Pattern Formation

Pattern formation is the study of general mechanisms leading to the appearance of simple or complex spatial patterns. It is motivated by the existence of similar patterns in seemingly dissimilar systems (e.g. animal coat markings, vegetation patterns, convection patterns). Participants will conduct mathematical research in the area of pattern formation from a viewpoint of dynamical systems and differential equations.

THE PROGRAM

Six weeks (July 17 – August 25, 2017) on the University of Minnesota campus in Minneapolis.

Use numerical simulations and analytic proofs to gain better insight into underlying dynamics of pattern formation. The REU will focus on one or more examples:

• Fairy circles as self-organized patterns
• Ripple patterns in moving bacteria colonies
• Space-time resonances and fluid instabilities

Participants will receive a stipend of $4800 from which room and board expenses are deducted.

TO APPLY

Successful Applicants:

• Are motivated undergraduate students
• Need no prior research experience
• Should have an undergraduate course in differential equations or dynamical systems
• May have higher-level coursework
• May have familiarity with or an interest in learning Mathematica or Matlab
• Must be US citizens or permanent residents
• Must not complete their undergraduate degree before summer 2017

Application Deadline: February 17, 2017

For more information and to apply, go to: http://www.math.umn.edu/~scheel/reu/reu-opportunities.html