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**Joseph Kirtland\*** ([joe.kirtland@marist.edu](mailto:joe.kirtland@marist.edu)), Department of Mathematics, Marist College, 3399 North Road, Poughkeepsie, NY 12601. *Finding Proper Factorizations for Finite Groups*. Preliminary report.

A group  $G$  has a **proper factorization** if  $G = AB$  for proper subgroups  $A$  and  $B$  of  $G$ . Numerous results have been established concerning groups which admit certain proper factorizations. A classic example of these types of results is the one by Kegel which establishes that  $G = AB$  is solvable when  $A$  and  $B$  are nilpotent. The findings presented here focus on the other side of this investigation. In this talk, conditions will be established for when a finite group admits a proper factorization. In addition, conditions will be given for when an arbitrary subgroup of a finite group  $G$  is part of a proper factorization for  $G$ . (Received June 14, 2005)