Jose N Contreras* (jncontrerasf@bsu.edu), IN. The Varignon Theorem: Linking History and Pedagogy through Technology and Problem Posing.

One of the simplest and most elegant theorems of elementary Euclidean Geometry is the so called the parallelogram theorem or Varignon Theorem, which can be stated as follows: The quadrilateral whose vertices are the midpoints of the consecutive sides of an arbitrary quadrilateral is a parallelogram.

In this presentation, the author examines the Varignon Theorem from a historical point of view followed by a systematic but creative investigation of some variations of the theorem using a problem-posing approach and technology.

Some of these variations have been proposed and investigated by the author’s students with the support of The Geometer’s Sketchpad. Even though the variations of the Varignon Theorem are simple, they produce elegant results. This historical theorem can also be used with middle and high school students to foster their creativity and sense of mathematical beauty. (Received July 16, 2019)