The Secret Lives of Polynomial Identities

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Polynomial identities can reflect deeper mathematical phenomena. In this talk, I will discuss some of the stories behind four identities (and their relatives). The stories involve algebra, analysis, number theory, combinatorics, geometry and numerical analysis. The identities, which don't fit well in plain text, involve polynomials in two, three and four variables being taken to powers ranging from the third to the fourteenth. The earliest is due to Viéte, and dates to the 1590s. Felix Klein makes a special guest appearance.