1023-D1-1601   **Michael J. Bardzell*** (`mjbardzell@salisbury.edu`), Dept. Math and CS, Salisbury University, Salisbury, MD 21801. *Visualizing Binomial Identities using PascGaloisJE.* Preliminary report.

In this talk we will summarize work to visualize binomial identities modulo a prime using the software PascGaloisJE. This JAVA program allows users to generate cellular automata defined over group alphabets. When finite cyclic groups of prime order are used, binomial coefficients modulo a prime can arise (Pascal's triangle modulo a prime is a special case of this). Many interesting binomial identities can be "seen" from the graphical output of the program. Identities from undergraduate research projects will be shown. These combine ideas from combinatorics, number theory, and abstract algebra. (Received September 26, 2006)