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**Lei Chen\***, chenlei@caltech.edu, and **Kathryn Mann**. *An orbit classification theorem for transformation groups.*

We give an orbit classification theorem and a general structure theorem for actions of groups of homeomorphisms and diffeomorphisms on manifolds, reminiscent of classical results for actions of (locally) compact groups. As applications, we will discuss some classification results about  $\text{Homeo}(M)$  and  $\text{Diff}(M)$  acting on  $N$  when  $\dim(N) - \dim(M)$  is not too big. This is joint work with Kathryn Mann. (Received August 15, 2019)