The Southern Oregon University Mathematics Department proudly presents:

2011 Kieval Lecture Series
Dr. Sherman Stein, Professor Emeritus, UC Davis

THE UNBIASED LAWN SPRINKLER
Thursday, May 5, 10 AM at <u>Churchill 230</u>

Noticing that my lawn sprinkler did not distribute water evenly, I decided to devise one that would. The talk will describe the design of the ideal sprinkler, which uses only freshman calculus and its reception by the manufacturer of sprinklers.

TRANSVERSALS OF RECTANGLES
Thursday, May 5, 2 PM at <u>Churchill 230</u>

A Latin square of order n consists of n^2 cells arranged in n columns and n rows. Each row and each column contains the integers from 1 to n. A transversal consists of n cells, one from each row and from each column, and containing all n integers. The talk will generalize these concepts to rectangles, will describe what is known, and will offer a conjecture whose truth would settle an old problem about Latin squares. It is intended for math faculty, computer scientists, and math majors.

THE PATH OF THE REAR WHEEL
Friday, May 6, 10 AM at <u>Taylor 28/31</u>

When the front wheel of a scooter (bicycle, car) follows a certain path, what is the path of the rear wheel? This question was raised over three centuries ago in the case where the path of the front wheel is a straight line (as when parking a car along a curb). The talk will treat this and other paths. The main mathematical tool used will be the derivative of a vector function.

MORE HUMILITY, PLEASE
Friday, May 6, 4 PM at <u>Science 118</u>

Mathematics, with its clear-cut axioms and rules of deduction, is the opposite of the rhetoric we practice every day. As individuals or groups we live in a world where there are no agreed-upon assumptions and no rules of deduction. I once hoped that mathematics could bring more reason to the settling of disputes, but now admit that there are limits to what we may call "rational". I will describe the source of the limits, including some that originate in the mathematical structure of the issues with which we must deal. Along the way, I will suggest ways we can compensate for those limits.