1155-11-242   **Padmavathi Srinivasan*** (`padmavathi.srinivasan@uga.edu`), **Andrew Obus** and **Kirsten Wickelgren**. *Topological and number-theoretic invariants in algebraic geometry.*

This will be a two part talk. The first half will be the story of conductors and discriminants, which are two closely-related invariants associated to a degenerating family of curves. These invariants show up in many conjectures in number theory, and also have avatars in algebraic geometry and algebraic topology. In this talk, we will introduce a combinatorial refinement of the discriminant, which allows us to prove an inequality between the conductor and the discriminant for families of hyperelliptic curves.

In the second half, we will give a brief introduction to A^1 enumerative geometry. A^1 enumerative geometry is a new field that infuses tools from algebraic topology into algebraic geometry. Using these tools, one can provide "enriched counts" for certain classical enumerative problems in algebraic geometry, valued in quadratic forms. Such counts impose interesting restrictions on the arithmetic of solution sets over non-algebraically closed fields. In this talk, we will explain such an enrichment (joint with Kirsten Wickelgren) for the classic problem of the number of lines meeting four lines in 3-space. (Received January 14, 2020)