

**Alan Kraft: Oscilloscope
Awarded \$493**

The Electrical Engineering Department in the College of Engineering at Valparaiso University offers a course, ECE 472 Power System Analysis, that has a laboratory component. With the need for space in Gellerson Center becoming a problem every year due to the pressures from new and changing technologies, almost all of the equipment that was used in ECE 472 has been removed from Gellerson. There only remains a small power system simulator system which consists of a PC with simulation software installed. The PC also has software installed that takes the results of a simulation and outputs it in a compatible format to a rack of power system relays that works well for experiments in the area of system protection. What is needed at this time is equipment that will allow a more diverse set of experiments to be developed. One key component of this improvement would be the acquisition of an Agilent U1602A, handheld Oscilloscope. This test equipment will allow power level experiments that will display voltage and current in real power loads. This will allow the students to observe actual phase shifts or lack of phase shifts in devices like incandescent light bulbs, florescent lights, and small motors. This oscilloscope also has a Fast Fourier Transform (FFT) feature that will enable the students to explore harmonic distortions that some devices introduce into the power system.