

Department of Mathematics and Statistics
Colloquium Lecture Series

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Using Algebra to Study Curves

Finding solutions to polynomial equations is one of the oldest questions in mathematics. Arithmetic geometry is the study of solutions to systems of polynomial equations specifically over rings such as the integers or number fields (finite extensions of \mathbb{Q}).

Perhaps the best known examples of arithmetic geometry come from the study of elliptic curves. The points on these curves have a beautiful, natural group structure which allows us to use results from algebra to study these groups, and in turn, the points on these curves. This approach has had profound success in such varied ways as proving long open conjectures like Fermat's Last Theorem and finding applications in cryptography. We will talk about these ideas as well as how to deal with more general curves which do not have this natural group structure.

Thursday, March 26, 2009

Chapman 106

1:00–2:00

Refreshments after the talk in Chapman 101A