Rational points on definable sets

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I will discuss problems and results concerning rational points on algebraic and, mainly, certain non-algebraic sets. More specifically, bounded subanalytic sets and, more generally, definable sets in o-minimal structures. I will describe a result joint with Wilkie showing that such a set X can have only "few" rational points, in a suitable sense, that do not lie on some semi-algebraic subset of X of positive dimension. I will describe connections with transcendence theory and indicate a new proof (joint with Zannier) of the Manin-Mumford conjecture using these methods.