Harvard-M.I.T. Algebraic Geometry Seminar

OPEN PROBLEMS IN ALGEBRAIC GEOMETRY

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Abstract:
The three speakers will discuss open problems they would like to see solved.

Joe Harris: On the question of when multiples of general points impose independent conditions.

Steve Kleiman: Curves in space: linkage and complete intersection. The subject is a new characterization of complete intersections among Cohen–Macaulay curves as those that are subcanonical and self-linked. The result holds in characteristic 0. There’s a counterexample in characteristic 2, but the curve is a double line. Does the result hold in positive characteristic for reduced curves?

Ezra Miller: Formulae for cohomology classes using Gröbner bases. Some kinds of varieties (toric varieties and flag varieties, for instance) can be expressed as quotients of open subsets of affine spaces by algebraic group actions. Taking the closures of subvarieties in the affine space and Gröbner deforming them sometimes yields interesting formulae in equivariant cohomology that hold in ordinary cohomology after quotienting. Can this work for the quiver cycles studied by Fulton and Buch?

Tuesday, April 24
3:00 p.m.
MIT Room 4–163