

The 1995 Arnold Ross Lectures

Each year, the AMS sponsors the Arnold Ross Lectures, a special one-day program of talks by outstanding mathematicians presented to an audience of high school students. The aim of the program is to reveal to young people the beauty and excitement of mathematics and its uses.

The 1995 AMS Arnold Ross Lectures were presented on April 22 at Rice University. The lecturers were Fan R. K. Chung of the University of Pennsylvania, John Tate of the University of Texas at Austin, and Rice's own Frank Jones. The lectures were attended by gifted students from high schools in the Houston area. Their teachers, plus a few Rice students, were also in attendance. One teacher came from Tyler, Texas, which is nearly 200 miles from Houston.

John C. Polking of Rice University, the local organizer for the program, says that the students who were there "got three wonderful lectures." Chung spoke on the mathematics of buckyballs, which was particularly appropriate because buckyballs were discovered at Rice University. Apart from the connection the buckyballs provide between mathematics and chemistry, they have a wealth of interesting combinatorial, topological, and geometrical aspects, which Chung described.

Tate's talk about Fermat's Last Theorem was "animated and informative," says Polking. "I've heard several people give talks on this subject in the past couple of years, and this one was among the best." Tate discussed the recent proof of Fermat, begun by Andrew Wiles and completed by Wiles and Richard Taylor. The students found Tate's recollections about the personalities and the stories surrounding the mysterious theorem to be particularly intriguing.

It seems that Jones brought down the house with his lecture on Ford circles and Farey fractions. Ford circles are a family of mutually tangent circles in the half-plane, all tangent to the x -axis, and their points of tangency on the x -axis form a set of rational numbers called Farey fractions. Starting with very elementary ideas, some surprisingly interesting mathematics results. One measure of the success of this lecture is the fact that Jones's assignment of a "homework" problem was met with great enthusiasm. Jones, a master teacher, "gets that reaction every day in his classes," Polking remarks.



Arnold Ross lecturers Frank Jones and John Tate (back row) and Fan R. K. Chung (front row, left) with Anne Papakonstantinou (director, the Rice University School Mathematics Project) and John C. Polking (organizer).

The lectures were organized by an AMS committee consisting of Harvey B. Keynes of the University of Minnesota, Paul J. Sally of the University of Chicago, and Jean E. Taylor of Rutgers University. The AMS has sponsored such lectures for high school students in Boston (1988), San Diego (1990), Chicago (1992), Columbus, Ohio (1993), and Minneapolis (1994). In 1993, the AMS named the lectures in honor of Arnold Ross of the Ohio State University. Ross is the director of the Horizons Unlimited Program for inner-city students and the Young Scholars Summer Program. His programs have inspired some to pursue careers in mathematics research and fostered in many others a lifelong love of mathematics.

The Arnold Ross Lectures have been made possible in part through funding by the Exxon Education Foundation. For more information about the program, contact Timothy Goggins, AMS Development Officer, American Mathematical Society, P.O. Box 6248, Providence, RI 02940-6248.

—Allyn Jackson