Number Theory Colloquium

Pencils of quadrics and the arithmetic of hyperelliptic curves

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Abstract: Finding integral and rational solutions to polynomial equations with integer coefficients has always been a fascinating subject to mathematicians. In this talk we will look at the hyperelliptic equations y^2 = f(x) and discuss how many solutions they have typically. There has been several results on this recently by Manjul Bhargava and his collaborators via the study of rational orbits of certain representations of reductive groups and by applying the techniques of geometry of numbers to count these orbits. We will discuss our recent joint work with Manjul Bhargava and Benedict Gross on solutions to the hyperelliptic equations over odd degree field extensions of Q and see how the geometry of pencils of quadrics plays a pivotal role in this work.

Thursday, February 5, 2015, 4:00 pm
Mathematics and Science Center: W303

Mathematics and Computer Science
Emory University