The London Mathematical Society

De Morgan House 57-58 Russell Square London WC1B 4HS

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Mathematician honoured for his $1 million dollar question

The London Mathematical Society has awarded its foremost prize, the De Morgan Medal, to a mathematician who developed a problem which has yet to be solved.

The LMS Council announced that Professor Bryan Birch, of the University of Oxford, had been awarded the triennial prize in recognition of his influential contributions to modern number theory. This area of mathematics is used in ensuring the security of Pin numbers and communications generally.

In particular, Professor Birch worked with Professor Sir Peter Swinnerton-Dyer, of the University of Cambridge, to create a new area of arithmetic algebraic geometry. Together they formulated the Birch-Swinnerton-Dyer conjectures. Despite the best efforts of some of the greatest mathematical minds these remarkable conjectures are still open after 40 years and are amongst seven classic unsolved mathematical problems identified by the Clay Mathematics Institute in Cambridge, Massachusetts. The Institute is offering $1 million prizes for their proofs.

Professor John Toland, President of the LMS, said, "These remarkable conjectures are still open and a million dollar prize awaits anyone who comes up with a proof. For these conjectures, and for many other seminal contributions, we honour Professor Birch today." Professor Toland quoted mathematician Georg Cantor, who, in 1867 said, "In mathematics, the art of proposing a question must be held of higher value than solving it."

The Council for the LMS announced the De Morgan Medal and other prize winners at the Society Meeting held at University College London on 22 June. The awards will be presented at the LMS Annual General Meeting on 23 November.

DE MORGAN MEDAL

The De Morgan Medal is awarded to **Professor Bryan Birch** of the University of Oxford in recognition of his influential contributions to modern number theory.

Bryan Birch's joint work with Peter Swinnerton-Dyer on elliptic curves created an exciting new area of arithmetic algebraic geometry; the Birch-Swinnerton-Dyer conjecture remains after 40 years one of the most exciting problems in modern mathematics. His work on Heegner points has led to huge advances in the arithmetic of elliptic curves.

SENIOR WHITEHEAD PRIZE

The Senior Whitehead Prize is awarded to **Professor Béla Bollobás** of the University of Cambridge.

Béla Bollobás is a world leader in combinatorics and has made fundamental contributions to almost every aspect of this huge area of mathematics. As well as all his papers, he has written a string of extraordinarily influential textbooks, many of which have had the effect of defining (or in some cases redefining) whole areas of research.

NAYLOR PRIZE

The Naylor Prize and Lectureship in Applied Mathematics is awarded to **Professor Michael Green** of the University of Cambridge.

Michael Green is recognised as a founding father of superstring theory which has dominated theoretical physics over the last twenty years. His many subsequent significant contributions to the subject have also profoundly influenced both pure and applied mathematics. He is a gifted communicator and is frequently in demand as a speaker at international conferences.

WHITEHEAD PRIZES

A Whitehead Prize is awarded to **Dr Nikolay Nikolov** of the University of Oxford and Imperial College London for several important advances in group theory, especially in profinite groups and asymptotic aspects of arithmetic groups and finite simple groups.

A Whitehead Prize is awarded to **Dr Oliver Riordan** of the University of Cambridge for his major contributions to graph polynomials, random graphs, extremal combinatorics, models of large-scale real-world graphs, and percolation theory

A Whitehead Prize is awarded to **Dr Ivan Smith** of the University of Cambridge for his work on symplectic topology. Smith's work is notable for the breadth of techniques employed, often blending ideas from algebraic geometry and topology in novel ways.

A Whitehead Prize is awarded to **Dr Catharina Stroppel** of the University of Glasgow for her contributions to representation theory, in particular in the framework of categorifications, and its applications to low-dimensional topology.

ENDS

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 and is a member of the Council for the Mathematical Sciences, which also comprises the Institute of Mathematics and its Applications and the Royal Statistical Society.

2. The LMS awarded its prestigious Pólya Prize to Professor Sir Peter Swinnerton Dyer in 2006.

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