1128-16-95 **Alexandru Chirvasitu*** (chirva@uw.edu), Department of Mathematics, Univerity of Washington, Seattle, WA 98195, and **S. Paul Smith** and **Michaela Vancliff**. *Families of quantum projective schemes.*

Quantum projective spaces are generally non-commutative graded algebras that in many ways resemble rings of polynomials and have good homological behavior. This makes them good candidates for what the homogeneous coordinate ring of a "quantum projective scheme" should be.

In this talk I will focus on the case of 3-dimensional non-commutative projective spaces (where the algebras in question have four generators and six quadratic relations). The intrinsic geometry of a quantum projective space can be probed by means of classical (i.e. commutative) schemes, analogous to grassmannians, parametrizing the "points" and "lines" in the respective quantum projective space.

The main result is that for nicely varying families of quantum $\mathbb{P}^3$ spaces the resulting families of classical schemes are flat. What this means is that various numerical invariants of the schemes in question are constant along the families, and hence there are strong numerical restrictions on what these schemes can look like. This helps in describing the varieties of lines in various quantum $\mathbb{P}^3$s, and sheds some light on our mostly conjectural understanding of the "generic" quantum projective three-space.

(joint w/ S. Paul Smith and Michaela Vancliff) (Received February 16, 2017)