

# Philadelphia Area Number Theory Seminar

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## Geometric Iwasawa theory

**Abstract:** Iwasawa theory studies the variation of arithmetic invariants in  $p$ -adic Lie towers of global fields. The traditional focus of Iwasawa theory has been towers of number fields. For example, a classical theorem of Iwasawa states that the  $p$ -primary part of the class group grows with remarkable regularity along a  $\mathbb{Z}_p$ -tower of number fields. The function field case is much less understood and gives rise to new complications: There are far more towers of function fields than there are of number fields! In this talk we will discuss various programic conjectures on the variation of invariants (e.g. Newton polygons and  $a$ -numbers) along  $p$ -adic towers of function fields. We will also discuss progress towards these conjectures.

**Thursday, April 14, 2022**

**3:25 – 4:45 PM**

Swarthmore College  
Department of Mathematics and Statistics  
Science Center **149**

Informal refreshments at 3:10PM