1023-R1-1393 **Randal E. Hickman*** (ar2000@usma.edu). *Applications of Computer Technology in an Undergraduate Probability Curriculum.* Preliminary report.

Probability theory is a fundamental skill for students studying Operations Research. The academic community has endorsed the increased use of computer algorithms in general, but we are less willing to accept technology in the study of probability. We revert to the traditional use of tabular data for probability distributions when this is unnecessary and cumbersome in the computer era. This presentation proposes a computer-based probability curriculum, employed by the introductory course in Probability and Statistics at West Point. The curriculum focuses on theoretical principles of probability. Students exercise these principles by coding their own computer programs for each distribution, starting with the PDF or PMF. Using the software they created, students solve the exact probabilities without the need for tabular data or tedious interpolation. Students use Empirical Distribution Functions (EDFs) to visualize the accumulation of probability. Optimally fitting smooth curves to the EDF (in a least squares sense) motivates the concept of a CDF. By programming their own probability software, students rapidly embrace the theory behind probability distributions. They have also created a method to quickly and accurately solve the exact solutions for probability problems. (Received September 25, 2006)