1096-76-698 **Sarthok Sircar*** (sircar1981@gmail.com), 1350 and 20th Street, Apartment J24, Boulder, CO 80302. *Chemotactic adhesion is bacterial flocs: a multi-scale model.*

Most of today's experimentally verifiable scientific research, not only requires us to resolve the physical features over several spatial and temporal scales but also demand suitable techniques to bridge the information over these scales.

In this talk, I present numerical results of the adhesion fragmentation dynamics of bacteria (or in general: rigid, round particles) clusters subject to a homogeneous shear flow. In the continuum level we describe the dynamics of the number density of these cluster. The description in the micro-scale includes (a) binding/unbinding of the bonds attached on the particle surface, (b) bond torsion, (c) surface potential due to ionic medium, and (d) flow hydrodynamics due to shear flow.

Results show certain features in the adhesion dynamics which were not captured experimentally. (Received September 09, 2013)