To Joel, on his 60+ birthday

I first met Joel Spencer nearly 30 years ago, when I spent two years in MIT soon after completing my PhD. Having read his book with Erdős on Probabilistic Methods in Combinatorics as well as his Ramsey Theory book with Graham and Rothschild and some of his papers long before I first met him, I was amazed to meet a young, enthusiastic guy who did not quite fit the image I had in mind for a person who had already written at least two books and many research papers.

Nearly 30 years passed. I have meanwhile written a book and seven joint papers with Joel. I have met his amazing wife and family and had numerous mathematical and non-mathematical discussions with him. It is clear that he is still as enthusiastic and as energetic as he has ever been, with a true passion for mathematics, (though now I sometimes find it harder to keep up).

Joel has obtained outstanding results in Discrete Mathematics, contributing to the foundation of Probabilistic Combinatorics and Ramsey Theory as well as to the development of Combinatorial Geometry, Discrete Probability and Extremal Combinatorics. Many of his results have already become classical: he showed that Six Standard Deviations Suffice (being a classical result, I don't feel that any clarifications are needed), and proved, with Shelah, their well known zero-one law for sparse graphs with edge density $n^{-\alpha}$ for irrational α. He initiated the study of Euclidean Ramsey Theory with Erdős, Graham, Montgomery, Rothschild and Straus and showed, with Shamir, that martingales can do wonders in the study of random graphs. He obtained, with Trotter and Szemerédi, the best known upper bound for the number of unit distances among n points in the plane, and determined, with Pippenger, the asymptotic behavior of the chromatic index of simple regular hypergraphs. His work with Matoušek revealed the power of entropy in determining the discrepancy of arithmetic progressions in the first n integers, and his result with Pittel and Wormald located the time of emergence of the k-core in the random graph process.

His impact, however, should be measured not only by his pure scientific achievements, but also by his immense contributions through his books, the journal *Random Structures & Algorithms* which he co-founded with Karoński, and his intriguing questions. He has a unique ability to explain results in a clear and coherent manner, and he has often given some of these

results names that became standard. The Lovász Local Lemma (LLL) is one example, the Lopsided Lovász Local Lemma (LLLL) is another one, the Rödl Nibble is yet another. The subject of an email message he sent me sometime in 1993 reads: RRRRR. By this, he explained, he meant to refer to the (then) new Rödl – Ruciński Random Ramsey Result.

The papers in this special volume of the *Journal of Combinatorics* represent well the impact of Joel on Discrete Mathematics. The volume includes papers on random graphs, games, zero-one laws, geometric graphs, patterns in words and compositions, hypergraph edge colorings and randomized versions of heuristic algorithms. All these are subjects to which Joel has contributed extensively. There is no doubt that he will keep proving, conjecturing and stimulating further top quality results in the future as well.

Working in Discrete Mathematics is a fascinating occupation. An extra bonus of this profession, which we often tend to forget, is that it gives us the opportunity to meet, work and socialize with wonderful colleagues. Joel is such a colleague. I am delighted that I had, and still have, the opportunity to be one of his friends and collaborators.

Noga Alon, November 2010