Paolo Cascini: **Birational geometry and singularities in positive characteristic.**

Many of the results in the Minimal Model Program over complex projective varieties depend on Kodaira's vanishing theorem and its generalizations over singular varieties. Because of the failure of these tools over an algebraically closed field of positive characteristic, it is not known whether these results generalize to this case. The main tool available for the study of varieties over a field of positive characteristic is the Frobenius morphism. In particular, it is crucial to understand singularities from this point of view.
I will survey some recent progress in this direction.