1135-47-1455 **Kristin Courtney*** (kc2ea@virginia.edu). *A von Neumann-type inequality with universal C*-algebras.*

A famous inequality of von Neumann states that, given any polynomial p in one variable, the maximal norm of the operator p(T), as T ranges over all contractive Hilbert space operators, can be determined by considering only contractive operators on a one dimensional Hilbert space, i.e. elements of the unit disk in the complex plane.

With a universal C*-algebra, one can readily establish a von Neumann-type inequality for any non-commutative *-polynomial q, which says that the maximal norm of the operator q(T), as T ranges over contractive Hilbert space operators, can be determined by considering only contractive matrices. In this talk, we show why it actually suffices to consider only nilpotent contractive matrices.

Moving to polynomials in two variables, von Neumann's inequality notably extends for pairs of commuting contractive Hilbert space operators. Can we again look to matrices for an analogous extension in the case of noncommutative *-polynomials in two variables? Surely this question is not too difficult, is it? (Received September 22, 2017)