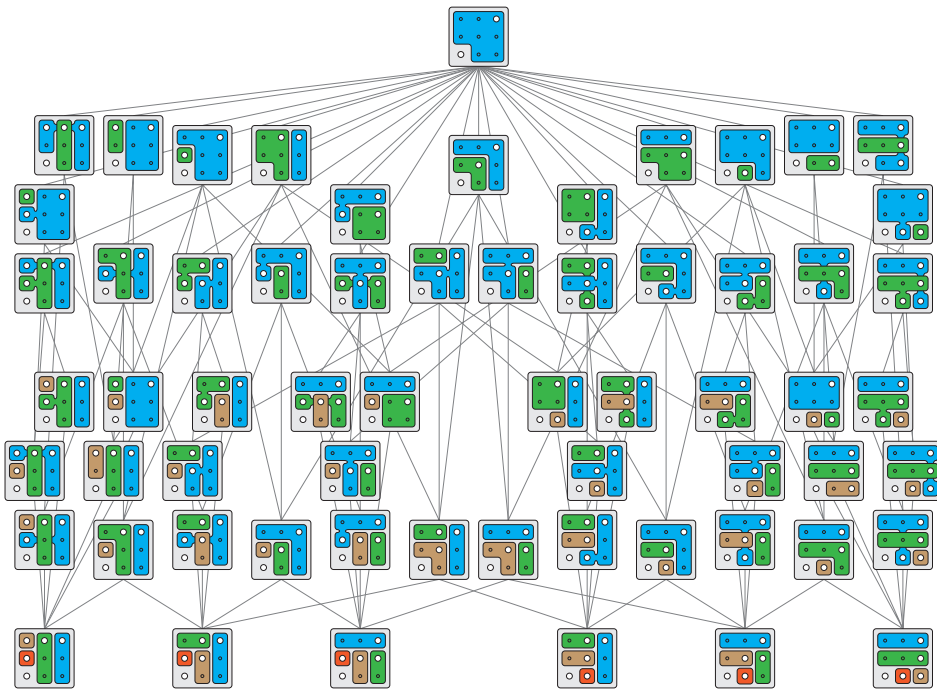DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE

Colloquium

The poset of 0–1 factorizations of $\frac{1-x^n}{1-x}$

Ian Morrison (Fordham University)

Abstract

The set of factorizations in the title (and various avatars) have generated a literature of some 30 papers. I will describe joint work with Dave Bayer whose main novelty is to view these factorizations as a poset with partial order given by further factorizations of its elements. Our description of this poset in terms of elementary posets associated to divisors of n leads to combinatorial pictures like the one above for $n = 36$, and to a more structural approach to prior results that clarifies and sharpens them. All the proofs are completely elementary (though sometimes a bit subtle) so undergraduates are encouraged to attend.

4 – 5pm, Wednesday, April 5, 2023

Room 204, Smith Hall