



Bio Sketch for Magnus Bordewich

What area of maths do you work in?

Algorithms and complexity.

Tell us more...

This is the study of what makes some problems hard to compute efficiently, and others easy. It is the basis of much of computer science. For example, when you use an online banking service, the cryptography relies on the fact that multiplying two large numbers (primes) together is easy (at least for a computer), whereas given the result only, it is hard (even on a computer) to find out what the two numbers were (this is known as factorisation). Similar ideas crop up everywhere. I look at lots of problems in DNA analysis, where we know what we want to compute, and the question is: does the mathematical structure of the problem allow us to compute it easily (like multiplication), or is it going to be hard (like factorisation).

What areas of maths do you follow from a purely interest standpoint?

There is a fun area of maths called knot theory, which is about taking abstract bits of string all messed up in some dimension, and trying to determine whether they are fundamentally knotted, or whether you could push the loops etc. about and unravel it with bringing one of the ends through.

What were your best and worst subjects at school?

Best: physics, worst: English

When you decided you wanted to be a mathematician and why

I decided to study maths in my last year at school when we did “wave/particle duality” in physics and I stopped believing in physics, or at least I could see how it could have anything to do with the real world.

What training (degrees and subjects) you've done

Undergraduate and D. Phil in mathematics.

What do you do for fun?

Paragliding, woodwork and bringing up my kids, although that stretches the definition a bit.