# Berkeley-Stanford Algebraic Geometry Seminar

**Tuesday, April 12, at Berkeley (Evans Rm. 939, 3:45–4:45 and 5:00–6:00)**

## MIRCEA MUSTATA(Michigan): On some invariants of singularities

**Abstract:** I will describe some invariants of singularities defined in positive characteristic via the Frobenius morphism. While elementary to define, they record information that in characteristic zero comes from the resolution of singularities, but also some more subtle information of an arithmetical nature. This is based on joint work with S. Takagi and K.-i. Watanabe.

## ROB LAZARSFELD (Michigan): Asymptotic invariants of line bundles

**Abstract:** It is a classical fact in algebraic geometry that hyperplane sections of projective varieties (or more generally "ample" divisors) satisfy many beautiful geometric, numerical and cohomological properties. On the other hand, various examples led to the traditional belief that the behavior of more general divisors was mired in pathology.
However it has recently become clear that arbitrary effective (or "big") divisors display a surprising number of properties analogous to those of ample line bundles. The key is to study the divisors in question from an asymptotic perspective.
I'll give an introduction to this circle of ideas, focusing on one invariant (the "volume") that measures the rate of growth of the number of sections of powers of a line bundle. The talk will center around examples and open problems.

**There will be a dinner afterward.**

This seminar alternates between Stanford and Berkeley. To organize transportation from Stanford to Berkeley, please contact Jun Li or Ravi Vakil. Also, please let us know if you will stay for dinner, by Monday morning, so reservations can be made.

`http://math.stanford.edu/~vakil/s0405/`