Approximation, Serre duality and recollements are three major tools in the study of triangulated categories in algebraic geometry and representation theory. In this talk, I will explain how these tools interact. In particular, I will show how approximability and Serre functors behave under recollements.

The existence of Serre duality is a very strong condition; the bounded derived category of a finite dimensional algebra satisfies Serre duality if and only if it has finite global dimension. Replacing Serre duality by the weaker notion of a partial Serre functor, we can apply this tool to any approximable category, and in particular to any ring. Throughout, I will use Neeman's theory of approximation for triangulated categories as a black box, but I will work out several examples.