Strolling Through Euclid's Orchard

What: **Bi-State Colloquium**
When: **Friday, September 21, 4:00pm**
Where: **Loras College, Hennessy 250**
Who: **Jeremy Edison**

For each pair of natural numbers n and m, imagine planting a unit height tree at the point (n, m) in the plane. The resulting array of trees is known as "Euclid's Orchard." If we stand at the origin and look at the orchard, which trees can we see, and which will be blocked from our view by another tree? If we look straight forward in an arbitrary direction, what is the chance that there will be a tree in our line of sight? In this talk, we'll discuss the simple but surprisingly deep answers to these questions. Additionally, we'll explore the intriguing relation between Euclid's Orchard and Thomae's "popcorn function," a function which is continuous on the set of irrational numbers but discontinuous at each rational number. This talk is intended to be introductory. Anyone who is familiar with the notions of continuous functions and some basic properties of the rational and irrational numbers should be able to follow along.

Jeremy Edison is a graduate student in mathematics at the University of Iowa.