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**Amir H Assadi\*** (ahassadi@wisc.edu), 3407 Circle Close, Madison, WI 53705, and **Hamid Eghbalnia** (heghbalnia@gmail.com), Madison, WI 53706. *Biological Computation at Molecular and Cellular Scales*. Preliminary report.

Biological Computation at Molecular and Cellular Scales. Formation of bacterial biofilms (quorum sensing QS) is a highly complex dynamical behavior. QS is studied for decades by micro-/molecular-biologists, and plays a key role in bacterial toxicity, pathology (e.g. Cystic Fibrosis by *Pseudomonas aeruginosa*) and bioremediation. Advances in bacterial genomics reveal that Quorum Sensing involves a highly-organized system of biochemical interactions of genomic origin that reflect evolutionary and physiological diversification. We propose for a model of biological computation inspired by QS. We outline the steps to verify computation steps from transformation of the measurements from the relevant biological molecular/cellular events. Acknowledgement. Partial Financial Support by NSF. (Received July 26, 2017)