

**New Frontiers in Probabilistic and Extremal Combinatorics**  
**30 September-4 October 2024**  
**L2**

**Schedule**

**Monday 30 September**

- 9:00-10:00 Tim Gowers, *A proof of a conjecture of Marton*  
10:00-10:30 Coffee  
10:30-11:30 Jeff Kahn, *Balancing extensions in posets of large width*  
11:30-12:30 Imre Leader, *Partial Shuffles by Transpositions*  
12:30-14:30 Lunch  
14:30-15:30 Jacques Verstraete, *Recent progress in Ramsey Theory*  
15:30-16:00 Coffee  
16:00-17:00 Annika Heckel, *Tame colourings of random graphs*

**Tuesday 1 October**

- 9:00-10:00 Peter Keevash, *Isoperimetric stability and its applications*  
10:00-10:30 Coffee  
10:30-11:30 Asaf Shapira, *Regularity for Hypergraphs of Bounded  $VC_2$  Dimension*  
11:30-12:30 Lisa Sauermann, *Improving Behrend's construction for three-term progression free sets*  
12:30-14:30 Lunch  
14:30-15:30 Dor Minzer, *The Lens of Abelian Embeddings*  
15:30-16:00 Coffee  
16:00-17:00 Matt Kwan, *Smoothed analysis for graph isomorphism*

**Wednesday, 2 October – Clay Research Conference, L1**

- 10:00-11:00 Ana Caraiani, *The cohomology of Shimura varieties - a survey of recent developments*  
11:00-11:30 Coffee  
11:30-12:30 Mark Andrea De Cataldo, *The  $P=W$  Conjecture in Non Abelian Hodge Theory*  
12:30-14:00 Lunch  
14:00-15:00 Timothy Gowers, *Some recent developments in combinatorics*  
15:00-15:30 Coffee  
15:30-16:30 Rahul Pandharipande, *Cycles on the moduli space of abelian varieties*  
16:30-17:30 Chandrashekhhar Khare, *The work of James Newton and Jack Thorne*  
Philippe Michel, *The work of Paul Nelson*  
Presentation of the 2024 Clay Research Awards  
17:30-19:00 Reception in the Mathematical Institute  
19:00 Dinner for invited guests, Exeter College

**Thursday 3 October**

- 9:00-10:00 Oliver Janzer, *Regular subgraphs at every density*  
10:00-10:30 Coffee  
10:30-11:30 Matija Bucić, *Equiangular lines in the exponential regime*  
11:30-12:30 Richard Montgomery, *Approximate path decompositions of regular graphs*  
12:30-14:30 Lunch  
14:30-15:30 Will Perkins, *Triangle-free graphs in the critical regime*  
15:30-16:00 Coffee  
16:00-17:00 Alexey Pokrovskiy, *Hyperstability in the Erdős-Sós Conjecture*

## Friday 4 October

- 9:00-10:00 David Conlon, *Around Sidorenko's conjecture*  
10:00-10:30 Coffee  
10:30-11:30 Oliver Riordan, *Improved concentration of the chromatic number of certain random graphs*  
11:30-12:30 Shoham Letzter, *Packing subgraphs in dense regular graphs*  
12:30-14:30 Lunch  
14:30-15:30 Mehtaab Sawhney, *Improved Bounds for Szemerédi Theorem*  
15:30-16:00 Coffee  
16:00-17:00 Ben Green, *On Sarkozy's theorem for shifted primes*