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Fields Medal 2010 – the 'Nobel Prize' for mathematics

Four mathematicians have been awarded the prestigious Fields Medal by the President of India in a ceremony at the International Congress for Mathematicians in Hyderabad. The Fields Medal is of an equivalent standing within mathematics as the Nobel Prize is within general science. In an eloquent opening address the President of India referred to mathematics as "standing at the helm of all science" and stressed its central importance to the modern world.

Elon Lindenstrauss of Princeton University, New Jersey, US and Ngô Bao Châu of Université Paris-Sud in Orsay, France, were awarded the prize for their work with applications to number theory. Stanislav Smirnov of the University of Geneva, Switzerland, and Cédric Villani of the Henri Poincaré Institute in Paris received their medals for theoretical work in statistical physics.

The medal is awarded every four years and is restricted to those under 40 years of age. The award to Ngô is particularly welcomed by the LMS as he is a member of the editorial board of *Compositio Mathematica*, which is produced and published by LMS on behalf of its Foundation.

Ngô Bau Châu's award citation outlines his "brilliant proof" of a long-standing conjecture in number theory known as the "Fundamental Lemma", which lies at the heart of a broad unifying vision of mathematics that Robert Langlands, now at the Institute for Advanced Study in Princeton, New Jersey, initiated in

the late 1960s. The Langlands Program, as it is called, ties together virtually all aspects of modern mathematics.

Professor Angus MacIntyre, President of the London Mathematical Society, said, "Ngô's work is an astounding tour de force that puts in place a central component in Langland's magnificent conjectures".

Ngô Bao Châu's proof was praised by the number theorist Peter Sarnak, "It's as if people were working on the far side of the river waiting for someone to throw this bridge across. And now all of a sudden everyone's work on the other side of the river has been proven".

Ngô Bau Châu's success was selected by *Time* magazine as one of the Top Ten Scientific Discoveries of 2009.

Notes for Editors

1.   The **London Mathematical Society (LMS)** is the UK's learned society for mathematics. Founded in 1865 for the promotion and extension of mathematical knowledge, the Society is concerned with all branches of mathematics and its applications. It is an independent and self-financing charity, with a membership of over 2600 drawn from all parts of the UK and overseas. Its principal activities are the organisation of meetings and conferences, the publication of periodicals and books, the provision of financial support for mathematical activities, and the contribution to public debates on issues related to mathematics research and education. It works collaboratively with other mathematical bodies worldwide. It is the UK adhering body to the International Mathematical Union.

2.   The **Fields Medal** was founded at the behest of the Canadian mathematician John Charles Fields and was first awarded in 1936. Its aim is to recognise and support the major contributions of younger mathematicians - those under 40 years old. The award includes a monetary award, which in 2006 was US$15,000 (€10,000).

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