

Automata Chemistry Experiments with Replicators and Parasites

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I will talk about our Stringmol automata chemistry, designed to allow experiments with replicators under mutation. I will discuss experiments in an "RNA-world" analogue system, where strings designed to be replicators evolve in a spatial environment. Parasites rapidly evolve, then defences against those parasites, in ever more complex scenarios. The well-mixed (aspatial) system rapidly goes extinct, but a spatial arrangement allows the system to escape being overwhelmed by parasites. I will also discuss experiments in a "DNA-world" analogue, where a string is crafted to be an analogue of a von Neumann replicator, and show how this can evolve different behaviours without changing the string sequence.