$\overline{ \begin{array}{c} \textbf{SABIN CAUTIS, UBC} \\ \binom{N}{k} = \binom{N}{N-k} \end{array} }$

We will study this standard high-school binomial identity in greater depth. The resulting ideas, despite their humble beginnings, have lead to a series of advances in diverse areas such as representation theory, algebraic geometry and quantum topology. We survey some of these results and explain how they are all tied together.