



Iowa Colloquium on
Information, Complexity, and
Logic
October 2018 Meeting

Location: Drake University in Meredith Hall 106

[Map of Drake University](#)

[Parking Map](#)

Time: Thursday, October 4 at 3:00 PM

Speaker: Jack Lutz (Iowa State University)

Title: Algorithmic Randomness in Chemical Reaction Networks: Logic meets Nanotechnology

Abstract: This talk is an *introduction* to the following three things.

Chemical reaction networks. These are *mathematical* objects that serve simultaneously in three different roles.

1. They are models of chemical processes in well-mixed solutions.
2. They form a general-purpose programming language in the ordinary sense.
3. They form a programming language for nanotechnology.

Algorithmic randomness. This is a theory of what it means for an *individual* stream of data to be *random*. It is a beautiful theory that had to wait for computer science to be formulated coherently.

The meeting of these. I report recent work with Xiang Huang and Andrei Migunov developing the theory of randomness for *individual trajectories* of chemical reaction networks. I also indicate directions for future research in this new area.

Parking Information: There are a limited number of guest parking passes available. Please contact Adam Case (adam.case@drake.edu) to request a pass. There is also free parking along 24th Street on the east side of Lot 1, and two hour parking is available along 25th Street on the west side of Lot 1.