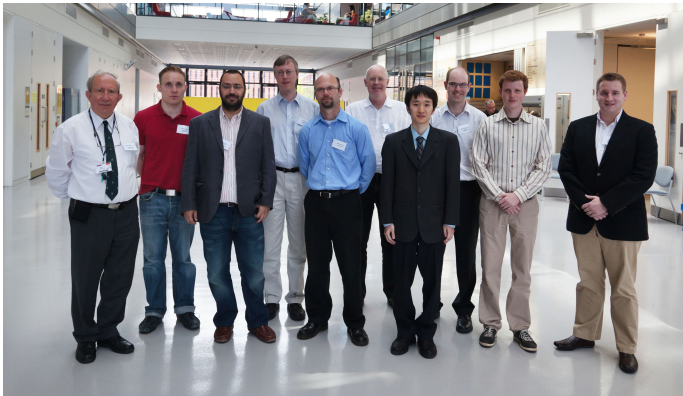# 15th Leslie Fox Prize in Numerical Analysis

From left to right: Christopher Baker, Arnulf Jentzen, Konstantinos Zygalakis, Nick Higham, Mark Ainsworth, Nick Gould, Yuji Nakatsukasa, Richard Norton, Bart Vandereycken, Ben Adcock.

The **15th Leslie Fox Prize Meeting** was held in the Manchester Institute for Mathematical Sciences at the University of Manchester on Monday June 27, 2011. This biennial prize was established in 1985 to honour Professor Leslie Fox, who founded the Oxford University Computing Laboratory in 1957 and was the Professor of Numerical Analysis at Oxford from 1963 to 1983. It is open to numerical analysts worldwide who are under 31 years of age on 31 January of the prize year. An entry comprises a paper describing some of the candidate's research. The call for papers states that 'Particular attention will be given to the originality and quality of each paper, and to the suitability of the material for a 40 minute talk to a general audience of numerical analysts.' This year's prize received a record 30 entries (of whom four were women) from 10 countries:

- Austria: 1 (University of Vienna)
- Belgium: 1 (Université Catholique de Louvain)
- Canada: 1 (Simon Fraser University)
- Czech Republic: 1 (Academy of Sciences of the Czech Republic)
- Germany: 7 (German Aerospace Center, Heidelberg University (two submissions), Humboldt University, Karlsruhe Institute for Technologie, Technische Universität Dresden, University of Magdeburg)
- Italy: 1 (University of Pisa)
- Japan: 1 (Nagoya University)
- Switzerland: 2 (ETH Zurich (two submissions))
- UK: 8 (Heriot-Watt University, University of Edinburgh, University of Manchester, University of Oxford (four submissions), STFC Rutherford Appleton Laboratory)
- USA: 7 (Princeton University, UCLA, University of California Davis, University of California San Diego, University of Colorado at Boulder, University of Maryland, University of Texas at Austin).

Most of the main branches of numerical analysis were covered by the entries. Six candidates were shortlisted and invited to give a 40-minute presentation at the Prize Meeting. The meeting began with some opening remarks about Leslie Fox and the history of the prize by Professor Christopher Baker, a past chair of the Adjudicating Committee, and emeritus Professor at The University of Manchester and part-time Professor at the University of Chester. The audience of around 25 enjoyed an exceptionally well presented set of talks, all running perfectly to time. After careful consideration the adjudicators awarded one first prize and five second prizes, as follows, where the title of each entry is shown:

First Prize

Yuji Nakatsukasa (University of California, Davis). Dqds with aggressive early deflation

Second Prizes

- **Ben Adcock** (Simon Fraser University). Stable reconstructions in Hilbert spaces and the resolution of the Gibbs phenomenon
- **Arnulf Jentzen** (Princeton University). Strong convergence of an explicit numerical method for SDEs with non-globally Lipschitz continuous coeffients
- **Richard Norton** (University of Oxford). Convergence analysis of planewave expansion methods for Schrödinger operators with discontinuous periodic potentials
- **Bart Vandereycken** (ETH). A Riemannian optimization approach for computing low-rank solutions of Lyapunov equations
- **Konstantinos Zygalakis** (University of Oxford). On the existence and applications of modified equations for stochastic differential equations

The slides for the talks are available from the meeting web site at: http://www.mims.manchester.ac.uk/events/workshops/FOX2011

The finalists received a monetary prize from the Leslie Fox Prize Fund, a certificate, the offer of a year's free membership of the IMA, and a share of book vouchers with a total value of well over £1,000, generously donated by Cambridge University Press, CRC Press, Oxford University Press, Princeton University Press, SIAM and Springer-Verlag London. The meeting was also sponsored by the Manchester Institute for Mathematical Sciences, which provided local accommodation for the finalists and adjudicators and registration for all participants.

Following established practice, the present Chair of Adjudicators will step down, and the Editorial Board of the *IMA Journal of Numerical Analysis* will appoint a new adjudicator at its next meeting. Mark Ainsworth will become Chair of Adjudicators for the 16th Leslie Fox Prize in Numerical Analysis in 2013.

The funding for the Leslie Fox Prize has been obtained by private donations and the interest from the prize fund, particularly with current rates, comes nowhere near covering the cost of the prizes, even though these are far lower than appropriate for such a significant honour. A number of donations have been made over the last few months following calls on the 15th Leslie Fox Prize website (http://www.mims.manchester.ac.uk/events/workshops/FOX2011/donations.php) and in *Mathematics Today*. Further donations, which for UK tax payers may be Gift Aided, are most welcome.❏

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