1089-54-235 **Andrea Medini*** (medini@math.wisc.edu), Department of Mathematics, 480 Lincoln Drive, Madison, WI 53706. *Countable dense homogeneity and set theory.*

A separable (usually metrizable) space X is countable dense homogeneous (briefly, CDH) if for for every pair (D, E) of countable dense subsets of X there exists a homeomorphism $h : X \longrightarrow X$ such that $h[D] = E$. The Euclidean spaces $\mathbb{R}^n$, the Hilbert cube $[0, 1]^\omega$ and the Cantor set 2^ω are all examples of CDH spaces, while $\mathbb{Q}^\omega$ is not. I will discuss more interesting examples, and survey some of the ways in which set theory is helpful in the study of CDH spaces (especially those involving Martin's axiom, ultrafilters and descriptive set theory). Also, I might make brief detours on "How to prove stuff in ZFC" and the topological Vaught conjecture. (Received February 16, 2013)