Department of Mathematics

Schedule of Events—February 26, 2002–March 1, 2002

Friday, March 1, 1:00–5:00 pm

ScienceFest
University Union Ballroom

Friday, March 1, 4:00 pm

Colloquium
Speaker: Gregory Galperin
Old Main 214/2231

Title: The Mean Time Period Between Two Collisions in Billiards and in the Gas of Molecules

Abstract: I will describe a remarkable formula for the mean time period between two consecutive collisions of a billiard particle moving inside a closed, bounded domain in multidimensional space. The formula does not depend on the shape of the domain, but depends only on the domain's volume, the surface area of its boundary, and the dimension of the space.

The formula can be applied to the gas of molecules in a container. When applied, it gives the classical thermodynamical results found by the eminent physicist Boltzman more than 100 years ago.

The formula arises from purely geometric considerations. The reasoning is mostly elementary and geometric.