# Generalised covering designs and clique coverings

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Covering designs are a generalisation of $t$-designs, where the requirement that any $t$-subset of points be contained in *exactly* $\lambda$ blocks is replaced with the weaker requirement that they be contained in *at least* $\lambda$ blocks. Covering arrays generalise orthogonal arrays in a similar manner.

In this talk, inspired by PJC's "generalised $t$-designs", I will present a common generalisation of covering designs and covering arrays, as well as some methods of constructing these new designs. In particular, I'll focus on the case $t = 2$, where there is a strong relationship with graph theory, in the form of clique coverings.

If time permits, I may also talk about the "dual" problem of generalised packing designs.