

## Lecture “Asymptopia” for Bachelor- and Master Students

as well as for more mature Mathematicians

Speaker: Joel Spencer, Professor at Courant Institute, New York University

When: **Monday, 10 November 2014, 16:15--17:15**

Where: Lecture hall **BE 01, Steyrergasse 30**

Joel Spencer will deliver a lecture on several topics from his new book “**Asymptopia**”, which is part of the AMS Student Mathematical Library and useful for mathematicians at all stages -- it has a wide variety of problems (number theory, Ramsey Theory, combinatorial geometry, algorithms, ...) and the common theme is how to look at problems asymptotically.

Günter Ziegler described the book “Asymptopia” as “a lovely little travel guide to a country you might not even have heard about -- full of wonders, mysteries, small and large discoveries.”

In his lecture for bachelor- and master students in Graz, Joel Spencer has selected some gems from his book, including:

1. **Stirling's Formula.** How do the two great constants  $e$  and  $\pi$  appear in the asymptotic formula for  $n!$ . The key: asymptotic integration.
2. **Primes.** You know that there are an infinite number of primes. You probably have not seen the proof given in Asymptopia. Even more, the sum of the reciprocals of the primes diverges.
3. **Counting Unicyclic Graphs.** In the asymptotic formula,  $\pi$  mysteriously appears.

About the speaker:



Joel Spencer is arguably best known for his book "The Probabilistic Method", a standard reference for powerful and widely used probabilistic tools in discrete mathematics. He was a co-founder of the journal "Random Structures and Algorithms", one of the leading journals in discrete mathematics and theoretical computer science. He holds a joint appointment as Professor of Mathematics and Computer Science at New York University's Courant Institute of Mathematical Sciences.