

**Meeting:** 1003, Atlanta, Georgia, MAA CP N1, MAA Session on Teaching Visualization Skills

1003-N1-730      **Julie Barnes\*** ([jbarnes@email.wcu.edu](mailto:jbarnes@email.wcu.edu)), Dept. of Mathematics and Computer Science, Western Carolina University, Cullowhee, NC 28723, and **Kathy Ivey** ([kivey@email.wcu.edu](mailto:kivey@email.wcu.edu)), Dept. of Mathematics and Computer Science, Western Carolina University, Cullowhee, NC 28723. *Hands-on Visualization in Preparation for Computer Graphics*. Preliminary report.

We will share a variety of hands-on activities that we use in class to help students truly ‘feel’ what a graph is telling them. These are low tech ideas that mostly use no more than some string, masking tape, and children’s toys, and they can be modified for use in a wide range of mathematics classrooms. We do these activities prior to using technology because it helps build a foundation for students to discuss the graphics when they do generate them.

We will briefly describe the following activities. 1) Algebra Aerobics: an activity where students stand on an x-y axis and move according to translation rules. 2) Spider Webs: an activity where the room becomes a 3-dimensional axis system and students use yarn to create vertical cross sections and contours of functions on two variables. 3) Mountains: an activity where students use Play Doh to model the shape of the graph for functions on two variables given contour plots. 4) Epsilon-Delta Games: activities that are done by taping a function to the floor and having students use yarn to represent epsilon - delta regions.

The majority of the talk will consist of showing photographs of students doing some of the above activities while explaining why the activity is useful. (Received September 28, 2004)