

1023-F1-896

Theresa Laurent* (tlaurent@stlcop.edu), St Louis College of Pharmacy, 455 Parkview Place, St. Louis, MO 63110. *Steroids, Alcohol and Birth Control: Precalculus Investigations of Current Health Issues.*

If Barry Bonds did take steroids, will we ever know? Is your friend's blood alcohol level too high to drive safely? What's the difference between a birth control patch and oral contraceptives?

To answer these questions, students investigate several different mathematical functions that model drug concentrations in the bloodstream. Using exponential functions, geometric series, and graphing technology, students explore the effects of taking medication over a long period of time, how long a drug stays in the bloodstream, and how quickly drugs are absorbed and eliminated from the body.

After a brief introduction to terminology, students learn how to develop, evaluate and graph different mathematical models found in the field of pharmacokinetics. To improve conceptual understanding, Excel worksheets are used to let students explore what effect the dose size, frequency of administration, and half-life of the drug have on the concentration of drug in the bloodstream.

The presenter will explain the mathematical models used and demonstrate the Excel worksheets that are used in class. Several examples of student work and student reactions to this unit will be shared. (Received September 22, 2006)