



## Probability Seminar

**Title:** Random partitions, Hurwitz numbers and counting high genus surfaces

**Speaker:** Harriet Walsh (UCD)

**Date:** Wed 18th September 2024 at 2:00PM

**Location:** E0.32 (beside Pi restaurant)

**Abstract:** The Hurwitz numbers count transposition factorisations on symmetric groups, and equivalently certain discrete surfaces. A formula due to Frobenius allows us to interpret unconnected Hurwitz numbers as normalisation factors for probability laws on integer partitions, called Plancherel-Hurwitz measures. These include the classical Plancherel measure, whose normalisation factor counts trivial unconnected surfaces and whose asymptotic behaviour has been widely studied. I will talk about the asymptotic behaviour of random partitions under Plancherel-Hurwitz measures in a regime where the normalisation factors count unconnected surfaces of high genus. This probabilistic approach lets us estimate high genus unconnected Hurwitz numbers and raises questions about random unconnected surfaces and bijective interpretations of Frobenius' formula. Based on joint work with Guillaume Chapuy and Baptiste Louf (arXiv:2206.11315).