

17th IMA Leslie Fox Prize in Numerical Analysis



The prize winners, adjudicators and guest speaker. L-R: Alastair Spence, Iain Duff, Nick Gould, John Pearson, Alex Townsend, Iain Smears, Patrick Farrell, Olivier Fercoq, Clarice Poon, Andy Wathen.

The 17th IMA Leslie Fox Prize meeting took place at the University of Strathclyde in Glasgow on Monday the 22nd of June, 2015, just prior to the Biennial Conference on Numerical Analysis. The prize was established in the mid 1980s to honour the retirement of Professor Leslie Fox, who had founded the Oxford University Computing Laboratory in 1957 and who had acted as Professor of Numerical Analysis in the interim. The intention of the prize is to honour young numerical analysts—currently those who were under 31 on January 31st 2015. It requires candidates to submit a paper describing some of their work, and, if invited, to give a talk on this work suitable for a general numerical analysis audience. This year's prize attracted 22 entries from the UK, France, Germany, Austria, the Czech Republic, Sweden, USA and China, covering the whole spectrum of numerical analysis and some of scientific computing. These entries were whittled down to a list of six finalists by the prize adjudication committee, and the successful candidates were then invited to present a 40 minute talk in Glasgow. The overall standard of submissions was, as always, very high, and the committee's job thus far from trivial.

The prize meeting started with a number of entertaining reminiscences about Leslie Fox by one of his former graduate students, Professor Iain Duff (STFC-RAL & CERFACS). The main events of the day were, of course, the presentations by each finalist in turn, and their subsequent lively interrogation by members of the enthralled audience. The talks were uniformly well prepared, presented, and timed to perfection. The prize committee then faced the very difficult task of choosing a winner, while all other attendees relaxed over tea and coffee.

After much deliberation, the committee finally reappeared, having agreed to award two first and four second prizes. The first prizes were awarded to **Iain Smears** (U. Oxford) for “Discontinuous Galerkin finite element methods for Hamilton-Jacobi-Bellman equations with Cordes coefficients”, **Alex Townsend** (MIT) for “A fast analysis-based discrete Hankel transform using asymptotic expansions”,

and the second prizes to

Patrick Farrell (U. Oxford) for “Deflation techniques for finding distinct solutions of nonlinear partial differential equations”,

Olivier Fercoq (Telecom ParisTech) for “Accelerated, parallel and proximal coordinate descent”,

John Pearson (U. Kent) for “Fast iterative solvers for reaction-diffusion control models of chemical and biological processes”, and

Clarice Poon (Cambridge U.) for “On the role of total variation in compressed sensing”.

(The talks are available online at <http://www.numerical.rl.ac.uk/people/nimg/fox/prize.php>.)

The prizes were presented by Iain Duff. Each winner received a prize certificate, a monetary prize from the IMA Leslie Fox Prize Fund, the offer of a year's free membership of the IMA, and a selection of book vouchers generously provided by Cambridge University Press, CRC Press, Oxford University Press, Princeton University Press, SIAM and Springer Verlag. The meeting was kindly hosted by the Department of Mathematics and Statistics at the University of Strathclyde who, together with funds from the Biennial Numerical Analysis Conference, provided accommodation and catering; the

committee particularly appreciated help from Dr. Alison Ramage (U. Strathclyde), and from Professor Alastair Spence (U. Bath) who so gallantly stepped in at the last moment to cover for the unfortunately-indisposed Ben Leimkuhler.

Thanks to the IMA, the Prize's finances are now on a much more stable footing. Nonetheless, donations to support the prizes continue to be most welcomed, and anyone who wishes to help in this way should look at <http://www.numerical.rl.ac.uk/people/nimg/fox/donations.php>.

The next prize meeting will occur in 2017 when Andy Wathen will become its new chair. We urge all of today's young numerical analysts to seize this opportunity to become the next IMA Leslie Fox Prize winner.

Nick Gould (STFC-Rutherford Appleton
Laboratory, Chair)

Andy Wathen (University of Oxford)

Ben Leimkuhler (University of Edinburgh)