

## Special Colloquium

### *The Maximal Rank Conjecture*

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**Abstract:** Curves in projective space can be described by either parametric or Cartesian equations. A natural question is how the parametric and Cartesian descriptions of a curve relate to each other. We describe the Maximal Rank Conjecture, formulated originally by Severi in 1915, which prescribes a relationship between the "shape" of the parametric and Cartesian equations — i.e. which gives the Hilbert function of a general curve of genus  $g$ , embedded in  $\mathbb{P}^r$  via a general linear series of degree  $d$ .

We then discuss the "interpolation problem" which asks how many general points a curve of given type can pass through (for example a line can pass through two general points but not three). We conclude by sketching how recent results on the interpolation problem can be used to prove the maximal rank conjecture.

Wednesday, December 5 at 3:00 PM in 636 SEO