“What is it like to be a molecular robot based on DNA?”

Milan Stojanovic (on behalf of the Center for Molecular Cybernetics)

One possible approach to defining molecular robotics is “we’ll know it when we see it”; it usually focuses on mimicking various macroscopic behaviors on molecular scale, often starting with walking. I will discuss an alternative approach to autonomous molecular robots pursued at our NSF Center for Molecular Cybernetics and inspired by Rodney Brooks Behavior-based Robotics. We start with sensor-actuator legs implementing local residency rules, and build higher level behaviors by adding connections between legs, and introducing various sensors. And, yes, our current design uses DNA.