A Hopf algebra of prime dimension $p$ over an algebraically closed field $k$ of characteristic zero was proven to be isomorphic to a group algebra by Zhu. The same result was established by Etingof and Gelaki when the characteristic $q$ of $k$ is greater than $p$. However, if $k$ is of characteristic $p$, there are three isomorphism classes of Hopf algebras of dimension $p$. It is more surprising that the technique for the classification of Hopf algebras of dimension $pq$ over $\mathbb{C}$ reincarnated in the classification of Hopf algebras of dimension $p$ over $k$ of characteristic $q$ when $p < 4q$. In this talk, we discuss some background and approach of this result. The talk is based on a joint work with Xingting Wang. (Received September 15, 2020)