LEO GOLDMAKHER, Williams College and Carnegie Mellon University
Large subsets are sumsets

Large subsets of $[n]$ can be expressed in the form $A+B$ with A, B sets of cardinality at least 2. How large must a subset be to guarantee such an additive decomposition? We show that any subset larger than $(n-\log n)$ must admit such a decomposition. This is nearly optimal: for each n we construct an indecomposable subset of $[n]$ of size larger than $(n-4\log n)$. We conclude with a discussion of higher-dimensional analogues of this question. This is joint work with a number of former participants in the SMALL summer REU program at Williams College.