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BIOMATH

Department of Biomathematics Seminar Series:
Frontiers in Systems and Integrative Biology

Predicting and Designing Self-Assembling Systems

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Thursday, January 7, 2016
4:00 PM
13-105 CHS
Center for the Health Sciences

ABSTRACT:
I will present a theoretical method for predicting and designing self-assembling systems. I will demonstrate that, by using analytic solution to a statistical mechanics model (the spherical spin model), it is possible to predict several interesting pattern formation phenomena in systems of point particles with isotropic interactions. Further, using the same basic idea, I will show that it is possible to design the interactions so that the particles self-assemble into target lattice structures. Last, I will demonstrate how these ideas can also be used to predict and design self-assembly of so called patchy colloids, i.e. nano-particles with spots and stripes on their surface.

Host: Van Savage

To receive e-mail seminar notices, contact David Tomita (dtomita@biomath.ucla.edu)