Kiran Kedlaya

## *Counting Solutions of Polynomial Equations Modulo p*

San Jose State University*
Engineering Auditorium 189

7:30 pm
Friday, January 20, 2012

Given a collection of polynomial equations in some number of variables with integer coefficients, one can ask how many solutions they have when reduced modulo a prime number p. This gives a function of p which can be somewhat complicated; saying something meaningful about it often turns out to bring in some rather sophisticated pieces of mathematics. I'll illustrate with some examples related to some familiar theorems, brand-new results, and open problems in number theory.
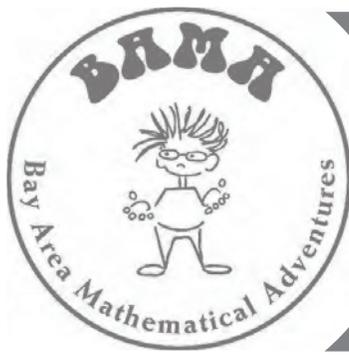
Kiran Kedlaya received the B.A. from Harvard in 1996, the M.A. from Princeton in 1997, and the Ph.D. from MIT in 2000. A Liftoff fellow of the Clay Mathematics Institute, he continued as an NSF postdoctoral fellow and visitor at U.C. Berkeley, MSRI, and the Institute for Advanced Study before joining the MIT mathematics faculty in 2003. Professor Kedlaya's primary research interests are in number theory and algebraic geometry; he is a specialist in p-adic analysis. He is also interested in computational methods and applications of number theory in computer science. In 2006, he received both a Presidential Early Career Award for Scientists & Engineers, and an NSF Career Award. He is also a Sloan fellow.
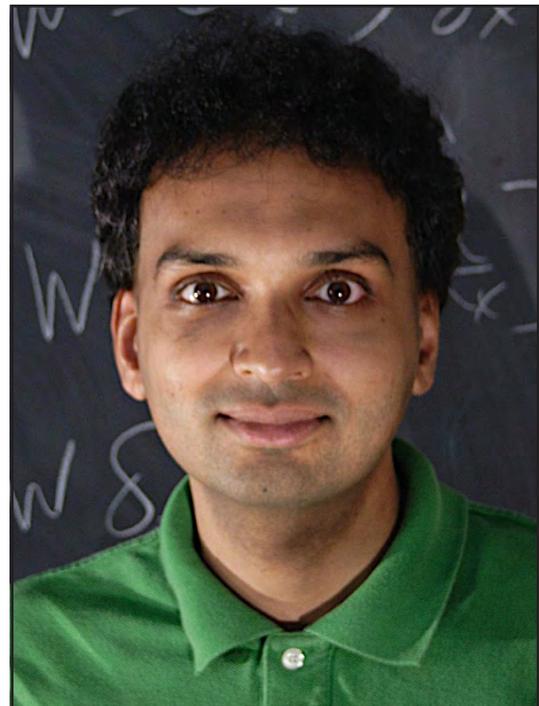
* See back for map and directions.

BAMA

Bay Area Mathematical Adventures

A series of presentations on diverse topics by remarkable mathematicians. All talks are free and open to the public.

WHY? BAMA aims to challenge and motivate students to think mathematically. Speakers will present real mathematics, and will share with the audience modern views of mathematics. Some talks will provide students with related problems, or will enable teachers to expand later on the topics with their students.

WHO? BAMA is aimed at bright high-school age students. However, all are welcome: younger or older students, teachers, parents, and the general public.

WHEN? Evening talks will be given approximately once a month between September and April. Each talk will be self-contained (speakers will not assume their audiences have attended previous talks).

WHERE?

San Jose State University
Engineering Auditorium 189

■ From 101 take the First Street or Guadalupe Expressway exit and go to Fourth Street.

■ Take Fourth to San Salvador Street; turn left onto San Salvador and park in the South Garage. The automated pay stations located on level 3 and above accept coins, $1, $5 and $10 bills, Visa or Master Cards. Parking is $1.00 per ½ hour or $5.00 day pass after 5:30.

■ From 280 take the 7th Street exit and turn North on Seventh St. The garage is on the left after 5 or 6 blocks.
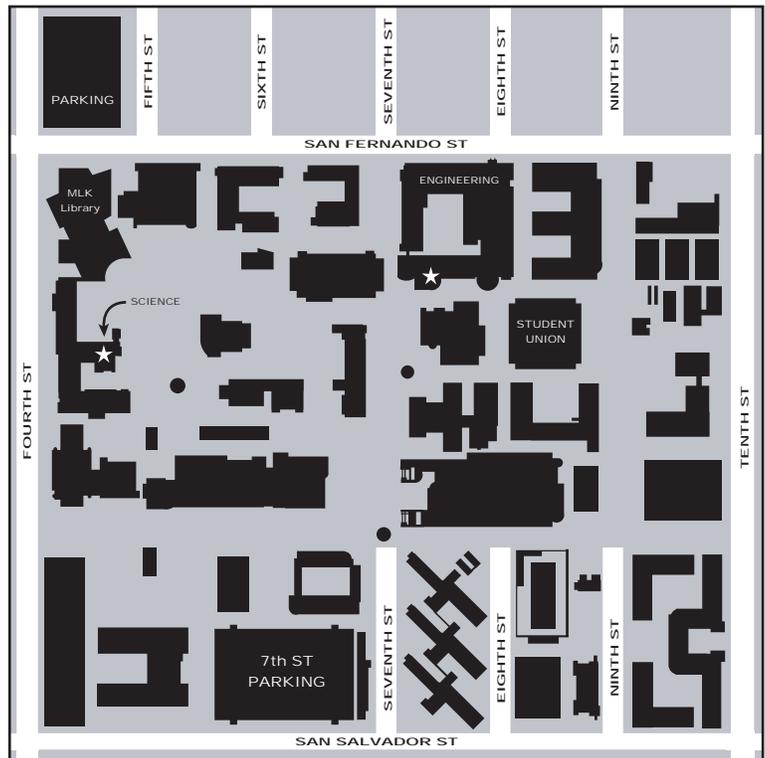
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FOR MORE INFO:

http://www.mathematicaladventures.org

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