1146-16-230 **Lindsay N Childs*** (lchilds@albany.edu). *Hopf Galois structures and bi-skew braces.*
Say that a pair of finite groups (G, N) of equal order is realizable if there exists a Galois extension L/K of fields with Galois group G that also is a Hopf Galois extension by a K-Hopf algebra H of type N (that is, $L \otimes_K H \cong LN$).

A skew brace $(B, \circ, \star)$ with additive group $(B, \star)$ and circle group $(B, \circ)$ gives rise to Hopf Galois structures of type $N \cong (B, \star)$ on a Galois extension L/K of fields with Galois group $G \cong (B, \circ)$. So finding a skew brace B with $(B, \star) = N$ and $(B, \circ) = G$ is equivalent to showing that the pair (G, N) is realizable.

We call a set B with two group structures, $(B, \star)$ and $(B, \circ)$ a bi-skew brace if B is a skew left brace with either group acting as the additive group . If $B(\circ, \star)$ is a bi-skew brace and $(B, \circ) \cong G, (B, \star) \cong N$, then both (G, N) and (N, G) are realizable. We describe collections of non-trivial examples. (Received January 23, 2019)