

## **Naylor Prize and Lectureship: citation for Endre Süli**

### Short citation:

Professor Endre Süli of the University of Oxford is awarded the Naylor Prize and Lectureship for his wide-ranging contributions to the study of applied mathematics.

### Long citation:

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Süli is beyond doubt a star of the first magnitude in the sky of applied mathematics. His contributions cover a very wide range, refer to many different types of applications, and are always successful in orienting (or re-orienting) international research on the subject.

One of the most relevant contributions is his work on h/p discontinuous Galerkin Methods. Often, after the first run of a code on a specific problem, there is a need to improve the quality of the approximation in certain regions of the computational domain. What is required is to detect the region where improved accuracy is needed, and then to choose between increasing the degree ( $p$ ) of the approximation, or using a smaller mesh size ( $h$ ). All of these choices are of paramount importance in order to get a good enough result with a reasonable amount of effort. On this, Endre Süli has made fundamental contributions that are widely recognised by the international community.

Of equally paramount importance have been his contributions to the modelling of nonlinear fluids and elastic materials, where the main difficulty is to find a formulation that combines a good reproduction of the physical phenomenon with the possibility of using it, in practical computations, in order to get sufficient accuracy. All this is particularly difficult in so-called multiscale problems, where physical phenomena that occur at a very small scale (say, in the order of millimetres) can have a significant, and sometimes dramatic, effect on phenomena that occur at a much larger scale (say, in the order of kilometres). This makes numerical approximation very difficult and very expensive. On this, too, Süli has made several very important contributions.

In addition to this, Süli's approach to mathematics has always been characterised by a superb elegance, both in his presentation of results as well in his approach to colleagues and their work; a mark of class that puts him, somehow, in a unique position within the international panorama.