

1035-Z1-1261      **Albert W Schueller\*** ([schuelaw@whitman.edu](mailto:schuelaw@whitman.edu)), Department of Mathematics, 345 Boyer Avenue, Walla Walla, WA 99362. *Student Generated Demonstrations*.

In our senior project course for math majors, the creation of computer-based demonstration applets and programs has proven to be a rich source of projects for the more computer literate students. The web and on-line venues like the Journal of Online Mathematics and its Applications make it easy and exciting to share these demonstrations with the wider world. Two such projects will be shared: A computer generated movie that explores fractals and an applet that demonstrates the idea of general transformations from  $\mathbf{R}^2$  to  $\mathbf{R}^2$ . Also, freely available supporting resources for faculty will be discussed.

The process of creating computer-based demonstrations provides a concrete framework for the student to explore deep aspects of the topic of demonstration. For example, in the transformations applet, the student was motivated to address the problem of inflationary transformations that might be specified by the user. Space filling algorithms, closely tied to the specified transformations, had to be considered. Problems like this arise naturally and often require mathematical solutions with proof. Abstract considerations become real and almost tangible to the student as they try to make their demonstrations work. (Received September 19, 2007)