GREGORY G. SMITH, Queen's University
Smooth Hilbert schemes

Hilbert schemes are the prototypical parameter spaces in algebraic geometry—their points correspond to the closed subschemes in $\mathbb{P}^n$ with a fixed Hilbert polynomial. We present numerical conditions on the polynomial that completely characterize when the associated Hilbert scheme is smooth. In the smooth situation, our explicit description of the subschemes being parametrized also provides new insights into the global geometry of the Hilbert scheme. This talk is based on joint work with Roy Skjelnes (KTH).