



Formal Aspects of Computing
Science Specialist Group



LONDON
MATHEMATICAL
SOCIETY
150 YEARS

BCS-FACS Evening Seminar **Joint event with the London Mathematical Society**

Tuesday 3rd November 2015, 6:00pm



Professor Roland Backhouse
(University of Nottingham)

The Mathematics of Program Construction

The Mathematics of Program Construction is the title of a series of conferences that was initiated by Jan van de Snepscheut and Professor Backhouse in 1989 and is how he has described his research since round about that time. Its goal is to improve the reliability and dependability of computer software by developing mathematical theories and methods focused on the process of constructing software. In this talk Professor Backhouse will give a personal view on what the mathematics of program construction is about.

Software construction is underpinned by abstraction and calculation. Abstraction is the process of modelling the real world and calculation is used to construct implementations that achieve desired effects based on those models. Choosing the right abstractions and developing the calculational method are therefore fundamental to developing the mathematics that supports software construction. Professor Backhouse will sketch a number of algebraic systems that, in his view, play a central role in software development. These include regular algebra, relation algebra, fixed-point calculus and category theory. He will also argue that a greater focus on articulating the calculational method can make a significant contribution to improving our constructive problem-solving skills.

The venue is the London Mathematical Society, De Morgan House 57-58 Russell Square, London WC1B 4HS. Refreshments will be available from 5.30pm.

The seminar is free of charge and open to everyone. If you would like to attend, please register at lmscomputerscience@lms.ac.uk.