1145-VV-307 **Clifford A Reiter*** (reiterc@lafayette.edu), Department of Mathematics, Lafayette College, easton, PA 18042. *Searching for Complex Cellular Automata.*

Cellular automata are often classified as exhibiting ordered, complex or chaotic behavior. We investigate using the average and standard deviation of input entropy to search for random examples of automata that exhibit complex behavior. We illustrate this with searches for complex one and two dimensional general automata and for one and two dimensional Larger than Life automata. Self-organizing structures occur and spontaneous symmetries appear from random initial conditions with surprising frequency. (Received August 29, 2018)