THE UNIVERSITY OF CHICAGO

Department of Statistics

STATISTICS COLLOQUIUM

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Two Tales of Pattern Formation: Michael Faraday's Crispations and Alan Turing's Spots

TUESDAY, April 28, 2015, at 4:30 PM

Eckhart 133, 5734 S. University Avenue

Refreshments preceding the seminar at 4:00 PM in Eckhart 110.

ABSTRACT

Using two case studies, this talk will describe the role of symmetry-breaking bifurcations in pattern formation. Faraday waves are standing waves that form on the surface of a fluid that is subjected to a vibration. These wave patterns can take on a wide variety of beautiful forms, the nature of which depend on the frequency content of the periodic forcing function. Turing patterns were proposed in the setting of reaction-diffusion systems, and they involve a simple mechanism that is often invoked to explain the appearance of regularly spaced spot and stripe patterns that arise naturally in the environment.

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