

**WS3 VPYTHON: 3D PROGRAMMING FOR ORDINARY MORTALS**

**Bruce Sherwood**, *North Carolina State University, Raleigh NC, USA*

VPython is a programming environment which enables even novices to write programs that produce navigable real-time 3D animations. The new version 5 supports transparency and material displays such as wood or marble on all platforms, and for the first time runs as a native application on the Mac. Students in our introductory physics courses use VPython to write programs to model physical systems and to visualize electric and magnetic fields (<http://www4.ncsu.edu/~rwchabay/mi>). One to two hours of carefully crafted instruction is sufficient to bring novice students to the point of being able to do serious computer modeling.

VPython is based on the Python programming language (<http://python.org>) which has a large user community. Like Python, VPython is open source freeware available for Windows, Linux, and Macintosh (<http://vpython.org>). Workshop participants will learn to write 3D programs and can sample existing physics applications.