1117-54-324 **Stewart Baldwin*** (baldwsl@auburn.edu), Department of Mathematics and Statistics, Auburn University, Auburn, AL 36849-5310. *A nontrivial uniquely homogenous subset of the plane, all of whose homeomorphisms are rigid motions.* Preliminary report.

We show that for every positive even integer n, there is a dense uniquely homogeneous subspace X of $\mathbb{R}^n$, all of whose non-constant continuous functions are rigid motions. In the case $n = 2$, X can be constructed to be Bernstein, i.e., Both X and $\mathbb{R}^2 \setminus X$ intersect every Cantor set in $\mathbb{R}^2$. The construction uses certain facts about complex arithmetic to get a Bernstein example for the complex plane $\mathbb{C}$, and then uses a well-known trick involving products to get (non-Bernstein) examples for $\mathbb{C}^n$, so the proof as it currently exists will not generalize easily to $\mathbb{R}^n$ for odd n, but it is conjectured that the result also holds for odd n. (Received January 17, 2016)