

Department of Mathematics and Statistics Colloquium

Why is Pappus's Theorem Interesting in Modern Commutative Algebra?

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Abstract: In the 4th century Pappus of Alexandria proved the following: Suppose ℓ and m are distinct lines in the plane. Let $P_1, P_2,$ and P_3 be distinct points on ℓ and not m ; let $Q_1, Q_2,$ and Q_3 be distinct points on m and not ℓ . Then the three points $R_1 = \overline{P_2Q_3} \cap \overline{P_3Q_2}, R_2 = \overline{P_1Q_3} \cap \overline{P_3Q_1}, R_3 = \overline{P_1Q_2} \cap \overline{P_2Q_1}$ are collinear.

This talk presents the insightful paper on Cayley-Bacharach Theorems written by Eisenbud, Green, and Harris in the 1990s, from which the famous EGH Conjecture spawned. The paper's remarkability comes from the fact that although its conclusions involve deeply esoteric machinery, the majority of the development given in this talk relies only on classical Euclidean and projective geometry!

Monday, October 2 at 3:50 in Roop 103

Refreshments at 3:30