Abstract:

A $q$-analog of a number is a polynomial in $q$ that recalls the original number evaluated at $q = 1$. Several $q$-analogs play a prominent role in combinatorics, such as $q$-factorials, $q$-binomial coefficients, and $q$-Catalan numbers. We will explore some applications of these $q$-analogs as well as a further generalization, the $q, t$-Catalan numbers.