Algebra and Number Theory Colloquium

Polynomials vanishing on points in projective space

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Abstract: We all know that any two points in the plane lie on a unique line. However, three points will lie on a line only if those points are in a very special position: collinear. More generally if Z is a set of k points in n-space, we can ask what the set of polynomials of degree d in n variables that vanish on all the points of Z looks like. The answer depends not only on the values of k, d, and n but also (as we see in the case of three collinear points) on the geometry of Z. This question, in some form, dates back to at least the 4th century. We will talk about several attempts to answer it throughout history and some surprising connections to modern algebraic geometry.

Thursday, January 30, 2020, 4:00 pm
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