1003-20-1286   **Zajj B Daugherty*** (`zajj@math.hmc.edu`), Harvey Mudd College, 340 E Foothill Blvd, Claremont, CA 91711. *An Algebraic Approach to Voting Theory.* Preliminary report.

In voting theory, simple questions can lead to convoluted and sometimes paradoxical results. Recently, mathematician Donald Saari used geometric insights to study various voting schemes. He argued that a particular positional voting scheme (namely that proposed by Borda) gives rise to the fewest paradoxes. In this talk, I will present an approach to similar ideas that will draw from group theory and algebra. In particular, I will employ tools from representation theory to elicit some of the natural behaviors of voting profiles. I will also make generalizations to similar results for partially ranked data. (Received October 04, 2004)