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**Soowhan Yoon\*** (10916858@live.mercer.edu). *Polynomials of Binomial Type: an Analytic Connection between the Fibonacci Recurrence and the Binomial Coefficients.*

The Fibonacci sequence and Pascal's triangle are closely related due to their recursive properties. Although these two are often viewed as discrete objects, both can be studied at the analytic level. This talk presents an outline of the proof of the identity  $\sum_{n=0}^{\infty} \binom{\frac{n+z}{2}}{n} = \left(1 + \frac{1}{\sqrt{5}}\right) \phi^z$  and its consequence  $\sum_{n=0}^{\infty} \binom{\frac{n+k}{2}}{n} = L_{k+1} + \frac{F_{k+1}}{\sqrt{5}}$  where  $\phi = \frac{1+\sqrt{5}}{2}$  and  $L, F$  each denote Lucas sequence, Fibonacci sequence, respectively. The proof uses notable properties of the polynomials of binomial type. (Received September 20, 2015)