

Project Summary

Jacob Usinowics

College of the Atlantic

Mentors: Cosma Shalizi, SFI; Jim Crutchfield, SFI; and Dave Feldman, College of the Atlantic

Jacob Usinowics is working with several members of the Computational Mechanics Group to adapt the algorithms used in causal-state identification and machine-reconstruction for use with data from two-dimensional systems. Once this has been accomplished, the algorithm(s) will be applied to a set of two-dimensional cellular automata that undergo phase transitions under the variation of probabilistic parameters. The intentions of this application are two-fold. At one level it will be a test of the algorithm. At another level, examination of the structures and processes in the cellular automata near the phase transition may provide a formal quantitative means of investigating the notion of self-organization.