

# SWARTHMORE COLLEGE

• DEPARTMENT OF MATHEMATICS AND STATISTICS •

## Dresden Memorial Lecture Series

### **Akshay Venkatesh**

Institute for Advanced Study



#### ➤ **Thursday, February 1**

4:30-5:30pm Lecture, 4:15pm Refreshments

Glimpses through the lens of entropy.

Entropy is a remarkable idea which helps us to organize our understanding of complicated systems. It has crossed many scientific boundaries and is now a fundamental concept in mathematics, computer science and physics. I will give a gentle introduction to some of the ideas behind entropy and how it helps us think about questions as varied as COVID testing, how to communicate, and car engines.

#### ➤ **Friday, February 2**

12:30-1:30pm Lecture, 12:15pm Refreshments

The hardest homework problem ever?

A 22-line poem written around 200 B.C. and attributed to Archimedes challenges the diligent and wise recipient to compute number of cattle in the herds of the Sun God, after enumerating various properties of these herds. In mathematical language, the lines of the poem translate into a system of constraints that determine, eventually, a simple equation in two variables; but the resulting question is so hard that it required the passage of 2000 years to solve. (It turns out that the Sun God has no shortage of cows.)

I will tell the story of this puzzle and its underlying mathematics, which is amazingly rich, inspiring mathematicians from Ancient Greece and medieval India to the present.

**Science Center 101 (Chang Hou Hall)**