Travis W. Morrison* (txm950@psu.edu). *Diophantine definability of the non-squares in a global field.

In joint work with Kirsten Eisenträger, we show that the ring of S-integers in a global function field with characteristic not 2 has a first-order universal definition. This follows work of J. Koenigsmann and J. Park who gave first-order universal definitions of \( \mathbb{Z} \) in \( \mathbb{Q} \) and the ring of integers in a number field, respectively. I will discuss how we use the ideas developed in these papers to prove that the non-squares of a global field \( K \) with \( \text{char}(K) \neq 2 \) are diophantine over \( K \), which was first shown by B. Poonen. (Received January 12, 2017)