Garden at Balliol College for the aperitifs was a marvellous prelude to a memorable dinner at Balliol which I am sure would have been greatly enjoyed by Leslie himself. Indeed several speakers remarked that Leslie would have very much enjoyed the proceedings although he might have found the alternative fixture of the visiting Australian cricket team at the Parks a little tempting. The dinner, made even more memorable by the quality of the wine sponsored by NAG Ltd., was a time for more reminiscing led by entertaining and informative speeches by Bill Morton who introduced Brian Ford who then, after some remarks of his own, introduced Charles (E. T.) Goodwin, the after dinner speaker. Charles spoke mainly about Leslie's pre-Oxford days at the National Physical Laboratory. The banter and comradeship continued well into the evening in the Senior Common Room and, after what for some seemed a rather short night, at breakfast on the Friday morning.

Suitably refreshed, we reconvened in the Nuclear Physics Lecture Theatre for a wide range of contributions from speakers, chairmen, and floor. The mathematical range was testimony to the great breadth and influence that Leslie brought to Numerical Analysis and the range in mode of presentation reflected the admiration and esteem in which all participants held him. After some opening remarks by Bill Morton, Geoff Hayes took the chair. Geoff shares a distinction with the first speaker, Donald Kershaw, of having been to the same school as Leslie in Yorkshire. Donald spoke about some work of Leslie Fox with Linda Hayes at Oxford related to work of Wronski that has generated recent interest in the numerical linear algebra community. Frank Olver then gave a highly entertaining and informative talk on "Supersymptotics". The second morning session was chaired by Sean McKee, the first UCINA coordinator and golfing colleague of Leslie, and included talks by Alan Taylor, CBE, on differential equations arising from the Study Groups with Industry and by an ex-Oxford student Nick Gould on linear algebra issues in optimisation.

After a most pleasant lunch in Balliol, the Symposium recommenced with a talk by Andrew Stuart, another ex-Oxford student and possibly the last to be directly influenced by Leslie. He talked about "Analysis and Computations for a Model of Phase Transitions." The chairman of the session was Charles Clenshaw who was a colleague of Leslie's at the National Physical Laboratory. Hans Stetter, who had visited Oxford several times as a guest of Leslie gave the second talk on "Defect Correction from Gauss to the Present Day" and was followed by Leslie's Oxford colleague and co-author David Mayers on the subject of "Relaxation"... an appropriate title for the last talk and a topic on which Leslie had been involved since his early work with Southwell. The meeting was brought to a close with characteristically witty remarks by John Mason who irreverently reviewed the talks at the Symposium as if they were contenders for a senior citizen's Leslie Fox Prize.

At the end of the meeting, presentations were made to the ladies from the Oxford Computing Laboratory who had worked hard to ensure the smooth running of both the meeting and the arrangement with Balliol College. At the final afternoon tea, a very lively conversation amongst all participants, friends of Leslie and thence friends together, concluded a most successful and enjoyable event and one which did much to uphold the memory of our recently departed dear friend and colleague.

Although registration costs were kept low, the generosity of several sponsors (Chapman and Hall, ICL, IMA, NAG Ltd., Nuclear Electric, and OUP) enabled a healthy surplus to be donated to the Leslie Fox Prize Fund which will be used to support further Leslie Fox Prize Competitions.

A memorial booklet is planned which will include, in addition to abstracts of the presentations, some biographical notes and a bibliography, reports on the Memorial Service held at Balliol in January, a list of students from Oxford during Leslie's reign, and a history of the Leslie Fox Prize. This booklet will be sent to all participants at the meeting but extra copies will be available from the Oxford University Computing Laboratory.

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