Nina Snaith:

My research is in Random Matrix Theory. An ensemble of random matrices is a set of matrices, usually sharing some symmetry property, along with some kind of weighting or measure on that set. You can think of filling the matrix elements with random variables, such as Gaussian random variables. In particular, my projects often involve looking at the eigenvalue statistics and properties of characteristic polynomials of matrices in various ensembles.

The PhD projects I supervise are often motivated by the connection between Random Matrix Theory and certain number theoretical functions such as the Riemann zeta function and L-functions. This connection arises through the statistics of the zeros of these functions and can be exploited, allowing us to study zeta and L-functions using the well-developed techniques of Random Matrix Theory.

I'm happy to supervise PhD projects in Random Matrix Theory. The mathematics can be varied, with previous projects including techniques from probability, analysis, manipulating matrix determinants, combinatorics and computation.